

# Patonia Her, Science Communication

#### Words with a Ranger

Somewhere in a dark corner of a family cedar chest is a discolored picture of a young boy in a Chicago Bulls shirt enjoying a small park in the northeast corner of Alabama. That park was Russell Cave National Monument—a place where a younger, skinnier me fell in love with a national park that represented 10,000 years of prehistoric Native American history. I have not seen that picture in some 20 years, but the essence of that photo lies deep inside my soul.

I was 19 years old when I revisited
Words with a Ranger continues on page 5

# Virtual Wildflower Pilgrimage Invites You to Stop and Share the Flowers

The Smokies is a world-renowned preserve of wildflower diversity

Spring ephemeral wildflowers, with their fleeting beauty, usually draw thousands of visitors from all over the world to Great Smoky Mountains National Park. This year, the 71st annual Spring Wildflower Pilgrimage (SWFP) celebrating these spring ephemerals will be held virtually for the second year in a row. While in-person events may be postponed due to COVID-19, organizers of this year's event are encouraging anyone to join in the fun by sharing pictures of wildflowers and more.

"I think one of the benefits of the virtual SWFP is that people are encouraged to observe and learn about biodiversity, no matter where it exists," said Entomologist Becky Nichols. "Last year's SWFP was a huge success, with over 300

people participating and nearly 12,000 observations from Florida to Alaska, Canada, and even the United Kingdom."

Wildflowers are the main focus of the event, but participants can upload pictures, videos, and audio recordings of all sorts of organisms they spot during this event—including but not limited to trees, ferns, insects, birds, mammals, reptiles, and amphibians. Park officials, biologists, and fellow pilgrims will be able to assist in identifying each organism.

The 2021 SWFP will run from May 8 to May 16. To join the virtual pilgrimage, all participants must download the iNaturalist app and create a free account. Get help downloading the app, register, and learn more at wildflowerpilgrimage.org.

#### Be #SmokiesSafe

- Delay your trip if you are sick
- Avoid crowded areas
- Maintain social distancing six feet away from others
- Wear a mask indoors and when unable to physically distance
  - Wash your hands
- Send only one or two members of your party into visitor centers

Visit
nps.gov/grsm/
planyourvisit
to plan your trip

OUR PARK ON SOCIAL MEDIA







**GreatSmokyNPS** 

#### COVID-19

The National Park Service is working with federal, state, and local health authorities to closely monitor the COVID-19 pandemic and is using a phased system to increase visitor access.

Check nps.gov/grsm/planyourvisit/ conditions.htm for the latest updates on open facilities and access. All openings are based on available staffing. Temporary closures may occur on short notice.

#### **Camping in the national park**

The National Park Service maintains developed campgrounds at nine locations in the park. Only Cades Cove and Smokemont are open in winter. There are no showers or hookups other than circuits for special medical uses at Cades Cove, Elkmont, and Smokemont.

Campsite reservations are *required* at Abrams Creek, Balsam Mountain, Big Creek, Cataloochee, Cosby, and Deep Creek campgrounds. Making a reservation prior to your arrival is recommended to guarantee a campsite at



# MOVING ROCKS HARMS AQUATIC LIFE.

Cades Cove, Elkmont, and Smokemont. Sites may be reserved up to six months in advance. Make your reservation at recreation.gov or call 877.444.6777.

Site occupancy is limited to six people and two vehicles (a trailer = one vehicle). The maximum stay is 14 days.

Special campsites for larger groups are available seasonally at Big Creek, Cades Cove, Cataloochee, Cosby, Deep Creek, Elkmont, and Smokemont. Group sites must be reserved and may be secured up to a year in advance.

The list below shows number of sites, elevations, opening dates, nightly fees, and maximum RV lengths. Visit nps. gov/grsm for more information.

- Abrams Creek 16 sites, elev. 1,125', opens April 23, \$17.50, 12' trailers
- Balsam Mountain 42 sites, elev. 5,310', opens May 14, \$17.50, 30' RVs
- Big Creek 12 sites, elev. 1,700', opens April 2, \$17.50, tents only
- Cades Cove 159 sites, elev. 1,807', open year-round, \$21–\$25, 35'–40' RVs
- Cataloochee 27 sites, elev. 2,610', opens April 2, \$25, 31' RVs
- **Cosby** 157 sites, elev. 2,459', opens April 2, \$17.50, 25' RVs
- Deep Creek 92 sites, elev. 1,800', opens April 2, \$25, 26' RVs
- Elkmont 220 sites, elev. 2,150', opens April 2, \$21–\$27, 32'–35' RVs
- Smokemont 142 sites, elev. 2,198', open year-round, \$21–\$25, 35'–40' RVs
- Look Rock closed in 2021

#### **Accommodations**

- LeConte Lodge (accessible by trail only) provides the only lodging in the park. 865.429.5704 or lecontelodge.com
- Bryson City 800.867.9246 or greatsmokies.com
- Cherokee 828.788.0034 or

cherokeesmokies.com

- Fontana 800.849.2258 or fontanavillage.com
- Gatlinburg 800.588.1817 or gatlinburg.com
- Maggie Valley 800.624.4431 or maggievalley.org
- Pigeon Forge 800.251.9100 or mypigeonforge.com
- Sevierville 888.766.5948 or visitsevierville.com
- Townsend 800.525.6834 or smokymountains.org

#### **Visitor centers**

Hours are subject to change.

