



SMOKIES GUIDE

The official newspaper of Great Smoky Mountains National Park • Fall 2019

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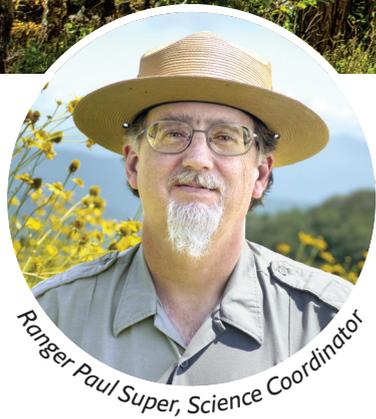
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Ranger Paul Super, Science Coordinator

Although the appearance of the Chimney Tops has changed since the 2016 fire, it's a view to behold being one of the few instances of a bare rock summit in the Smokies. Image by Kristina Plaas

Smokies Recovering Three Years After the Fire

Researchers are studying effects on everything from tall tree species to tiny fungi

In late November 2016, Great Smoky Mountains National Park experienced the largest wildfire in the park's history. Exceptional drought and extreme winds contributed to the spread of a human-caused fire, and about one percent of parkland was burned.

Nearly three years later, fortunately much of the burn zone—about 70 percent—is not apparent to the casual observer because the larger trees and shrubs of mixed hardwood forests mostly survived the low-intensity flames in those areas. In the other 30 percent of the burn zone, many (if not all) of the trees and shrubs were killed. These moderate- and high-severity areas, which generally were oak or pine forests before, may take decades to recover and may never return to their original forest type.

Nevertheless, nature marches on in these severely burned areas as well. Thousands of waist-high Table Mountain pine seedlings—a fire-dependent species whose cones release their seeds only after exposure to high temperatures—have risen from the charred landscape. Some oak, maple and mountain laurel have re-sprouted from remaining root structures and are already six to eight feet tall. Certain birds like Prairie Warblers, Red-headed Woodpeckers and Indigo Buntings thrive in these young forests and are not typically seen in other parts of the park. At the same time, park vegetation crews are actively battling an influx of non-native, invasive plant species that spread easily to disturbed areas like the burn zone. These exotic plants will be a challenge to park managers for years to come.

Continued on page 6

THRIVING IN YOUNG, POST-FIRE FORESTS:

Bats

Black bears

Bobcats and coyotes

Foxes

Mice and voles

Owls

Rabbits

Snakes and Lizards

Turkeys

White-tailed deer

Indigo Buntings

Downy Woodpecker

Hairy Woodpeckers

Prairie Warblers

Red-headed Woodpeckers

Red-tailed Hawks

Yellow-breasted Chat

Words with a Ranger

I've loved scientific investigation since I was knee-high to a grasshopper. But I had a very hard time narrowing down what field to study. So my job as the science coordinator for Great Smoky Mountains National Park is perfect; it allows me to work with researchers who study everything from beetles to bears to moss to air quality to weather to... you name it. I also get to share what I learn with park staff, partners, volunteers, park visitors and neighbors.

Words with a Ranger continued on page 5

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.

Campsites at Abrams Creek, Balsam Mountain, Big Creek, Cades Cove, Cataloochee, Elkmont and Smokemont may be reserved. Sites may be reserved up to 6 months in advance. Reservations are *required* at Abrams Creek, Balsam Mountain, Big Creek and Cataloochee campgrounds.

Site occupancy is limited to six people and two vehicles (a trailer = 1 vehicle). The maximum stay is 14 days.

Special camping sites for large 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 the number of campground sites, elevations, camping fees and maximum RV lengths. For current dates of operation, visit nps.gov/grsm. Call 877.444.6777 or contact recreation.gov to make reservations.

- **Abrams Creek** 16 sites, elev. 1,125', closes Oct. 21, \$17.50, 12' trailers
- **Balsam Mountain** 42 sites, elev. 5,310', closes Oct. 7, \$17.50, 30' RVs
- **Big Creek** 12 sites, elev. 1,700', closes Oct. 28, \$17.50, tents only
- **Cades Cove** 159 sites, elev. 1,807', closes Dec. 30, \$21-\$25, 35'-40' RVs
- **Cataloochee** 27 sites, elev. 2,610', closes Oct. 28, \$25, 31' RVs
- **Cosby** 157 sites, elev. 2,459', closes Oct. 28, \$17.50, 25' RVs
- **Deep Creek** 92 sites, elev. 1,800', closes Oct. 28, \$21, 26' RVs
- **Elkmont** 220 sites, elev. 2,150', open year-round, \$21-\$27, 32'-35' RVs
- **Smokemont** 142 sites, elev. 2,198', open year-round, \$21-\$25, 35'-40' RVs.

• **Look Rock** *closed in 2019*

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 in the park 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.

However, from May 8 to Sept. 25, on Wednesday and Saturday mornings from sunrise until 10 a.m., only bicycles and pedestrians are allowed on Cades Cove Loop Road. Bicycles may be rented at the Cades Cove Campground store. Cades Cove Loop Road is an 11-mile, one-way, paved road providing excellent opportunities for wildlife viewing and touring historic homesites.

Helmets are required by law for persons age 16 and under. However, helmets are strongly recommended for all bicyclists.

Bicycles are permitted on park roads but prohibited on trails except Gatlinburg, Oconaluftee River and lower Deep Creek/Indian Creek.

Accommodations

• **LeConte Lodge** (accessible by trail only) provides the only lodging in the park. 865.429.5704 or lecontelodge.com For information on lodging outside the park:

- **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

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

- September 21** Mountain Life Festival: Mountain Farm Museum
- September 28** Cades Cove Old-timers' Day: Cades Cove Visitor Center
- December 14** Festival of Christmas Past: Sugarlands Visitor Center
- December 21** Holiday Homecoming: Oconaluftee Visitor Center

For rent

The Appalachian Clubhouse and Spence Cabin at Elkmont can be rented for daytime events. Contact recreation.gov.

Visitor centers

Fall hours of operation are: Oconaluftee and Sugarlands: 8 a.m.–6 p.m. in Sept. and Oct.; 8–5 in Nov. Cades Cove: 9 a.m.–6:30 p.m. in Sept. and Oct.; 9–5:30 in Nov. Clingmans Dome 10 a.m.–6 p.m. in Sept. and Oct.; 9:30–5 in Nov.

Picnic areas

Picnic areas have a table and raised grill for cooking (charcoal fires only). Please see the map on page 16 for locations. Picnic pavilions may be reserved for \$12.50–\$80 at recreation.gov.

Other services

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



Campsites book up fast in the fall! Make sure you plan ahead at recreation.gov. Image by Bill Lea

SMOKIES GUIDE

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

Publication dates are roughly as follows:
Spring: mid-March
Summer: early June
Late Summer: mid-August

Autumn: mid-Sept.
Winter: mid-Dec.

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RULE OF THUMB FOR WILDLIFE VIEWING



When viewing wildlife, hold your arm out straight and if you can't cover the animal in your line of sight with your thumb, you're too close!

• **Summer** - By mid-June, heat, haze and humidity are the norm. Most precipitation 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 to 5 times per year. At Newfound Gap, 69" fall on average. Lows of -20°F are possible at the higher elevations.

Park weather

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

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

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.

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 prohibited in the park. A special permit is required for the Cherokee Reservation 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

Fall 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 x226 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.

Fall hikers should be especially aware of abrupt weather changes and the danger of hypothermia—the lowering of body temperature. The combination of rain, cold and wind (especially at the higher elevations) is extremely dangerous.

To prevent hypothermia, carry reliable rain gear at all times. Layer clothing that provides warmth when wet (not cotton). Be prepared for sudden and drastic weather changes. Stay dry.

