

VOLUME 2, No. 1

WINTER 1998

This second issue of the Friends of Roan Mountain Newsletter premieres our beautiful new logo. This winning entry in our logo contest was created by Lisa Hart and J. David Stokes of Waxhaw, North Carolina. Lisa, a native of Elizabethton, Tennessee, graduated from Appalachia State University in Boone, North Carolina. She owns and operates Aquascapes, where she designs, installs and maintains fresh water aquariums. Lisa has a deep love of the mountains in our area. David, a native of New York City, is an Associate Professor in the Art Department of Winthrop University in Rock Hill, South Carolina. David also heads new product design and development for Aquascapes. He is an amateur naturalist with interest in botany. The following description of the logo was included with Lisa and David's entry.

Working on the entry was a labor of love and the process itself turned out to be our tribute to Roan Mountain's marvelous biodiversity and beauty. Our hope was to create an image that would capture in some small way the essence or spirit of the Roan . . . and embody the connection that we, her stewards and friends, feel when we visit this uniquely beautiful and interesting place. Our goal was to reflect the kind of inspiration, reverence and wonder –

scientific and spiritual – one feels standing at the peak of Carver's Gap gazing skyward.

We chose for the foreground a rhododendron bloom to represent the Roan's unique flora . . . and because it is probably the most recognizable and popular feature. The image was amplified to signify one of the many microcosms to discover, study or simply admire on the Roan. The large field of background color (as seen on your membership card, but not represented in this black and white print –Editor's note) manifested as wilderness/mountain represents Roan Mountain's vast wilderness. The bird represents the fauna of the Roan and also the exhilaration or soaring of spirit we experience in her presence. The sun's rays shining upon the Roan and the "friends of Roan Mountain" in an expanse of blue sky symbolizes the natural world as connected to not distinct from human existence.

We extend our congratulations and sincere thanks to Lisa and David for giving us this beautiful logo to represent Friends of Roan Mountain. If you would like to become a member of this organization contact us at (423) 543-7576.

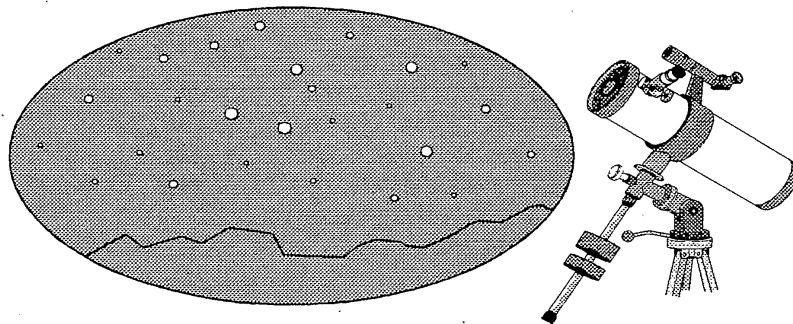


Mark your calendars now for this year's event. We are pleased to welcome **Mr. Mark Hufford with the Carolina Kids Conservancy** as our Saturday night speaker. His program, **"Wonders of Wildlife: An Exploration of the Lifestyles and Needs of Several Native Species"**, promises to be fun and informative. Mark's "Animal Ambassadors" will be sharing with us a very important message as we learn about their needs and how they were injured due to the actions of humans. To round out the weekend, a good selection of hikes and tours will be scheduled Saturday and Sunday.

Due to the devastating flood that hit Roan Mountain in early January, we will be making changes in the meeting place for the Saturday night program and meal. We ask your support in bearing with us during this very difficult situation.

Cloudland Elementary School is completely unusable at this time so there will need to be a few minor changes from our traditional meeting place. Mr. Roger Hollifield, the Principal of Cloudland High School has graciously agreed to let us use the high school gym and cafeteria on Saturday night, May 2nd. We were fortunate to have this situation work out so easily, as our only other option was to have the program in Elizabethton.