Seasonal hours of operation are 9–5, Dec.–June, at Oconaluftee, Sugarlands, and Cades Cove visitor centers. Clingmans Dome hours of operation are 10–6, April–June.

#### For rent

The Appalachian Clubhouse and Spence Cabin at Elkmont can be rented for daytime events. Check recreation.gov for availability and booking. Seasonal opening dates are subject to change.

#### **Firewood**

To prevent the spread of destructive insect pests, the NPS has banned outside firewood from entering the park unless it is USDA- or state-certified heat-treated wood. Campers may gather dead and down wood for campfires. Certified wood may be purchased in and around the park.

#### Bicycling

Most park roads are too narrow and heavily traveled by automobiles for safe or enjoyable bicycling. Bicycles are permitted on park roads but prohibited on trails except Gatlinburg,

Oconaluftee River, and lower Deep Creek/Indian Creek. Helmets are required by law for persons age 16 and under and strongly recommended for all bicyclists.

On Wednesdays from May 5 to September 1, 2021, only bicycles and pedestrians are allowed on Cades Cove Loop Road. Bicycles may be rented at the Cades Cove campground store.

#### Pets in the park

Pets are allowed in front-country campgrounds and beside roads as long as they are restrained at all times. Pets are not allowed on park trails, except for the Gatlinburg and Oconaluftee River trails. Dogs on these trails must be leashed.

#### **Special events**

May 8–16, 2021 Spring Wildflower Pilgrimage: parkwide/virtual

#### Picnic areas

Picnic areas are open year-round at Cades Cove, Deep Creek, Greenbrier, and Metcalf Bottoms. The Chimneys picnic area opens March 12; Big Creek, Collins Creek, Cosby, and Twin Creeks open April 2; Look Rock opens April 30; Heintooga opens May 14. Picnic areas have a table and raised grill (charcoal fires only). See map on page 12 for locations. Picnic pavilions may be reserved for \$12.50–\$60 at recreation.gov.

#### **Other services**

There are no gas stations, showers, or restaurants in the national park.

#### Park weather

• **Spring** - March has the most changeable weather. Snow can fall on any day, especially at the higher

#### **SMOKIES GUIDE**

Smokies Guide is produced four times per year by Great Smoky Mountains Association and Great Smoky Mountains National Park.

nps.gov/grsm SmokiesInformation.org **Publication dates:** Spring: mid-March Summer: early June Autumn: mid-Sept. Winter: mid-Dec. Senior Editor Frances Figart Managing Editor

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elevations. Backpackers are often caught off guard when a sunny day in the 70s°F is followed by a wet, bitterly cold one. By mid- to late April, the weather is milder.

• **Summer** - By mid-June, heat, haze and humidity are the norm. Most precipita-

tion occurs as afternoon thundershowers.

• Autumn - In mid-September, a pattern of warm, sunny days and crisp, clear nights often begins. However, cool, rainy days also occur. Snow may fall at the higher elevations in November.

• Winter - Days during this fickle

season can be sunny and 65°F or snowy with highs in the 20s. At the low elevations, snows of 1" or more occur 3-5 times per year. At Newfound Gap, 69" fall on average. Lows of -20°F are possible at the higher elevations.

#### **Fishing**

Fishing is permitted year-round in the park, and a Tennessee or North Carolina fishing license is required. Either state license is valid throughout the park, and no trout stamp is required. Fishing with bait is

These temperature and precipitation averages are based on data for the last 20 years. **Temperatures** are in degrees Fahrenheit. An average of over 84" (7 feet) of precipitation falls on the higher elevations of the Smokies. On Mt. Le Conte, an average of 82.8" of snow falls per year. prohibited in the park. A special permit is required for the Qualla Boundary and Gatlinburg. Licenses are available in nearby towns. A free fishing map with a complete list of all park fishing regulations is available at visitor centers.

#### Camping in the backcountry

Springtime camping can be an exciting adventure for persons properly equipped and informed. To facilitate this activity, the National Park Service maintains more than 800 miles of trails and more than 100 backcountry campsites and shelters throughout the park. One of the greatest challenges for backcountry campers is deciding where to go. Here are some tools to help.