Driving distances and estimated times

Cherokee, NC to:

Gatlinburg: 34 miles (1 hour)
Cades Cove: 58 miles (2 hours)
Newfound Gap: 18 miles (½ hour)
Clingmans Dome: 25 miles (¾ hour)
Cataloochee: 39 miles (1½ 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 (¼ hour)
Deep Creek: 48 miles (1½ hours)

Townsend, TN to:

Cades Cove: 9 miles (¼ hour)
Newfound Gap: 34 miles (1¼ hours)
Gatlinburg: 22 miles (¾ hour)
Cherokee: 52 miles (1½ hours)
Look Rock: 18 miles (½ hour)
Cataloochee: 87 miles (3 hours)

GREAT SIGHTS TO SEE

1. Lakeview Drive

Highlights: scenic drive, lake views, hiking trails

This scenic mountain road travels six miles into the park and ends at a tunnel where your hiking adventures can begin. Lakeview Drive features an overlook of Fontana Lake and access to hiking trails such as the Goldmine Loop, a moderate 3.1-mile loop hike that offers a great way to escape from the crowds and enjoy autumn in the Smokies. A short walk through the tunnel and along the beginning of Lakeshore Trail also makes a nice leg-stretcher. Bring a flashlight for the tunnel.

From Bryson City, NC, take Everett Street/Fontana Road 3 miles north toward the park boundary.

Mileage from Cherokee—19
from Gatlinburg—54
from Townsend—70

2. Foothills Parkway

Highlights: mountain views, scenic drive, newly opened parkway section, observation tower, fall color

See the Smokies in a new light as you drive 32 miles of continuous parkway offering stunning views of the park and the Tennessee Valley. The Walland to Wears Valley section of the parkway opened last year, connecting with the existing western segment that was opened in 1968. Enjoy fall color from this new vantage point.

Look Rock is located between the Walland and Chilhowee entrances to the parkway. A half-mile trail from the parking area to the top of the ridge provides access to Look Rock Tower, with a 360-degree panoramic view of the Smokies and neighboring foothills. Nearby Look Rock Picnic Area has recently reopened with limited services after the first phase of a rehabilitation project.

Though the vision to complete the entire length of Foothills Parkway has yet to be realized, an additional 6-mile eastern section between Cosby and I-40

provides stellar views of Mount Cammerer and Mount Guyot.

Mileage to the Wears Valley entrance to Foothills Parkway (newest section):

from
Townsend—8
from
Gatlinburg—16
from
Cherokee—46

3. Hazel Creek

Highlights: history, hiking, fishing

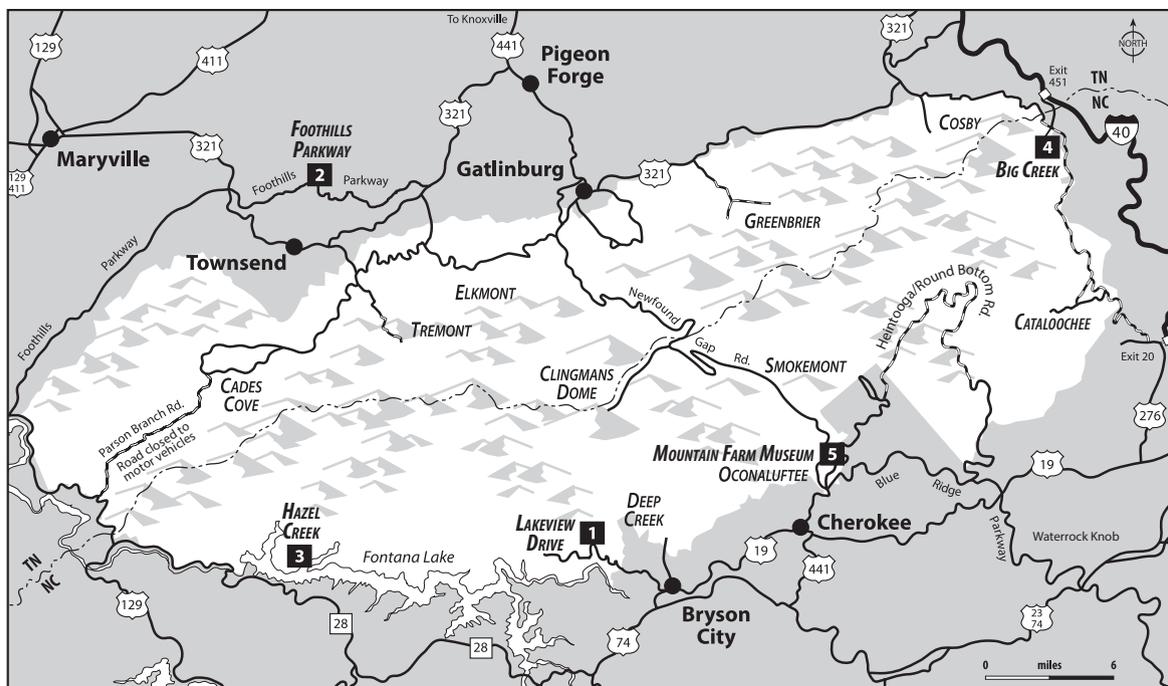
Hazel Creek is an area rich with history, from Native Peoples and mountain farmers to timber barons, wealthy sportsmen, miners, writers and 20th-century townspeople. In contrast to its storied history, you may find a remarkable degree of solitude. Partially cut off by the creation of Fontana Lake, the area is best accessed by boat. Fontana Marina offers boat rentals and daily shuttles.

A short distance from the shoreline, Backcountry Campsite #86 marks the site of the town of Proctor, or more specifically, the town's school ballfield. Only a remnant is left of the town, including the home of Granville Calhoun, whose bear hunt was immortalized in Horace Kephart's *Our Southern Highlanders*.

The Hall Cabin, built in 1892 and listed on the National Register of Historic Places, is located on Bone Valley Trail, a 7.1-mile trek from the Hazel Creek Trail intersection with Lakeshore Trail.

In addition to hiking and history, Hazel Creek offers prized waters for trout fishermen (license required).

Mileage from Cherokee—37
from Gatlinburg—73
from Townsend—54



4. Big Creek

Highlights: hiking, backpacking, fishing

Big Creek is in an off-the-beat-en-path corner of the park, although popular enough that you will need to arrive early to find parking in the limited space available.

The most well-traveled trail, Big Creek to Mouse Creek Falls, is a moderate, 4-mile-round-trip hike. Following Chestnut Branch Trail to the AT and Mount Cammerer Fire Tower makes for a beautiful and strenuous 12-mile-round-trip adventure. Following Baxter Creek Trail to Mount Sterling Fire Tower (12.2-mile round-trip) entails a 4,000-foot elevation gain and is one of the most challenging hikes in the Smokies.

Backpackers will find Campsite #37 and Davenport Gap Shelter (on the AT) desirable destinations. All backcountry campsites require a permit and reservation.

Big Creek offers good fishing for wild trout (license required). Big Creek Campground and Picnic Area are closed in winter.

Mileage from Gatlinburg—37
from Townsend—48
from Cherokee—60

5. Mountain Farm Museum

Highlights: historic buildings, exhibits, nature trail

The Mountain Farm Museum features a log cabin, drover's barn and various farm outbuildings, as well as old-time breeds of livestock (seasonally). An audio tour of the museum is available for a nominal fee.

The annual Mountain Life Festival displays traditional fall activities, including sorghum making, hearth cooking, blacksmithing, lye soap making and food preservation. The event is scheduled for Saturday, September 21, from 10 a.m. to 4 p.m.

The 2-mile Oconaluftee River Trail starts at the museum and follows the river to Cherokee, providing opportunities for viewing wildlife like elk and beaver. Colorful exhibits along the trail highlight Cherokee stories and lore.

Oconaluftee Visitor Center and Mountain Farm Museum are located on U.S. 441, 2 miles north of Cherokee, NC. Open 8 a.m. to 6 p.m. (September–October), 8 a.m. to 5 p.m. (November), and 8 a.m. to 4:30 p.m. (December).