Dr. Harry Powell and Mr. David Cortner will be leading their astronomy field trip after the Saturday night program. Please note the meeting place for this trip will also be from Cloudland High School.



Thank you again for all of your continued support to the Naturalists' Rallies and your understanding of the need to make a few changes during this year's spring rally.

Rebuilding After The Flood of 1998

With so much concern and so many inquiries from our "Friends" of Roan Mountain, it seemed appropriate to include a little information on the condition of the village and the folks affected by the flood of January 7, 1998.

Occurring during the night of January 7th, the Doe River, along with the creeks that feed it, rose at an alarming rate. People were trapped in their homes, along roadsides, and in any area in which they could assume safety. Rescuers worked relentlessly throughout the night, helping people get to drier ground. Countless families lost everything; their homes completely washed away. Cloudland Elementary school, though still standing, filled up with over 3 feet of water and a thick coating of mud and other debris. Almost everything in the school was lost, and though they are trying to clean it up, the students are being sent to a smaller school in Elk Park, North Carolina until the situation here can be assessed.

Though the flood destroyed countless homes and lives, some positive aspects can be seen in the midst of much sorrow and pain. An enormous number of caring volunteers began arriving the day of the flood, and have continued to come without rest, to help families shovel mud out of their homes, rebuild bridges, bring food and supplies, and to offer whatever

support has been needed. The kindness offered to so many by individuals that know no one here, has uplifted the spirits of so many in need.

The State Park was not left untouched by this sad event, but fortunately the destruction was to repairable objects. The problems included damage to the parking area and the stone wall around the Park Headquarters, much road damage along Highway 143, all foot bridges destroyed, and much of the campground somewhat rearranged.

For those of you who would like to offer help, there are many avenues to pursue. Monetary donations can be made to local churches, who in turn are giving the money to homeless families to help them rebuild and buy needed objects to refurbish a home. Cloudland Elementary School is in need of money to help the teachers start over and equip their classrooms with teaching materials. There are new groups organizing daily with the goal of helping Roan Mountain's families. As of January 18th, the following list of organizations were available for you to contact, to offer your help or to make donations. Please feel free to call me if you need updated information.

Jennifer Laughlin Roan Mountain State Park
(423) 772-3303

To Make Monetary Donations:

Roan Mountain Christian Fellowship
c/o Al Jenkins
PO Box 148
Roan Mountain, TN 37687
(Write Flood Relief on the memo line)

Roan Mountain Flood Relief
c/o Carter County Bank
Roan Mountain, TN 37687

Cloudland Elementary School
Carter County Board of Education
c/o Pam Arwood
Academy Street
Elizabethton, TN 37643

First Baptist Church
PO Box 148
Roan Mountain, TN 37687

VOAD (To volunteer your assistance) 1-423-547-1501

HAMPTON CREEK COVE STATE NATURAL AREA

A MODEL OF REGIONAL COOPERATION

— Judy Murray

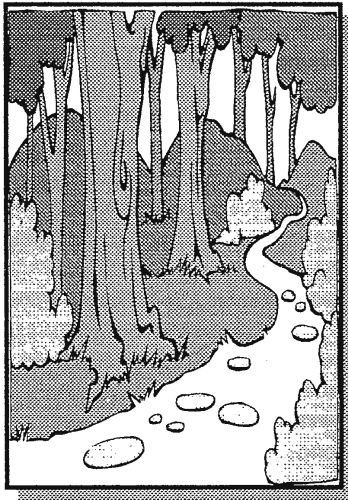
The Southern Appalachian Highland Conservancy (SAHC) is a nonprofit regional land trust whose flagship project since its inception in 1974 has been the long-term conservation and stewardship of Roan Mountain Massif, known as the Highlands of Roan. Committed to safeguarding the scenic, biological and cultural resources of the Roan highlands, SAHC purchases and maintains lands with donated funds, works with landowners creating conservation alternatives, and builds partnerships with other agencies to facilitate land preservation in the area.