- 1. Get the map. Go online to view the park's official trail map (nps.gov/grsm/planyourvisit/maps.htm), which shows all park trails, campsites, and shelters. Park rules and regulations are also listed here. If you wish, you can purchase the printed version of the trail map for \$1 by stopping at any park visitor center or calling 865.436.7318, ext. 226, or shopping online at SmokiesInformation.org.
- **2. Plan your trip.** Call or stop by the park's backcountry office, which is open daily from 8 a.m. to 5 p.m., for trip planning help. The office is located in Sugarlands Visitor Center, two miles south of Gatlinburg on U.S. 441. 865.436.1297.
- **3. Get a permit.** Make your reservation and obtain your permit through the backcountry office at Sugarlands Visitor Center (by phone or in person) or online at smokiespermits.nps.gov.

Reservations and permits are required for all overnight stays in the backcountry. The cost is \$4 per person per night. Reservations may be made up to 30 days in advance.

Spring hikers should be especially aware of quickly changing conditions and the danger of hypothermia—the lowering of body temperature. Always carry an ample supply of food, water, and reliable rain gear. Layer clothing that provides warmth when wet (not

cotton). Be prepared for sudden weather changes, especially at the higher elevations, including rain, cold, and wind. Stay dry and know your limitations.

See page 9 for more trip essentials.

#### **Road closures**

Many secondary and higher elevation roads are closed in winter and open later into spring. Please refer to the map on pages 6 and 7 for opening dates for Clingmans Dome and other seasonally closed roads.

# **Driving distances and estimated times**

#### Cherokee, NC to:

Gatlinburg: 34 miles (1 hour) Cades Cove: 58 miles (2 hours)

Newfound Gap: 18 miles

(1/2 hour)

Clingmans Dome: 25 miles

(¾ hour)

Cataloochee: 39 miles

(11/2 hours)

Deep Creek: 14 miles (½ hour)

#### Gatlinburg, TN to:

Cherokee: 34 miles (1 hour) Cades Cove: 27 miles (1 hour) Newfound Gap: 16 miles

(½ hour)

Clingmans Dome: 23 miles

(¾ hour)

Cataloochee: 65 miles

(2½ hours)

Greenbrier Cove: 6 miles

(1/4 hour)

Deep Creek: 48 miles

(1½ hours)

#### Townsend, TN to:

Cades Cove: 9 miles (¼ hour) Newfound Gap: 34 miles

(11/4 hours)

Gatlinburg: 22 miles (¾ hour) Cherokee: 52 miles (1½ hours)

Look Rock: 18 miles (½ hour) Cataloochee: 87 miles (3 hours)



#### Mt. Le Conte elev. 6,593' Gatlinburg, TN elev. 1,462' Avg. High Low PRECIP. Avg. High Low PRECIP. 49° 27° 4.0" 18° 6.7" 36° Jan. Feb. 53° 28° 4.1" 37° 19° 5.6" March 62° 44° 7.0" 35° 5.5" 25° 71° 4.5" 52° 6.7" April 42° 31° 77° 50° 5.7" 58° 39° 8.0" May 5.8" 64° 8.7" 82° 58° 47° **June** 6.3" July 85° 62° 67° 50° 9.0" 7.6" 84° 61° 5.3" 67° 49° Aug. 7.2" 79° 4.7" 62° Sept. 55° 44° 2.9" 35° 4.7" 70° 43° 55° Oct. 6.8" 60° 34° 3.4" 46° 27° Nov. 51° 4.6" 38° 6.4" 28° 20° Dec.

# **Become a Citizen Scientist**

Help Track Rare Smokies Wildflowers with the iNaturalist App

As winter thaws in Great Smoky Mountains National Park, one of the first signs of new life is the eruption of fresh blooms along the Smokies' wildflower-laden trails.

While wildflowers may seem abundant in the park this spring, some are excep-

While wildflowers may seem abundant in the park this spring, some are exceptionally rare. The richness of the park's wildflowers relies on several factors, including rainfall, early season temperatures, and pollinator health and activity.

You can help park scientists map these special wildflowers by embarking on a scavenger hunt to find, photograph, and report them using a citizen-science app called iNaturalist.

"I'm always blown away by the inordinate diversity of wildflowers in the Smokies," said Will Kuhn, director of science and research at park partner Discover Life in America (DLiA). "There are so many shapes, sizes, and colors."

DLiA exists to assist park staff in analyzing the biodiversity of the Smokies. Using the iNaturalist app, DLiA organized the Species SnapIt & MapIt project to allow park visitors to report sightings of the flora and fauna they see. Park staff can then use that information to identify at-risk species for conservation.

Kuhn shared three rare or under-reported species to look for in the Smokies:

**Dwarf violet iris** (*Iris verna*) – This wildflower blooms in April at low elevations in semi-shaded woodlands, like along Rich Mountain Road or the Foothills Parkway

through Walland. While its purple and yellow flowers look like the more common dwarf crested iris (*Iris cristata*), its strong fragrance is a distinguishing feature.