Mileage from Gatlinburg—32
from Cherokee—2
from Townsend—50

Words with a Ranger

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Whenever park management has a question about park resources, I seek out specialists in that topic. If the specialists don't know the answer, I work with them to find funding to conduct the research necessary to answer that question. Only about 20 percent of research projects going on in the park are studies we initiated, so I also help researchers apply for permits and ensure their applications are well reviewed. We have one of the highest numbers of research permits per year of any national park—135 thus far in 2019.

There is so much natural and cultural diversity in these mountains and so many fascinating ways it all fits together, I could never get bored. I am very proud of my part in the park's All Taxa Biodiversity Inventory, a 20-plus-year project that has about doubled the number of species known from the park and identified more than 1,000 species of plant, animal, fungi and bacteria new to science.

Another ongoing project will help us better understand rainfall in these mountains. When Drs. Ana Barros of Duke and Doug Miller of UNC–Asheville placed rain gauges near some of the highest points in the park, we discovered that rainfall can be much, much heavier in the high elevations than in the valleys, and often much higher than weather radar indicates. Their continuing work will help us predict where hikers might be in trouble and where trails might be damaged during a big storm.

Associated work by Dr. Steven Fridley of Syracuse will help us relate the precipitation data to the conditions different tree species seem to like. This will allow us to have a better understanding of why different tree species grow where they are and predict where they might grow in the next hundred years.

Great Smoky Mountains National Park was given in trust to the National Park Service to conserve the scenery and the natural and cultural resources and provide for the enjoyment of visitors in ways that leave the park undamaged for future generations. That is very hard to do if we don't understand what it is we are protecting. I believe that the research going on in the park helps us understand how the park works so we can better conserve it and allows us to discover the incredible stories that help increase visitor understanding and enjoyment.

PARK NEWS

Great Smoky Mountains National Park news briefs

Armadillos Have Moved into GSMNP! by Sarah Shiver

Park rangers often find surprising images on the game cameras they use to monitor wild hog activity in Great Smoky Mountains National Park. The most recent shock happened on June 3, when a camera at Newfound Gap snapped a photo of a nine-banded armadillo, the first official documentation of the species within the park.

Nine-banded armadillos have expanded their territory for decades, first appearing in Tennessee in 2013. Roadkill incidents involving armadillos have been reported in areas surrounding GSMNP for a few years, so their arrival in the park was expected.

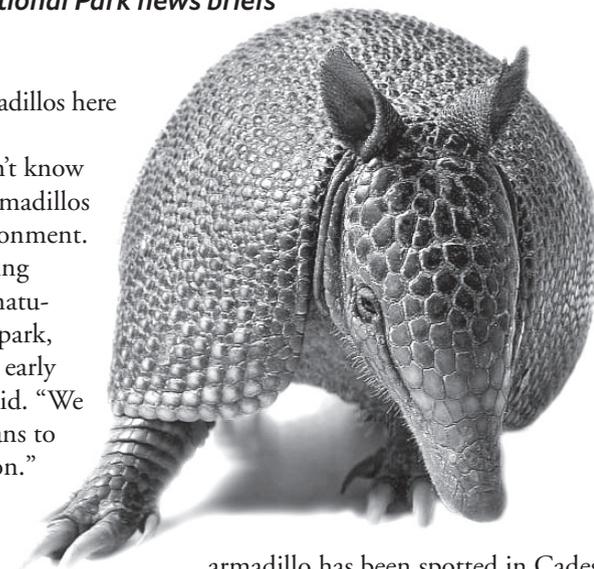
Wildlife Technician Ryan Williamson discovered the photos of the armadillo. “West Tennessee has a large armadillo population, so we will

probably see more armadillos here in the future,” he said.

Park biologists don't know what impact, if any, armadillos may have on the environment. “For now, we are treating their movements as a natural migration into the park, just like coyotes in the early 1980s,” Williamson said. “We have no immediate plans to control their population.”

Supervisory Wildlife Biologist Bill Stiver welcomes visitors to report any armadillo sightings within GSMNP. “All observations will help us understand the armadillos and their population.”

As this article is going to press, we just learned that a second



armadillo has been spotted in Cades Cove. If you see an armadillo in the park you should treat it as you would other wildlife encounters and do not approach, harass or disturb it. Please report any armadillo sightings at inaturalist.org/projects/discover-life-in-america-atbi.

Image by Meg Farinosa

Bicentennial of Treaty of Calhoun Marks Significant Moment in Cherokee History

This year marks the 200th anniversary since representatives of the Cherokee Nation signed the 1819 Treaty of Calhoun—a treaty that ceded some 6,000 square miles of Cherokee land between the Hiwassee, Tennessee and Little Tennessee Rivers to the US government.

This territory would be incorporated into the growing states of Georgia, Tennessee and North Car-

olina and eventually include what is now Great Smoky Mountains National Park.

In exchange for the ceded lands, the remaining Cherokee were given the choice of relocating west to Arkansas or accepting lifetime reservations east of the Mississippi by agreeing to become US citizens. More often than not, however, those who attempted to accept reservations

were soon dispossessed through stipulations on their claims or the illegal intimidation of encroaching land speculators, which at times included theft and violence.

The 1835 Treaty of New Echota brought about the Trail of Tears and the forced removal of more than 14,000 remaining Cherokee. However, some were able to remain via treaty agreements, some walked back to the Smokies from Oklahoma, and a small number also managed to evade capture by hiding in the mountains of Western North Carolina. These groups later unified to become the Eastern Band of Cherokee Indians.

This year, for the first time in the park's history, a number of Eastern Band citizens will again be allowed to harvest sochan leaf (cut-leaf coneflower) in the park—a practice considered sacred in traditional Cherokee culture.



Cherokee men near Bryson City lined-up ready to play a game of stickball, circa 1920s. Image courtesy of NPS archives by George Masa

Smokies Recovering Three Years After the Fire

Researchers are studying effects on fungi, salamanders, soil content and more

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All of this activity has been of particular interest to researchers who were eager to study the ecosystem after the fire. “I was impressed at how rapidly our research partners responded,” said NPS Science Coordinator Paul Super. “Within a few days after the fire, dozens of scientists who had experience in the park had contacted me asking what they could do to help and what sort of post-fire research might be of assistance.”

Researchers are studying everything from oak trees to earthworms in the path of the fire. “High-intensity wildfires are very uncommon in our area,” said Jennifer Franklin, professor of forestry at the University of Tennessee. “We know that they do occur and may have been an important natural disturbance that has shaped the eastern hardwood forests that we see today. We have the opportunity to study the ecological effects of a high-intensity wildfire and the development of a renewed forest in a place that is relatively free of human influence.” Franklin’s team hopes their work will shape how prescribed burns are used to

best promote establishment of oaks, an ecologically important species characteristic of eastern forests.

Fungi are also essential to the health of forests due to their ability to decompose organic matter, supplement plants with phosphorous and water, and protect plants against insect pathogens. Karen Hughes, professor of evolutionary biology at the University of Tennessee, has been documenting fungal species in the most severely burned areas. Some fungi can lay dormant in the soil as spores or hard tissue or even hide as endophytes inside plants like mosses and liverworts and only fruit after a fire. “A total of 42 species found were identified as pyrophilous, or ‘fire-loving,’ fungi,” said Hughes. “Eighteen of these have not previously been seen in Great Smoky Mountains National Park, and a few of these will likely be new to science.”

Soil and water quality are also being monitored to study impacts in different areas of severity. “The wildfire occurred in and around areas in the park that have been continuously monitored for

more than two decades,” said Jennifer Schweitzer, professor of ecology and evolutionary biology at the University of Tennessee. “Using this past soil biogeochemistry and water quality data, the team has great insight into the conditions before the fire, and what impacts the fire has had.”