An example of the grass roots cooperation that characterizes the entire Roan initiative is Hampton Creek Cove State Natural Area, a 700-acre tract nestled on the north flank of Little Hump Mountain, the largest non-federal component of the Highlands of Roan project. In 1986, SAHC purchased the tract and sold it to the State of Tennessee as a State Natural Area. Unique in the State Natural Areas system, this tract has a 125-acre grazing operation, as it has for the last century. The field edges provide significant habitat for the Golden-winged warbler, an imperiled neotropical migrant, and other rare elements do the landscape.

SAHC initiated restoration and conservation actions on this property through a number of formal and informal partnerships with public

agencies and other conservation groups

including the Tennessee Wildlife Resources Agency, the Natural Resources Conservation Service, Trout Unlimited, the National Wild Turkey Federation, and volunteers to restore the riparian zone, restore native brook trout to the stream and to enhance turkey brood range. SAHC has conducted plant and vertebrate inventories, and East Tennessee State University has added its expertise through graduate studies of Golden-winged Warbler habitat and butterfly diversity.



Much of the work of SAHC is carried on through our strong volunteer program. Due to the damaging flood of January 7, there is need for clean-up and some re-construction on Hampton Creek Cove. A volunteer work day will be scheduled for late spring. If you would like more information on this and/or summer volunteer work trips from Doe River clean-ups to grassy bald management,

please contact Judy Murray, 804 Rock City Road, Kingsport, TN 37664 or via e-mail: Roanwoman2aol.com. It's a most satisfying way to contribute to conserving the mountain's unique resources.

Judy Murray is Stewardship Director for SAHC. For information on the organization, contact the Southern Appalachian Highlands Conservancy, 34 Wall Street, Suite 802, Asheville, NC 28801.

A BRIEF HISTORY OF THE ROAN MOUNTAIN CHRISTMAS BIRD COUNT

The Roan Mountain Christmas Bird Count was begun in 1950 and has been held all but three of the 48 years since. From 1950 until 1967 Fred Behrend conducted this count alone, covering just the spruce-fir forest and grassy balds at high elevation. During this period he recorded a range of only 3 - 17 species of birds per count. Sometimes fewer than 10 birds were seen! Other birders were allowed to join him on the count from 1968-1971. Since 1973 the count has been expanded to 2-3 parties of observers, adding the area from Roan Mountain State Park over the mountain to Glen Ayre. Ripshin Lake and Roan Mountain village were added to the area of coverage in 1987. During this

latter quarter of a century the number of species has grown to a range of 24-55 per count, benefitting from the increased variety of habitats.

Highlights of the Roan Mountain CBC include appearances by two species which seldom venture this far south. The Snow Bunting has been recorded on the count three times, with a maximum of 15. The White-winged Crossbill has occurred five times, with a staggering tally of 210 individuals in 1965. Other winter finches, such as Pine Siskins and Evening Grosbeaks, are found more frequently.

THE 1997 ROAN MOUNTAIN CBC

The 1997 Roan Mountain CBC was held Dec. 21, with three parties of observers. Fog and wind on the summit resulted in little activity by birds, but conditions were better down low. Forty-eight (48) species were tallied, as follows:

1997 ROAN MOUNTAIN CHRISTMAS BIRD COUNT

Great Blue Heron - 1	White-breasted Nuthatch - 12
Mallard - 22	Brown Creeper - 3
Hooded Merganser - 2	Carolina Wren - 11
Turkey Vulture - 1	Winter Wren - 4
Sharp-shinned Hawk - 2	Golden-crowned Kinglet - 23
Red-tailed Hawk - 3	Eastern Bluebird - 8
Ruffed Grouse - 1	American Robin - 1
Wild Turkey - 1	Northern Mockingbird - 1
Killdeer - 10	European Starling - 82
Rock Dove - 59	Yellow-rumped Warbler - 4
Mourning Dove - 37	Northern Cardinal - 14
Eastern Screech Owl - 2	Eastern Towhee - 1
Barred Owl - 2	Field Sparrow - 8
Belted Kingfisher - 6	Song Sparrow - 45
Red-bellied Woodpecker - 1	Swamp Sparrow - 2
Downy Woodpecker - 6	White-throated Sparrow - 31
Hairy Woodpecker - 2	Dark-eyed Junco - 29
Northern Flicker - 2	Common Grackle - 6
Pileated Woodpecker - 5	Purple Finch - 1
Blue Jay - 5	House Finch - 4
American Crow - 167	American Goldfinch - 13
Common Raven - 8	Evening Grosbeak - 40
Carolina Chickadee - 51	House Sparrow - 27
Tufted Titmouse - 26	
Red-breasted Nuthatch - 10	

compiled by Rick Knight

POIKILOBLASTIC



Circular rainbows and thunderstorms viewed from above are Roan Mountain legends, but have you seen the pink snowflakes?



Poikiloblastic (pronounced, POIK-uh-low-BLAS-tick). I had heard that word once in graduate school, in a metamorphic petrology class. At that time, I thought, "I'll be a geologist for the next 40 years and probably never see that word again. Sounds like a nervous disorder caused by eating too much luau food." Fast-forward to 1994 (wait a second....my 40 years aren't up yet). Gary Barrigar had contacted me and asked if I would be interested in organizing a geology field trip for the Fall Naturalist Rally. I was fascinated; I said I would do it. But my first order of business was to figure out what I would be showing the participants.

Most geology field trips take the form of a car caravan, loading and unloading, stopping at every other road cut where the convoy can be squeezed off onto the shoulder of the road. I can vividly recall my college days, standing under a crumbling ledge with a 40-ton semi whizzing by just inches away. Somehow, that image just didn't seem compatible with the spirit of a naturalist rally. It would have to be a hike, point A to point B; but could we cover enough ground and see a large enough variety to make it interesting? One trip to the summit answered that question, and it was a resounding "yes". Eons of Earth history could be covered in a few miles, and a variety of mountain-

building processes could be observed in a few steps.

The chronology of geological events leading up to the present-day scenery would be punctuated by continental collisions, massive volcanic eruptions, and the birth and demise of oceans. Looking back into the abyss of time is accomplished by studying the evidence left in the rocks on every scale, from microscopic to global, from stellar to cosmic. We will hit a few high spots.

One billion years ago (give or take a million) is the age usually assigned to a continental collision and mountain-building event known as the Grenville Orogeny. In order for this collision to take place, two pre-existing continents are required. Before that, 3.5 billion years of Earth history has left us little to go on. When this collision occurred, older crystalline basement rocks were remobilized, and the Cranberry Gneiss was the result. Gneiss (pronounced, "nice") is a metamorphic rock with a composition similar to granite in that it usually contains quartz, feldspar, and mica. The gneiss, however, is foliated, which is to say it has more or less parallel layers due to zones of varying composition; but it does not separate easily along those layers. The Cranberry Gneiss outcrops today in the lower elevations of the State Park, along the

Chestnut Ridge Trail, and, of course, around the town of Cranberry. This is the rock unit in which the magnetite iron ores of the Peg Leg, Wilder, and Cranberry Mines occur.

About 820 million years ago, the colliding lithospheric plates reversed their motion, and the Grenville land mass began to break apart. A new ocean, the proto-Atlantic, or Iapetus Ocean, began to form. The Cloudland Gneiss existed, probably as a sedimentary rock, before this breakup began. Its radiometric age of 807 million years records a metamorphic event, which means the original rock was subjected to high temperatures and pressures, but it generally did not melt. This unit forms the lower slopes of Roan Mountain as well as much of the top.