**Poke milkweed** (Asclepias exaltata) – This wildflower serves as food for monarch butterfly caterpillars. It blooms June through July, reaching up to three feet tall with large clusters of yellow-white flowers. It prefers moist forests and forest edges at low to mid elevations, like the forests near meadows at Purchase Knob or Cades Cove.

**Woodland pinkroot/indian pink** (*Spigelia marilandica*) – This wildflower blooms from April through June showcasing striking red, tubular flowers with five-pointed petals. It prefers moist woodlands at low elevations, like along Rich Mountain Road.

Park visitors' actions also impact the health of Smokies wildflowers.

"Many wildflowers are hidden when they're not in bloom, but that doesn't mean they can't be trampled," Kuhn explained. "Stay on trails so you don't accidentally crush wildflowers and other organisms, seen or unseen. Also, look, but don't touch. Flowers are beautiful but are also an important part of the plant's lifecycle. Picking them interrupts that lifecycle."

Learn more about helping the park monitor these and other rare species at dlia.org/snapit-mapit. *Images below by University of Tennessee Herbarium* 



Words with a Ranger continued from page 1 Russell Cave—this time on my first day as a national park ranger. I remember feeling overwhelmed with several questions during my first summer there, but my main question was, "Where will this career take me?" It was not long before the National Park Service took me to the place where the Civil War started, the ranch of a president that signed civil rights legislation, the depths of an archaeological site where Columbian mammoths died, and most recently the most-visited park in the park service, Great Smoky Mountains National Park.

Six months ago, I became the new science communicator for Great Smoky Mountains National Park. But what is a science communicator? My job is to help internal and external audiences understand the natural and cultural science of the park. Whether the subject is salamanders or Native American history, I act as the link from the science to the public.

Although working amid the COVID-19 pandemic has not been ideal for anyone, I've had the chance to collaborate and lead many special projects with the park service. One project that will make an impact on the park is the African American Experience project, which focuses on uncovering the untold history of African Americans in and outside of the park boundaries through research, events, and storytelling. I'm also leading an effort to revitalize the park's research learning center website, which will use an array of scientific stories and programming to connect virtual visitors to the park.

Seven years ago, I hiked to the peak of Mount Le Conte. As I peered down from the summit, I thought about what it would be like to work for such a breathtaking park. I never thought that dream would come true, but in August of 2020, it did. There is not a day that goes by that I do not enjoy the mist of the mountains, the sound of the creeks and rivers, and the flora and fauna that dominate the terrain of the Great Smoky Mountains.

PARK NEWS Great Smoky Mountains National Park news briefs

#### **Storybook Trail of the Smokies Comes to Cosby**

Cosby Nature Trail will be home to a new Storybook Trail of the Smokies series designed to encourage literacy, promote exercise, and inspire stewardship of Great Smoky Mountains National Park.

Young readers, parents, and hikers of all ages are invited to come along for short but exciting one-mile walks where books come to life with educational content and activities tailored for the trail. The project will feature a new book every two weeks this spring from April 3 to May 30, and the first 20 families to arrive on opening Saturdays will receive a complimentary copy of the featured book.

The project is made possible by the National Park Service in coordination with Great Smoky Mountains Association, Cocke County Cooperative Extension Service, Unify Cocke County, and the Cocke County School System.

Follow along by finding Storybook Trail of the Smokies on Facebook.

#### **Smokies Survey Suggests Fewer Insects, Birds on the Move**

In 2019 and 2020, PhD candidate Graham Montgomery spent months hiking throughout Great Smoky Mountains National Park carefully recording insect and bird species. His efforts were part of a study using the same historical methods as a previous count conducted in the 1940s to track changes in the park's insect and bird communities.

Montgomery and his advisors are still working to process thousands of collected insect species. But so far, he says it's clear insect numbers in the park are generally in decline.

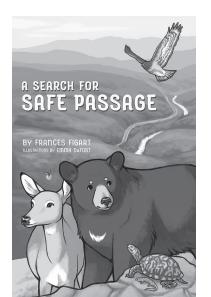
"On the bird side of things, we're seeing range shifts in several species," said Montgomery. "Yellow-rumped Warblers seem to be more common. And birds like the Carolina Chickadee seem to be moving upslope in elevation, which is expected as climate warms."

Illustration from children's book Sala-

mander Ball by author Lisa Horstman.

Climate change, invasive species, and habitat change are the major drivers of population and diversity shifts, even in international biosphere reserves like the Smokies. Studies like Montgomery's will help scientists better understand what species and ecosystems are most affected by these threats and how best to protect them.

At home, Montgomery says people can help insects and birds by not using pesticides and planting native species. Park visitors can help by documenting the species they see through iNaturalist, a citizen-science app (see page 4).



#### Safe Passage Helps Make I-40 Safer for Wildlife and People

More than 12 million people come to Great **Smoky Mountains** National Park each year to see black bear, elk, and other wildlife. But the Smokies' iconic species don't just stay within the park boundary. Just like us, they travel in search of food, shelter, and mates which often means crossing dangerous regional highways as well as secondary roads.