Another study is looking at animal life within the soil. “Fire doesn’t kill everything in the soil system,” said Bruce Snyder, assistant professor of biology at Georgia College and State University. “Litter-dwelling fauna lose a lot of their habitat, but soil-dwelling fauna are more protected. Many species can move between the two habitats and survive.” In addition to learning more about little-understood soil fauna communities, this research may determine if fire can be an effective control for an invasive earthworm species.

Understanding the impacts of fire on the Smokies’ diverse population of salamanders can also provide insight on the recovery of the forest. “Salamanders have been thriving in the Southern

Appalachians for millions of years and have persisted through previous disturbances such as logging,” said Bill Peterman, assistant professor of wildlife ecology and management at Ohio State University. However, the sudden nature of wildfires and often-extreme disturbances they create can drastically alter salamander ecosystems. “With better understanding of how wildfire affects salamanders,” Peterman said, “effective conservation and management plans can be developed to preserve these iconic Appalachian amphibians.”

Although the 2016 wildfire in the park was human-caused, fire has been a natural part of the Smokies landscape for thousands of years and many of the plants and animals living here have adapted to that reality. “The 2016 wildfires are without precedent in the annals of the park’s fire history,” said NPS Fire Ecologist Rob Klein, “but the plants and animals are responding in ways that point to the resilience of this landscape in the face of millennia of similar disturbances.”



Resource Education Ranger Rhonda Wise took photos of the same plot of land around a fire snag in the Baskins Creek area of the park to document the changes that occur in vegetation growth over time. *Images by Rhonda Wise*

Respect Road and Trail Closures

Closures can pose frustrations for visitors, but are essential for safety and welfare of park

Story by Sarah Shiver • Illustration by Emma DuFort

PARK

Etiquette

When planning a trip to Great Smoky Mountains National Park, it is important to know which roads and trails are closed to park visitors. Some areas of the park close seasonally. However, hazardous weather conditions, road construction, trail improvements, and wildlife activity can cause sudden or unexpected road, trail, campsite and shelter closures. Such closures can disrupt well-made plans, but it is important that you respect them both for your safety and for the park's well-being.

Backcountry Management Specialist Christine Hoyer understands the frustration that is caused by closures. "It may not always be obvious to a visitor why something is closed, what the heightened risk in a given area might be, or the potential impact of entering a closed area," she says. "However, careful consideration goes into the park's decision to close something because we know closures will impact visitors' experiences, so it is important that these closures be taken seriously."

Bear activity is one of the leading causes of backcountry campsite and shelter closures. "Bear-related closures occur when a bear begins to frequent an area, enter sites where people are sleeping, or eat any human food," says Supervisory Wildlife Biologist

Bill Stiver. "When a bear exhibits such behavior, areas are closed to limit bear-human interactions and protect both bears and visitors."

Visitors are asked to respect closures to ensure the safety of park staff, the environment, and themselves.

"Safety is always our highest priority," Hoyer says. "Ignoring closures not only puts visitors at risk, but also park staff who may be called on to assist in an emergency. In addition, ignoring a closure can have lasting, irrevocable impacts on park resources." The respect

and cooperation of park visitors is essential to preserving the health and beauty of GSMNP.

For more information on park closures, visit nps.gov/grsm/planyourvisit/temproadclose.htm or call the Backcountry Office at 865.436.1297.



The park service strives to keep as much of the park accessible to visitors as possible, but closures are sometimes needed to protect vulnerable areas and reduce safety hazards.

GSMNP asks visitors to be respectful of closures to help accomplish these goals.

Be Aware of closures

In addition to regular seasonal closures, park visitors should be aware of upcoming work that will limit access to Cades Cove.

Laurel Creek Road leading to Cades Cove will be closed to all traffic from January 3 through February 29, 2020 to repair the Bote Mountain Tunnel. The tunnel was constructed in 1948 and has not had any significant rehabilitation work since. The work will involve replacing nine draining structures within the tunnel wall, patching the concrete liner, replacing the underdrain, and sealing concrete cracks. Repaving will be completed at a later date.

Roads: Note that all park roads, including Newfound Gap Road (U.S. 441), may close temporarily for snow or other inclement weather at any time.

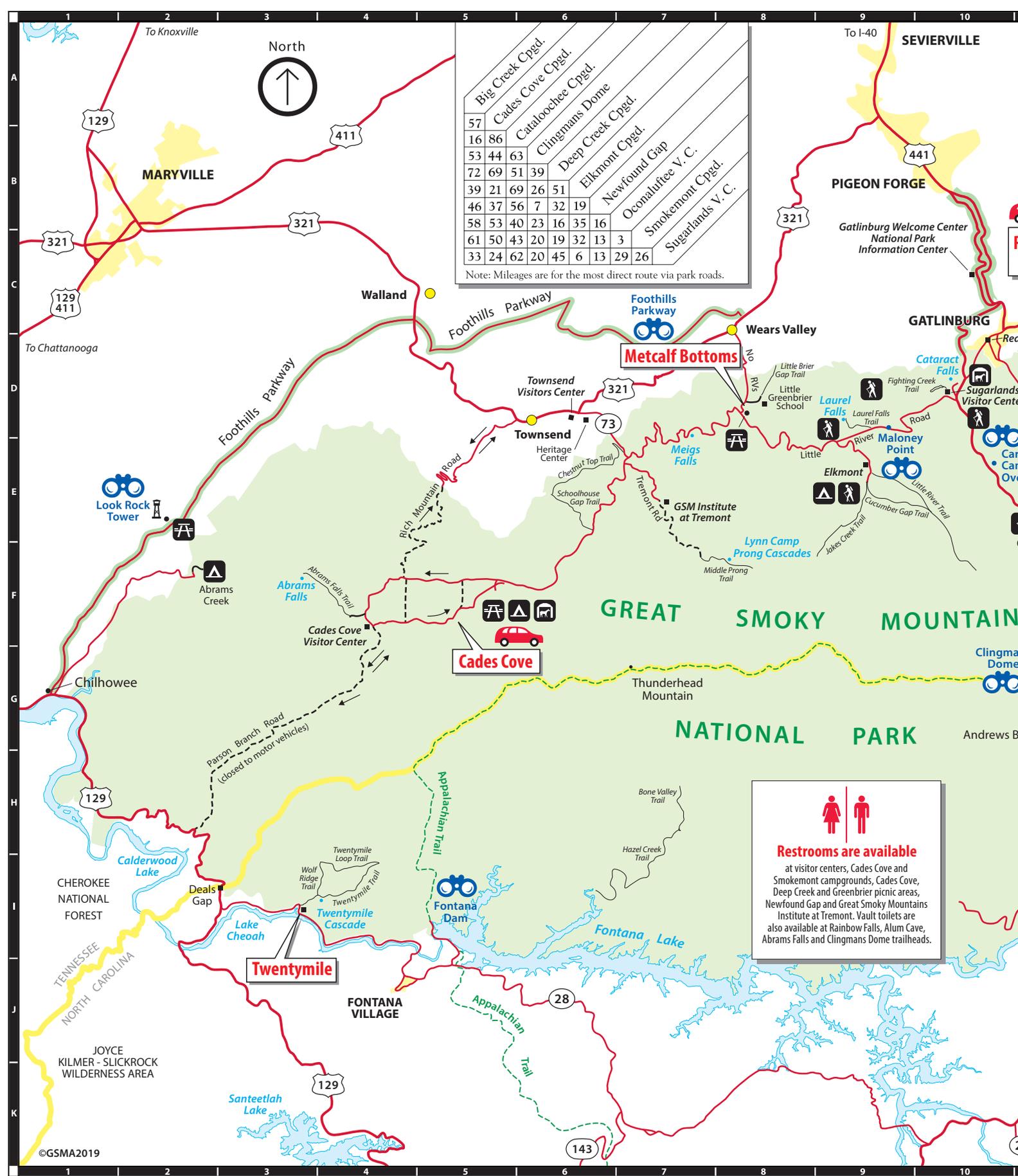
- Clingmans Dome Road closes December 1
- Forge Creek Road (in Cades Cove) closes December 31
- Heintooga/Round Bottom Road closes October 28
- Heintooga Ridge Road closes October 28
- Little Greenbrier Road (to Little Greenbrier Schoolhouse) closes November 25
- Parson Branch Road (in Cades Cove) is closed due to hazardous trees
- Rich Mountain Road (in Cades Cove) closes November 11
- Roaring Fork Motor Nature Trail closes November 25
- Straight Fork Road closes October 28

Hiking Trails: All hiking trails are open in winter. However, some trailheads will be inaccessible to motor vehicles because of seasonal road closures. Walking on seasonally closed roads is permitted unless snow plowing or construction work is underway.