As the opening of the Iapetus Ocean progressed, the terrain became extended and ruptures formed. Where the rifting was deep enough, a dense, dark magma forced its way into the voids, forming the black diabase dikes of the Bakersville Gabbro. These dikes are easily observable along Route 143 near Carver's Gap on the Tennessee side. From mile post 4 to the summit, every major road cut on the right-hand side of the road exposes Bakersville Gabbro. If you intend to collect a few samples, I recommend serious rock-breaking tools, thick gloves, safety goggles, and a note from your doctor. I use a ten-pound sledge I have nicknamed "Richter". If you manage to expose a fresh surface, examine it closely for traces of pyrite -- iron sulfide -- which could represent the source of some of the local iron ores. The Bakersville Gabbro has yielded various ages, averaging about 734 million years ago.

As spreading continued and the crust rebounded, thick bodies of granite formed in the gneiss units. These bodies, known as plutons, were derived from the existing continental crust, so their composition and color are much different from the

dark diabase and gabbro. One such pluton, the Beech Granite, forms the tops of most of the high ridges in the Park as well as White Rocks Mountain. It is well-displayed at Raven Rock. It has yielded radiometric dates of 680 to 710 million years.

By 650 million years ago, an inland basin had formed to the west of the Blue Ridge. Sediment derived from the Blue Ridge formed thick sequences of clastic rocks, such as sandstone and shale, that now outcrop along the crest of Iron and Holston Mountains as well as in the Doe River Gorge near Hampton.

By 450 million years ago, the Iapetus Ocean had begun to close. Basaltic, ocean-bottom crust was being subducted into Earth's mantle. As the plates once again collided, the mighty Iapetus Ocean was reduced to a suture just east of the Blue Ridge that is now known as the Brevard Fault. Roan Mountain was still a distant dream, but geological events were occurring that would influence the size and shape of that dream. During these events, a garnet-grade metamorphic event associated with the Taconic Orogeny occurred in the Roan Mountain area. As mentioned earlier, a metamorphic event is one in which enough heat and pressure are applied to a rock unit so as to alter its composition without actually melting the rock. A garnet-grade event means that the rock was subject to somewhere around 7 to 10 kilobars of pressure while heated to about 600 to 800 degrees Celsius. When this happens to rocks of the correct composition, garnets will form. If the host rock is soft and elastic, perfect garnets will sometimes form; but if the rock is hard and brittle, the garnets are usually less than perfect.

Hard and brittle is a mild understatement when describing the Bakersville Gabbro. Wailing away on an outcrop along the AT between the Cloudland Hotel site and Carver's Gap, I was more concerned

about being lacerated by the shrapnel than with what I could learn from the fresh fragments. Then something caught my eye, something that made my on-board search engine say "stop". It was a faint bleb in the dark gabbro, but slightly lighter in color. It had an almost pinkish cast. There were more of them, some as much as a half-inch across. And there were a few with distinctly hexagonal outlines. Buried somewhere in my cerebellum a thought was stirring, fighting its way to the surface from beneath 30 years of geotrivia, a word I thought I would never use again: "POIK...eee...looh...BLAST...ick", yeah, that's it; poikiloblastic. These were poikiloblastic garnets, which means they have a particular sort of imperfection. Crystals that made up the original gabbro are contained within the garnet. If the gabbro could be etched away, the remaining garnet would be full of interconnected voids, giving it a sieve-like texture. On a long-exposed surface, the gabbro does indeed weather away faster (but not much), leaving the lacy pink garnets standing out

in low relief, looking very much like pink snowflakes.

Next time you hike the section of the Appalachian Trail south of Carver's Gap, take the spur trail up to the Roan High Knob Shelter. It is the highest shelter on the entire AT. The rocks under your feet may possibly be among the oldest on the AT. And, on the steep, more eroded segments of the spur trail, try turning over a few of the very dark rocks. The season of the year won't matter, the pink snowflakes of Roan Mountain haven't melted in eons.

Bob Whittemore
Geologist (TN 3006)
General Shale Brick
Johnson City

A more or less complete list of references is available from the author.



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F R I E N D S O F R O A N M O U N T A I N