A Search for Safe Passage, a book for young readers inspired by the Safe Passage project, is available in visitor center bookstores and at SmokiesInformation.org.

Near the park boundary, a 28-mile stretch of Interstate 40 in the Pigeon River Gorge is becoming a barrier to wildlife movement. As many as 70 bears are killed each year in this section of highway between Asheville and Knoxville.

Now nearly 20 federal, state, tribal, and non-governmental organizations are collaborating to make this section of I-40 more permeable for wildlife and safer for people. Their effort is called Safe Passage: The I-40 Pigeon River Gorge Wildlife Crossing Project.

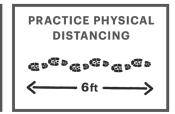
The Safe Passage group has formed a fund coalition so that public donations can join department of transportation monies for mitigations to the road in tandem with planned bridge repairs. These could include improving existing structures that wildlife already use to cross, constructing underpasses, or building vegetated wildlife overpasses, which, when paired with fencing, have been shown to successfully reduce collisions.

Learn more and support the Safe Passage effort at smokiessafepassage.org.

## #RecreateResponsibly

This spring it remains important to recreate responsibly in Great Smoky Mountains
National Park. Before you head out, familiarize yourself with these simple reminders from the #RecreateResponsibly campaign to stay safe and help create an inclusive outdoors for everyone in the Smokies.