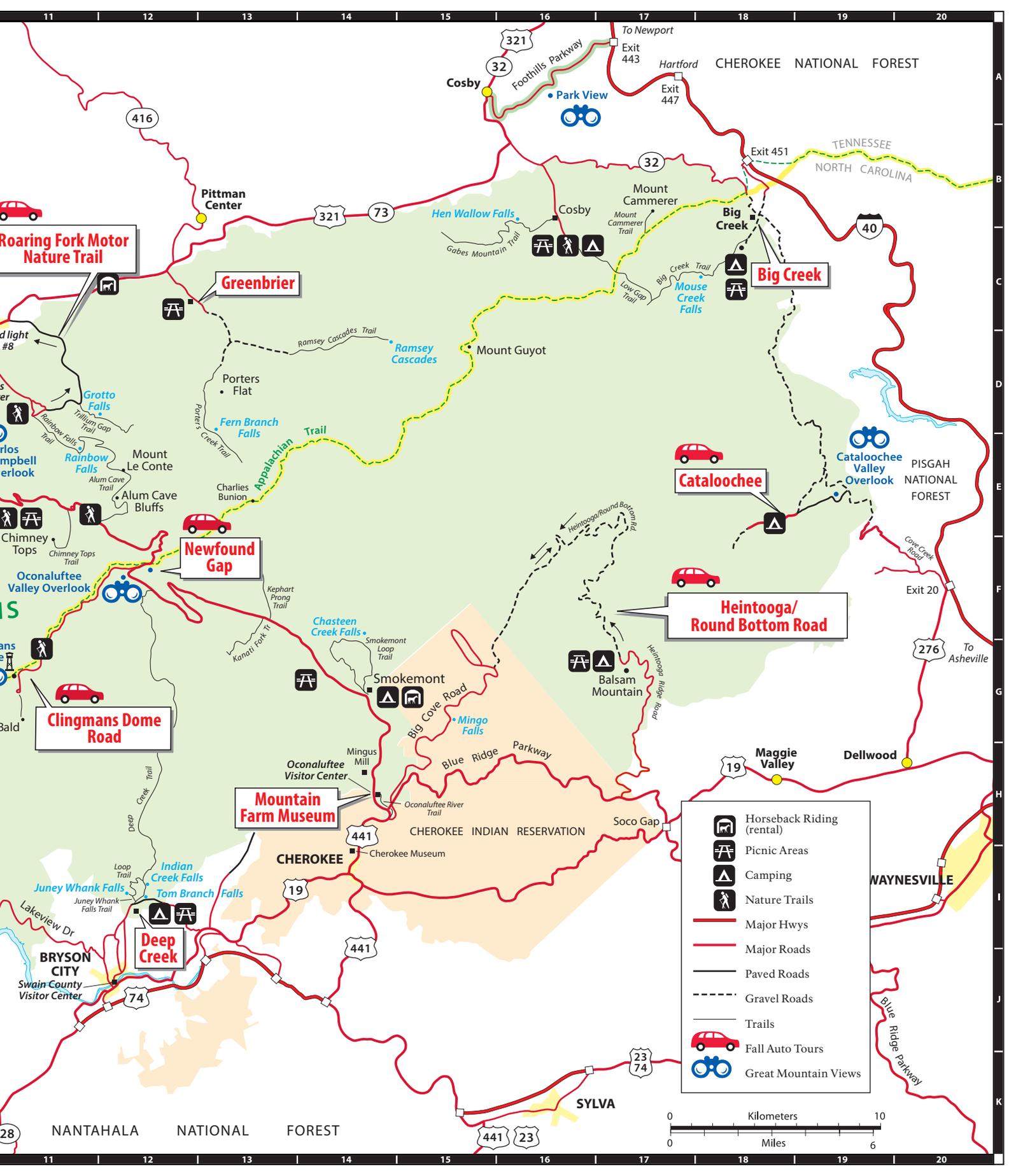
Riding Stables: Cades Cove closes November 30
 Smokemont closes November 4
 Smoky Mountain (on U.S. 321 near Gatlinburg) closes November 25
 Sugarlands closes November 25

Grist Mills: Cable Mill (in Cades Cove) is open daily through October 31 and is open Friday through Sunday in November.
 Mingus Mill is open daily through October 31 and is open Friday through Sunday in November.

Lodging: LeConte Lodge closes November 20



Restrooms are available at visitor centers, Cades Cove and Smokemont campgrounds, Cades Cove, Deep Creek and Greenbrier picnic areas, Newfound Gap and Great Smoky Mountains Institute at Tremont. Vault toilets are also available at Rainbow Falls, Alum Cave, Abrams Falls and Clingmans Dome trailheads.



Roaring Fork Motor Nature Trail

Greenbrier

Big Creek

Newfound Gap

Cataloochee

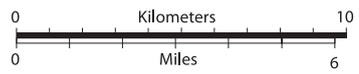
**Heintooga/
Round Bottom Road**

Clingmans Dome Road

Mountain Farm Museum

Deep Creek

| | |
|--|---------------------------|
| | Horseback Riding (rental) |
| | Picnic Areas |
| | Camping |
| | Nature Trails |
| | Major Hwys |
| | Major Roads |
| | Paved Roads |
| | Gravel Roads |
| | Trails |
| | Fall Auto Tours |
| | Great Mountain Views |



Black Bears' Fall Foraging in Cades Cove

Bulking up on cherries tides bears over until acorns and other nuts fall

Cades Cove is one of the most popular destinations in Great Smoky Mountains National Park—both for people and for the park's population of black bears, which return year after year to feast on the dark purple fruits of native black cherry trees.

Visitors to Cades Cove in the fall are likely to see evidence of bears climbing high among the branches of cherry trees, which can look like “giant bird nests” afterward according to NPS Wildlife Biologist Bill Stiver. “They get up there and break the branches and pull them into themselves to get the cherries out of the ends of the limbs,” said Stiver. “It’s pretty amazing how nimble they are out on those branches.”

No matter how precarious their heights may be, cherries remain a tantalizing draw for bears and a highly nutritious food source that often fills the gap between the soft mast foods of summer—like huckleberries, blueberries or blackberries—and the hard mast foods of autumn like nuts and acorns. In return, cherry seeds are passed through the bears’ digestive systems and dispersed far and wide.

Since the availability of any of these food sources can vary drastically from year to year, black bears must put on as much weight as possible when food is available to carry them through the coming winter and spring. “The interesting thing about that is that if we have a really poor food year, the bears will actually den quicker,” said Stiver. “If we have pretty good food, they’ll stay active a bit longer.”

Cherries serve as one vital nutrient source for black bears among several. “Another alternative food source for bears in the fall—and sometimes a real important one when the acorns fail—is wild grapes,” said Stiver. “I’ve also seen them eating mountain ash in the fall when acorns aren’t abundant, so they

have some other foods they can turn to.”

Since many cherry trees thrive along the edge of the forests and near roadways, black bears may be particularly visible to motorists in Cades Cove during the peak of fruiting season. Disturbing bears, however, can prove dangerous and disrupt their ability to gather critical fat reserves for winter.

“Our regulation is that you cannot willfully approach a bear or an elk within 50 yards or any distance that disturbs them,” said Stiver. “Likewise, if a bear is coming towards you or trying to cross the road, it is your responsibility to give that animal space so it can go where it wants to go.”

By observing foraging wildlife from a safe distance, park visitors can help make sure Cades Cove remains a popular fall destination for everyone—humans and black bears alike.

Monarchs on the Wing in the Cove

Cades Cove is now known to be a valuable refuge for monarch butterflies along their fall migration path to Mexico from breeding sites throughout the US and southern Canada. The area is attractive to butterflies for several reasons says Wanda DeWaard, an outdoor educator who leads monarch tagging programs in the area.

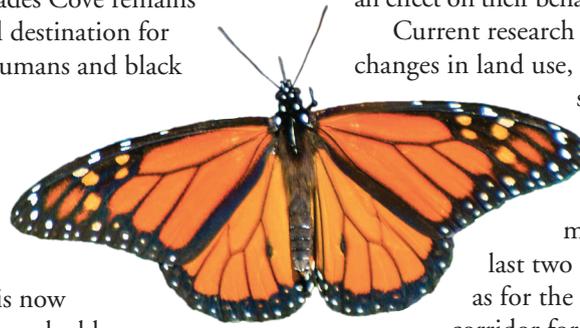
“Fall-flowering plants are important for the monarchs here emerging from their chrysalis as well as for the monarchs passing through on their migration,” said DeWaard. “The milkweed here is a host plant for their final breeding cycle that starts usually in August and ends in late September. Plants like thistles, iron weed, heath asters, red clover, wing stem and cup plant are all important for them

to get enough nectar to get to Mexico as well as to get through the winter with enough lipids in their system.”

In addition to serving as an exclusive host for monarch larvae, milkweed produces a toxin that monarchs have adapted to ingest and incorporate into their body, making them unappealing to would-be predators. The defense is so effective that other butterflies, such as the viceroy butterfly, have evolved to mimic the appearance of the monarch.

The availability of key flowering plants can create hotspots of activity and directly impact monarch numbers. “Dry years make it tough for them as there will be very little blooming when they come through,” said DeWaard. “Management like mowing and controlled burns also has an effect on their behavior and habitat.”

Current research suggests that changes in land use, forest loss and the spread of pesticides are likely responsible for declining numbers of monarchs over the last two decades as well as for the shrinking nectar corridor for these royal pollinators. Restoring milkweed, planting native wildflowers and avoiding the use of pesticides can help support monarchs and many other winged pollinators in Cades Cove and beyond.



Black bears sometimes eat mountain ash berries in the absence of ample fall acorns and other hard mast. Image by Bill Lea. Monarch image by Warren Lynn

WHAT IS MAST, ANYWAY?

Mast is a term used by botanists and wildlife biologists to refer to the edible reproductive structures (nuts, seeds, buds and fruits) that trees and shrubs produce. Mast production varies from year to year depending on weather and available resources.

Examples of soft mast:

- Cherries
- Blackberries
- Persimmons

Examples of hard mast:

- Acorns
- Hickory nuts
- Walnuts

FREE, FUN THINGS TO DO

Programs and activities in Great Smoky Mountains National Park September 15 - October 31, 2019

SUGARLANDS/ELKMONT/COSBY AREA

| | WHEN? | MEETING LOCATION | DURATION/DIFFICULTY |
|--|--|---|---|
| A Walk in the Woods: Get away from the hustle and bustle on an easy stroll with a ranger to discover stories of history and nature along this scenic, wooded trail. | Daily 11 a.m. | Sugarlands Visitor Center | 1.5 hours Easy |
| Porch Talk: Did you know that the Smokies are considered one of the most ecologically diverse places in the world? Join a ranger to learn more during this “ranger’s choice” style program. | Daily 2 p.m. | Sugarlands Visitor Center Patio | 30 minutes Easy  |
| Ranger’s Pick: From pollinators to otters, nature detectives to Appalachian music, the Smokies nurture the soul and stir the imagination! Join a ranger to learn more during this “ranger’s choice” style program. <i>Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.</i> | Sundays, Thursdays & Fridays 10 a.m. | Sugarlands Visitor Center | 45 minutes Easy  |
| Where are the Wildlife? Scientists use tools to locate and track species throughout the park. Learn more about these tools and ways that you can help map species in the park too! | Tuesdays 2 p.m. | Sugarlands Visitor Center | 1 hour Easy |
| What Tree is This? Join a park ranger on a hiking adventure through the most diverse type of forest in the park! Learn how to identify trees, enjoy the beauty of the leaves as they transition into fall colors, and explore the various relationships the trees have with the world around them. | Wednesdays 10:30 a.m. | Cove Hardwood Nature Trail in Chimneys Picnic Area | 1.5 hours Moderate |
| Let’s Chat about It! The Smokies staff loves a good debate! Join a ranger to philosophize, pontificate, cajole or contemplate as we discuss hot topics in the park. Topics vary from week to week. | Wednesdays 2 p.m. | Sugarlands Visitor Center | 1 hour Easy  |
| Let’s Explore the Backcountry: Do you know what to pack before you make tracks? Do you know how to set up a campsite? Learn what you need to bring, proper food storage and where the best places are to camp in the Smokies! | Thursdays 3:30 p.m. | Sugarlands Visitor Center | 1 hour Easy |
| Parks in Focus: Discover, Create and Explore: Develop a new connection to the uniqueness of the Smokies through the lens of a camera. <i>Bring your own device (35 mm, digital camera, phone, ipad, etc.). Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.</i> | Fridays 10 a.m. | Little River Trailhead | 1 hour Easy |
| Talking Tombstones: Cemeteries are a wealth of information. Find out what the tombstones have to tell us about communities of the Smokies. Great for families! | Fridays 2 p.m. | Jakes Creek Trailhead in Elkmont | 1 hour Easy |
| Sugarlands Evening Amble: Join a ranger at twilight to explore intriguing transformations within the Smokies as daylight wanes to darkness. <i>Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.</i> | Fridays 7:30 p.m. | Sugarlands Valley Nature Trail | 1 hour Easy |
| B.A.R.K. Ranger Program: Hiking with your dog is a great way to experience nature with your furry friend. Learn more about B.A.R.K Ranger ethics and hear about the historic role dogs have played while enjoying the Smokies with your canine companion. <i>Limited to 15 friendly and socialized dogs. Call 865.436.1291 up to 4 days in advance to make reservations. Dogs must be on a leash no longer than 6 feet at all times (no retractable leashes, please).</i> | Saturdays 9 a.m. | Gatlinburg Trail Trailhead/ near traffic light #10 in Gatlinburg) | 1 hour Easy |
| Bringing in the Harvest: As the seasons begin to change, the time has come to prepare for winter. Learn how humans and wildlife begin to prepare for their survival for the months ahead. | Saturdays 1 p.m. | Sugarlands Visitor Center | 45 minutes Easy  |
| Old Town of Elkmont: Is it lost? Is it a ghost town? Find out what happened at Elkmont before it became a campground. | Saturdays 2 p.m. | Elkmont Campground Office | 2 hours Moderate |

METCALF BOTTOMS AREA

| | | | |
|--|-------------------------------------|-------------------------------|----------------|
| School Days at Little Greenbrier: Go back in time to discover what it was like to live in a mountain community and go to school in a one-room schoolhouse. Fun for all ages and great for Junior Rangers. <i>Please arrive 15 minutes before program start. Space is limited.</i> | Tuesdays 11 a.m. & 2 p.m. | Little Greenbrier Schoolhouse | 1 hour Easy |
|--|-------------------------------------|-------------------------------|----------------|