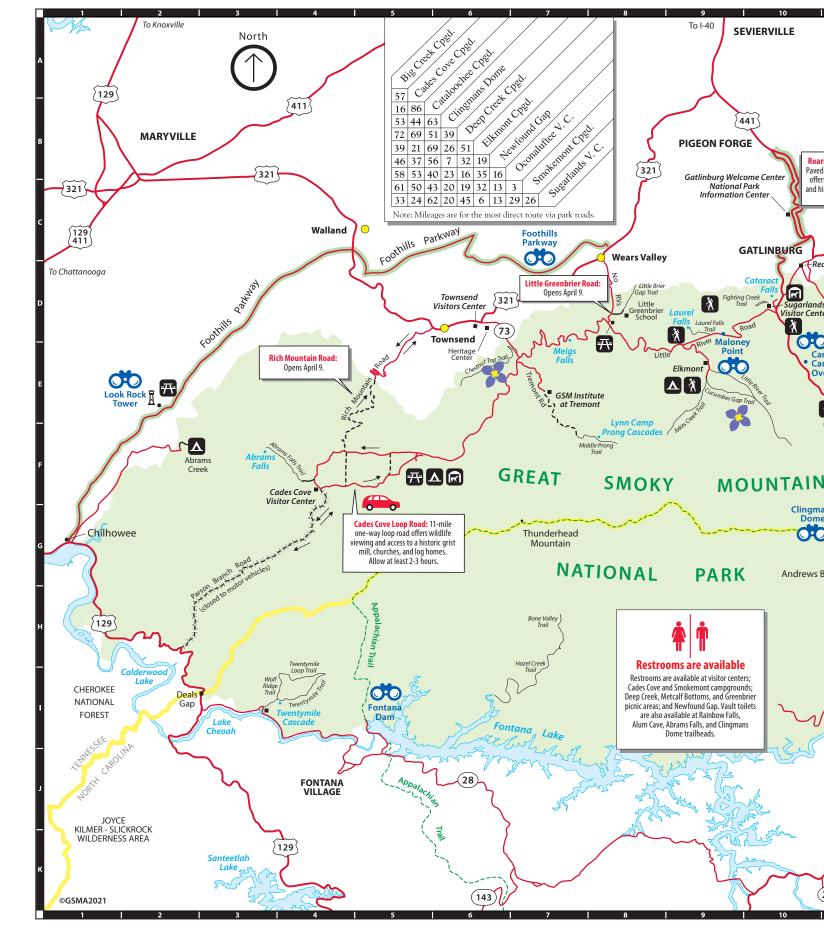


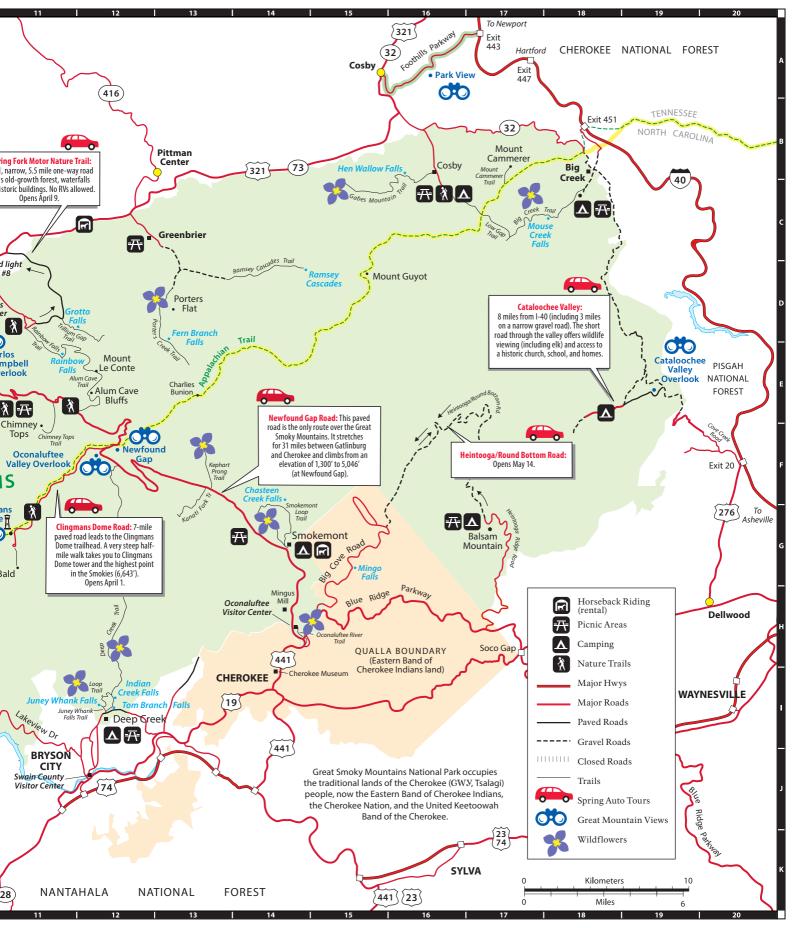






Graphic courtesy of recreateresponsibly.org





# Thank You for Staying on the Trail in Your National Park



There are more than 800 miles of maintained hiking trails to explore in Great Smoky Mountains National Park.

Several of these trails follow ancient footpaths first created by the Cherokee—the earliest known human inhabitants of the Smokies. Other trails follow roadways first created by area farmers and work crews long before the national park was established.

While it may be tempting to venture off an established trail to take a shortcut or to get the perfect picture, the emerging spring wildflowers and many unseen burrowing insects and creatures just beneath the leaf litter will thank you for staying on walking paths and only stepping off when you absolutely must, like when yielding to other hikers.

By staying on trails and taking nothing but pictures, you help control erosion into sensitive Smokies waterways and protect important habitats for everything from rare wildflowers to native salamanders and firefly larvae.



By staying on trails and taking nothing but pictures, you help control erosion into sensitive Smokies waterways and protect important habitats for everything from rare wildflowers to native salamanders and firefly larvae.



# Setting Out for the Mountains...Safely

It is your responsibility to be safe and to know and obey park rules. You can find information and rules at visitor centers, trailhead bulletin boards, and the park website at nps.gov/grsm.

#### **BASIC PACK LIST**

- Water, a water filter, tablets, or the ability to boil water
- Food, including plenty of snacks
- Extra layers (base layer, jacket, socks) for changing conditions
- Sun protection with sunscreen, sunglasses, and/or a hat
- Rain gear and pack cover to keep what you are carrying dry (zippered plastic bags inside your pack can do this too)
- Traction support, like hiking poles or microspikes
- Navigation—map and compass and the knowledge of how to use them
- Shelter in the form of a tent or tarp
- Flashlight or headlamp and batteries
- Fire starter with a lighter, strike stick, and something to light
- Knife or multi-tool
- Emergency whistle
- First aid kit with all the essentials to care for common accidents
- Permit for camping overnight

#### TRAIL HAZARDS:

- Poison ivy and brambles
- Slippery logs, rocks, and leaves
- Ice on wooden structures, rocks, and shady sections of trail
- Water crossings (water can rise quickly and rocks and logs are often slippery; closely supervise children around water)
- Lightning
- High winds
- Hypothermia
- Rapid changes in weather
- Dead or downed trees
- Wildlife including black bears and elk

#### **IN AN EMERGENCY:**

- Never hike alone or split up from your party. Remain on established trails.
- If you can acquire a signal, call emergency dispatch (865.436.9171) or dial 911.
- Remain with any injured party until help arrives. Remain calm and focus on actions that will help speed the rescue and ensure the comfort and survival of the victim.
- Use what basic first-aid techniques you know, but do not attempt invasive intervention unless you are medically trained.
- Issue a series of three spaced blasts on an emergency whistle every few minutes to alert the rescue crew of your location.
- If you are in an open area visible from the air, display brightly colored clothing or gear.

**Plan ahead:** Inform the NPS backcountry office of your itinerary before you hit the trail so response crews will know where to begin looking in case of an emergency. Let the NPS help you plan a hike and prepare for what you may experience along the way at 865.436.1297, 8 a.m. – 5 p.m.