OCONALUFTEE AREA

| | WHEN? | MEETING LOCATION | DURATION/DIFFICULTY |
|---|--|---|---|
| Mingus Mill Demonstration: Chat with a miller and feel the rumble of this historic gristmill in action. <i>Mingus Mill is a half-mile north of the Oconaluftee Visitor Center on U.S. 441.</i> | Daily 9 a.m. – 5 p.m. | Mingus Mill | Ongoing, 8 hours Easy  |
| Mountain Farm Museum: Walk down to the farm for a glimpse into the past. Self-guiding brochures are always available, and some days you may find live demonstrations taking place. | Daily Dawn till dusk | Mountain Farm Museum adjacent to Oconaluftee Visitor Center | Ongoing, all day Easy |
| Forecasting the Future with Mother Nature: Nuts were fair, berries were late. Several morning fogs and rings around the moon in August. Does this mean a hard winter or a mild one? What about snow this year? How did people in the past use nature to forecast the upcoming winter? Join park staff and explore the possibilities this year. | Sundays & Wednesdays except Sept. 18 11 a.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Down on the Farm: Walk down to the Mountain Farm Museum and see what past-times settlers may have been engaged in, such as gardening, woodworking or other endeavors. Activities vary. | Sundays 2 p.m. Fridays except Friday Sept. 20 11 a.m. | Mountain Farm Museum adjacent to Oconaluftee Visitor Center | 1 hour Easy  |
| The Unlovables: Mosquitoes, gnats and flies are good for what? Even those creatures we may find annoying have a role in our ecosystem. We may never love them, but we can learn to appreciate them. | Mondays except Sept. 16 11 a.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Black Bears: Big, Smelly and Smart: Discover the wondrous ways black bears adapt to their environment. Find out how bears prepare for the upcoming winter season. | Mondays except Sept. 16 2 p.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Creatures of the Night: Many of us are uncomfortable in the dark. Are all those night-time creatures lurking around or simply avoiding us? Learn about some of these animals, why they are nocturnal, how they have developed adaptations for survival and how they fit into our ecosystem. | Tuesdays except Sept. 17 11 a.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| What Did You Say? ‘Don’t throw the baby out with the bathwater!’ and ‘cut out the light.’ Have you ever heard a saying and wondered its meaning? Join a ranger to explore the history behind some common southern sayings and how they might connect to mountain farm life or even your own. | Wednesdays except Sept. 18 2 p.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| King of the Hill! Okay, really Salamander Capital of the World—just trying to be modest. There are more species of salamanders in this park than anywhere else in the world. The importance of this cannot be understated as they are one of nature’s signs of the park’s health. They are also really cool to see. | Thursdays except Sept. 19 11 a.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Smoky Mountain Elk: Fall is a great time for viewing elk in rut. Discover how elk stay warm in the winter and feel the weight of their antlers. A ranger will be available to answer your questions. | Fridays except Sept. 20 2 p.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Is it a Teddy Bear Picnic or a Ravenous Feast? August is a time of change for the American black bear in the region. Summer is over, and preparations are taking place for their long winter nap. Come learn how these amazing creatures adapt and survive the winter to emerge in the spring. | Saturdays except Sept. 21 & Oct. 19 11 a.m. | Oconaluftee Visitor Center Porch | 30 minutes Easy  |
| Smokemont Evening Program: Join a ranger for a national park tradition—the evening campfire program. Topics vary, but you’re guaranteed to learn something new about the Great Smoky Mountains. <i>Remember to bring a chair or blanket to sit on.</i> | Saturdays except Sept. 21 6:30 p.m. | Smokemont Campground between C and D Loops | 1 hour Easy  |

CATALOOCHEE AREA

| | | | |
|---|--|------------------------------------|---|
| Junior Ranger: Smoky Mountain Elk: It’s all about connection and balance in nature to ensure survival for elk and other species living together in an ecosystem. Learn about the history of the elk through “show and tell” activities. Then stay and watch the elk come into in the fields! | Sundays 3:30 p.m. | Palmer House in Cataloochee Valley | 45 minutes Easy  |
| Cataloochee Elk: Cataloochee is a great place for viewing elk. Learn about the history of the elk through “show and tell” activities. Then stay and watch the elk come into in the fields! | Saturdays, Sept. 21, 28 & October 19 3:30 p.m. | Palmer House in Cataloochee Valley | 45 minutes Easy  |

CADES COVE AREA
WHEN?
**MEETING
LOCATION**
**DURATION/
DIFFICULTY**

Because of slow moving traffic it may take over an hour to drive six miles from the start of Cades Cove Loop Road to programs at the Cades Cove Visitor Center/Cable Mill Area. Plan accordingly. Additional programs may be scheduled daily. Please check the bulletin boards at the Cades Cove Campground Office, Cades Cove Visitor Center and Orientation Shelter.

| | | | |
|--|---|--|---------------------------------------|
| John P. Cable Mill: Experience what it was like to grind corn into meal at the gristmill. <i>Cable Mill area is halfway around Cades Cove Loop Road.</i> | Daily 9 p.m. – 5 p.m. | Cable Mill Area | Ongoing, 8 hours Easy ♿ |
| Bear Aware Hike: Take a short hike on an easy trail to look for signs of bears and learn to be “bear aware.” <i>Bring water and closed-toed shoes. Orientation shelter is at the entrance of the loop road.</i> | Sundays 10 a.m. | Cades Cove Orientation Shelter | 1.5 hours Easy-moderate, 2.5 miles |
| Junior Ranger Program: Join park staff for a hands-on exploration of the Smokies. <i>Visitor Center is halfway around the loop road.</i> | Sun., Thu., Sat. 1 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Creature Feature: Join park staff for an interactive program exploring some of the wildlife of Great Smoky Mountains National Park! <i>Cable Mill area is halfway around Cades Cove Loop Road.</i> | Sundays 2:30 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Smoky Mountain Traditions and Tales: Meet with park staff to explore mountain culture in its many forms, from music to crafts to toys. <i>Visitor Center is halfway around the loop road.</i> | Mondays & Wednesdays 1 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Precious Memories: Go back in time to discover how the church influenced the Cove and its residents. <i>Access road approximately 2 ¼ miles on Cades Cove Loop Road.</i> | Tuesdays 11 a.m. & 1 p.m. | Cades Cove Primitive Baptist Church | 30 minutes Easy |
| Bear Aware: Learn to identify signs of bears along the trail, where you might see bears and how to be “bear aware” in the park. <i>Visitor Center is halfway around the loop road.</i> | Tuesdays 1 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Mountain Life: Go back in time for a hands-on exploration of what life was like 100 years ago. No electricity required! <i>Visitor Center is halfway around the loop road.</i> | Tuesdays 2:30 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Birds, Bears and Butterflies: The park is home to thousands of species. Join a park ranger in exploring the habitats of many of the park’s favorite critters. <i>Program begins Oct. 2.</i> | Wednesdays 9 a.m. | Elijah Oliver Trailhead/ 4.5 miles around the loop road | 1 hour Easy |
| Quiet Side of Abrams Creek: Explore “the quiet side” of Abrams Creek, looking for wildlife and visiting historic buildings in the area. <i>Bring water and wear closed-toed shoes.</i> | Thursdays 10 a.m. | Abrams Falls Trailhead/ 4.9 miles around the loop road | 1.5 hours Easy-moderate, 1.5 miles |
| The Road Less Traveled: Walk to John Oliver Cabin while discovering the history and diversity of life. <i>Bring water and closed-toed shoes. Orientation shelter is at the entrance of the loop road.</i> | Fridays 9:30 a.m. | Cades Cove Orientation Shelter | 2-3 hours Easy-moderate, 2.5 miles |
| Smoky Mountain Stories and Songs: Join park staff and special guests for stories and songs! Some evenings feature performances, tales, or a chance to learn a musical instrument. | Fridays 7 p.m. | Cades Cove Campground Amphitheater | 1 hour Easy ♿ |
| WILD by Design: A talk and hands-on demonstration about the wild things in the park. <i>Visitor Center is halfway around the loop road.</i> | Saturdays 2:30 p.m. | Cades Cove Visitor Center/ Cable Mill Area | 45 minutes Easy ♿ |
| Evening Campground Program—A Ranger Tradition! Join park staff for an evening program. Topics vary, but you are likely to discover something new and exciting about the Smokies. | Saturdays 7 p.m. | Cades Cove Campground Amphitheater | 1 hour Easy ♿ |