### IF YOU LOVE THE SMOKIES

Join the park's partners in helping to protect this place for ourselves and future generations

Great Smoky Mountains National Park depends on four primary nonprofit partners as well as 2,800 park volunteers to help its staff meet the needs of 12.5 million visitors and manage 522,000 acres of resources.

# Great Smoky Mountains Association

Since 1953, the nonprofit Great Smoky Mountains Association has supported the educational, scientific, and historical preservation efforts of the park by operating the park's official bookstores, publishing books and other media about the park's natural and cultural resources, and supporting park programs. Over the years, GSMA has contributed more than \$46 million to assist with living history demonstrations, save hemlock trees, fund natural resource education

internships, construct visitor centers and the Collections
Preservation Center, and much more.

Association members receive a number of benefits to keep them informed about special events in the park and issues affecting the Smokies:

- Subscription to the biannual full-color magazine *Smokies Life*
- Digital access to this award-winning park newspaper and Smokies LIVE e-newsletter
- 15–20% discount on books, music, gifts, and products at park visitor centers and at GSMA's web store
- 10% (or more) discount at 500+ additional nonprofit public lands partner stores
- Access to member-exclusive group hikes, backpacking excursions, and educational sessions
- Invitation to GSMA's Members Weekend

Join today by visiting SmokiesInformation. org or call us at 888.898.9102, ext. 257.

#### Friends of the Smokies

Friends of the Smokies assists the National Park Service in its mission to preserve and protect Great Smoky Mountains National Park by raising funds and public awareness and providing volunteers for needed projects.

Since it was founded in 1993, supporters of Friends have contributed more than \$70 million to meet park needs.

Examples of programs and projects

- include:
   Rehabilitation of the most impacted trails through Trails Forever
  - Forest conservation and wildlife management

FRIENDS of

- Real-time webcams and air quality monitoring
- Facility improvements and visitor amenities
- Historic structures rehabilitation
- Cultural experiences and special events
- Search and rescue program support and equipment
- K–12 educational programs

Programs like Parks as Classrooms, which serves approximately 20,000 students every year, provide educational experiences that help foster a love for nature and inform the next generation of park supporters. A new digital learning space at Smokieees.org invites students to explore nature-related activities, be entertained through music, art, and stories, and escape through observation of the natural world.

Friends' commitment to preservation includes support for restoring and maintaining historic log homes, barns, outbuildings, churches, schools, and gristmills. Become a Friend by visiting FriendsOfTheSmokies.org. For information about memberships and planned giving, email info@friendsofthesmokies.org or call 800.845.5665.

## Discover Life in America

The Smokies have long been renowned for



their rich variety of life. Knowing what creatures reside here helps the National Park Service better protect the Smokies against threats like air pollution, wildfire, habitat fragmentation, invasive species, and climate change.

Discover Life in America is a nonprofit partner that was launched in 1998 to manage the All Taxa Biodiversity Inventory (ATBI), an effort to identify and learn about every variety of plant and animal in the park. The organization works with leading biologists from around the globe to conduct this massive inventory.

Volunteers and interns become 'citizen scientists' who help with DLiA's work. These participants get an insider's look at the park, as well as firsthand knowledge of biology, field science, and laboratory practices. Funding comes from donations by individuals and institutions.

To date, DLiA has helped add more than 10,000 species to the inventory of life in the park, including more than 1,000 species completely new to science! Today there are more than 21,000 different kinds of organisms known to the park with new discoveries happening

every day. You can support DLiA by purchasing the Smokies Species-a-Day perpetual calendar. Learn more at DLiA. org or by calling 865.430.4757.

#### Tremont

Born out of a need for residential education programs in the park, Great Smoky Mountains



Institute at Tremont has offered student and adult programs that promote a connection to nature for more than 50 years. Up to 6,000 students and adults annually attend workshops, camps, and school programs at the institute that are designed to promote curiosity and inspire learning.

Adult workshops include hiking, backpacking, community science, professional and teacher development, photography, and the Southern Appalachian Naturalist Certification program. Summer camps provide youth and their families opportunities to spend six to 11 days exploring the national park and its wonders. Fees include meals, lodging, and most equipment.

Call 865.448.6709 or visit GSMIT. org for program dates and information and to learn how you can support life-changing learning experiences in the Smokies!

SIGN ME UP!

Name(s)

<b>GSMA</b>	<b>MEMB</b>	<b>ERSH</b>	<b>IPS</b>
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Get Rooted in the Smokies!

GSMA memberships are available in both individual- and family-level packages.

- ☐ Acorn (youth) \$15
- ☐ Buckeye \$35/ \$50 family
- ☐ Chestnut \$100/ \$125 family
- ☐ Dogwood \$200/ \$300 family☐ Hemlock (lifetime) \$1,000/ \$1500 family
- ☐ Lookout League Business Memberships \$250–\$1,000

Address
Email (for e-newsletter)

Please include your check with this form. Mail to: GSMA, P.O. Box 130,
Gatlinburg, TN 37738



These hefty salamanders grow up to 16 inches long. Because they spend all of their time in Smokies streams, they have bushy external gills that allow them to breathe underwater. During the day they hide in submerged burrows; at night they come out to feed on fish, crayfish, snails, frogs, and other salamanders.



These weird animals look like snakes but are actually lizards with no legs. They have extremely long tails that break off very easily (hence the name "glass lizard"). It's rare to see them because they spend most of their time in rodent burrows. When they come out, they hunt spiders, snails, bird eggs, snakes, and more.



If you happen upon two small shiny beetles rolling a ball of dung, be assured it's really nothing out of the ordinary. Dung beetles routinely gather dung from deer and other animals into a ball, roll it around to get it nice and packed down, then bury it and lay eggs in it. This way the young have plenty to eat when they hatch.



Slugs are simply snails without shells. They secrete a generous amount of slime, which helps them ooze along the forest floor. Their favorite foods are leaves, roots, flowers, fruits, and fungi. Look for mushrooms with slime trails and bites eaten from them. Some birds eat slugs, but most think they're just too slimy.

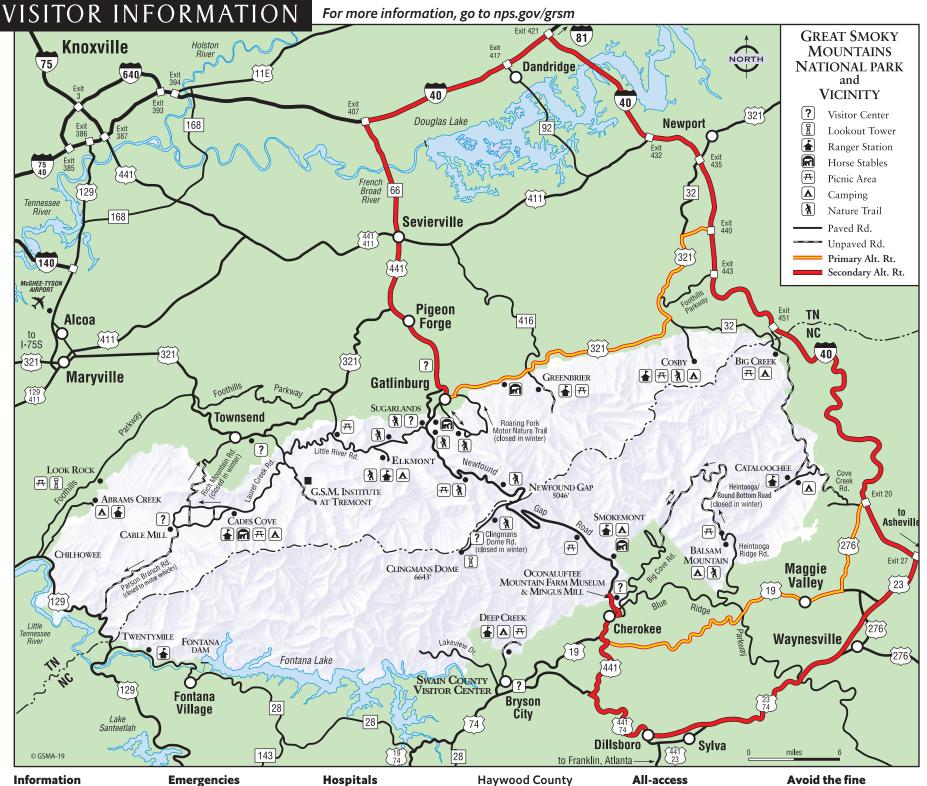




They're out there—slimy, wiggly, spooky creatures that seem like your worst nightmare. But these seemingly unfriendly organisms all play a role in the great diversity of the Smokies. Learn about a few here...after you recover from the heebie-jeebies.

Illustrations by Lisa Horstman





General park info: 865.436.1200 • nps.gov/grsm **Backcountry information:** 865.436.1297 smokiespermits.nps.gov To order maps and guides: 865.436.7318, ext. 226 SmokiesInformation.org

For emergencies after hours:

Park Headquarters 865.436.9171

**Cherokee Police** 828.497.4131

**Gatlinburg Police** 865.436.5181

Le Conte/Sevier County 865.446.7000 Middle Creek Rd., Sevierville, TN

**Blount Memorial** 865.983.7211 U.S. 321, Maryville, TN

#### 828.456.7311 Waynesville, NC

**Swain County** 828.488.2155 Bryson City, NC Restrooms at park visitor centers in Cades Cove, Oconaluftee, and Sugarlands are fully accessible. Sugarlands Valley all-access nature trail is on Newfound Gap Road just south of Sugarlands Visitor Center.

Picking or digging plants is prohibited in the park. Persons feeding wildlife are subject to a \$5,000 fine. Pets are only permitted on the Gatlinburg and Oconaluftee River trails, which allow dogs on a leash.