SPECIAL PROGRAMS

| | | | |
|--|---|--|--------------------------|
| Back Porch Old-Time Music Jam: Bring an acoustic instrument and join in on this old-time jam. Or just sit back and enjoy the sights and sounds as others play traditional Appalachian music. | Saturdays Sept. 7 & 21, Oct. 5 & 19, Nov. 16 1 p.m. | Oconaluftee Visitor Center Porch | 2 hours Easy ♿ |
| Fire Science & Salamanders: How does fire affect salamanders? Explore the role of fire in forest ecosystems and collect real scientific data on salamander populations. <i>Limited to 15 participants, ages 8+. Call 865.436.1291 up to 4 days in advance to make reservations.</i> | Thursdays Sept. 19, Oct. 3 & 17 9 a.m. | Location varies | 2 hours Strenuous |
| Science at Sugarlands: Join a scientist to learn about and engage in scientific research happening inside the park. Topics vary. September 20: <i>Burning Questions</i> ; October 19: <i>Lichens of the Smokies Revealed</i> . | Fridays September 20 & October 19 1 p.m. | Sugarlands Visitor Center | 2 hours Easy ♿ |
| Lantern Hike: Join us for a historical hike by lantern light and hear stories of people of the past while visiting home sites and cemeteries in the Cosby area. | Sundays September 22 & October 20 7:30 p.m. | Cosby Picnic Pavilion | 1.5 hours Moderate |
| Blacksmith Demonstrations: Learn the art of blacksmithing and why it was important in the Cades Cove community. <i>Visitor Center is halfway around the Cades Cove loop road. Inquire locally or call 865.448.4122 for more information.</i> | Saturdays & Sundays Select weekends 10 a.m. | Blacksmith building near the Cades Cove Visitor Center/Cable Mill Area | Ongoing, 6 hours Easy |
| Sorghum Making Demonstrations: Meet the mules and learn about the process of making sorghum molasses the old-time way. <i>Visitor Center is halfway around the Cades Cove loop road.</i> | September 20, 21, & 22 November 8, 9, 10, & 11 9 a.m. | Sorghum Mill near the Cades Cove Visitor Center/ Cable Mill Area | Ongoing, 8 hours Easy |



FIND IT!

Test your detective skills! Can you find the eight objects hidden in this Smokies scene?

- ___ mushrooms
- ___ a wildflower
- ___ a bear cub
- ___ a Luna moth
- ___ a fish
- ___ ferns
- ___ acorns
- ___ a mudpuppy



For more fun stuff about Great Smoky Mountains National Park, pick up a copy of *10 Things I Like About You* coloring book at any of the visitor centers in the park.

Great Smoky Mountains Association

Great Smoky Mountains Association has supported the educational, scientific and historical efforts of the National Park Service through cash donations and in-kind services since its launch in 1953.



By the end of 2019, the association will have provided more than \$44 million in assistance that includes saving hemlock trees, living history demonstrations, environmental education programs, historic preservation, and salaries for wildlife personnel.

Become an association member today and receive a number of benefits, including information about special events in the park and issues affecting the Smokies. Members also:

- receive a subscription to the semi-annual, full-color magazine *Smokies Life*
- get digital access to the award-winning quarterly park newspaper, *Smokies Guide*, and the association's e-newsletter, *The Cub Report*
- earn 15–20 percent discounts on books, music, gifts and other NPS-approved products sold at park visitor centers and via GSMA's web store SmokiesInformation.org
- learn about exclusive GSMA group hikes, backpacking excursions and educational sessions led by experts on natural and cultural history in Great Smoky Mountains National Park. Check out GSMA's Branch Out events at SmokiesInformation.org/events.

Join today using the coupon to the right, visit SmokiesInformation.org, or call us at 888.898.9102 x222. Memberships start at just \$35 per year.



Smoky Mountain Field School

An exciting variety of adventures awaits

adults who long to get out and explore the park accompanied by expert guides. Field School programs are offered by University of Tennessee Non-Credit Programs and GSMNP and include workshops on black bear and other wildlife, edible plants, nature photography, animal tracking, salamanders and mountain cooking. One-day programs start at as little as \$69. Contact: 865.974.0150 or visit smfs.utk.edu.

Great Smoky Mountains Institute at Tremont

Tremont is celebrating 50 years of providing powerful residential environmental education programs in Great Smoky Mountains National Park.

GREAT SMOKY MOUNTAINS INSTITUTE AT TREMONT

GSMIT hosts more than 5,000 students and adults annually, opening their eyes to the wonder and beauty of the natural world through school programs, teacher training, and adult enrichment programs such as our Southern Appalachian Naturalist Certification courses and photography workshops. It achieves its mission through residential programs, advocacy for outdoor learning, community engagement, and research that complements its learning laboratory.

Tremont also offers a variety of summer youth and family camps in the national park lasting from two to 11 days. All programs include meals, lodging and professional instruction: Firefly Camp (ages 4–9), Discovery Camp (ages 9–12), Wilderness Adventure Trek (ages 13–17), Girls in Science (ages 12–15), and Teen High Adventure (ages 13–17). Visit gsmit.org or call 865.448.6709 to learn more.



Discover Life in America
Discover Life in America helps

Great Smoky Mountains National Park understand and conserve its incredible abundance of biodiversity.

DLiA's flagship project, the All Taxa Biodiversity Inventory, aims to catalogue all the plants, animals and other life in the park. DLiA has worked with leading biologists from around the globe for more than 20 years to accomplish this monumental task. In that time, more than 20,000 species have been recorded in the park, including more than 1,000 that are new to science (first discovered in the park)!

In addition to managing the ATBI, DLiA works to educate the public on the importance of biodiversity in our lives and to engage volunteers to become 'citizen scientists'.

DLiA is supported by donations from individuals and institutions as well as funding from other nonprofit partners of Great Smoky Mountains National Park. Learn more at dlia.org or by calling 865.430.4757.

Friends of the Smokies

Friends of the Smokies is an official nonprofit partner of the National Park Service and Great Smoky Mountains National Park that helps to raise funds and public awareness and provide volunteers for park projects.

Since 1993, Friends of the Smokies has raised more than \$66 million to

support critical park projects and programs including:

- Management and research of bears, elk, native brook trout and other wildlife
- Intensive rehabilitation projects on the park's most impacted hiking trails like Alum Cave, Chimney Tops and Rainbow Falls
- Hands-on, curriculum-based environmental education for schoolchildren in Western North Carolina and East Tennessee
- Facilities and improvements to maintain a world-class visitor experience
- Historic preservation of cabins, churches and mills in Cades Cove and Cataloochee Valley

Your support of Friends of the Smokies makes these projects and much more possible. Join today, purchase a specialty license plate at BearPlate.org, or join FOTS for one of its special events like the Evergreen Ball or Smokies Stomp Barn Party. Your donations help preserve and protect Great Smoky Mountains National Park for generations to come. For more information, visit FriendsOfTheSmokies.org or call toll-free 800.845.5665.



GSMA MEMBERS

Get Rooted in the Smokies!

- Acorn (youth) Membership \$15
- Buckeye Annual Membership \$35
- Chestnut Annual Membership \$100
- Dogwood Membership \$200
- Hemlock Lifetime Membership \$1,000 payable in 5 installments
- Lookout League Business Memberships \$250-\$10,000

SIGN ME UP!

Name(s) _____

Address _____

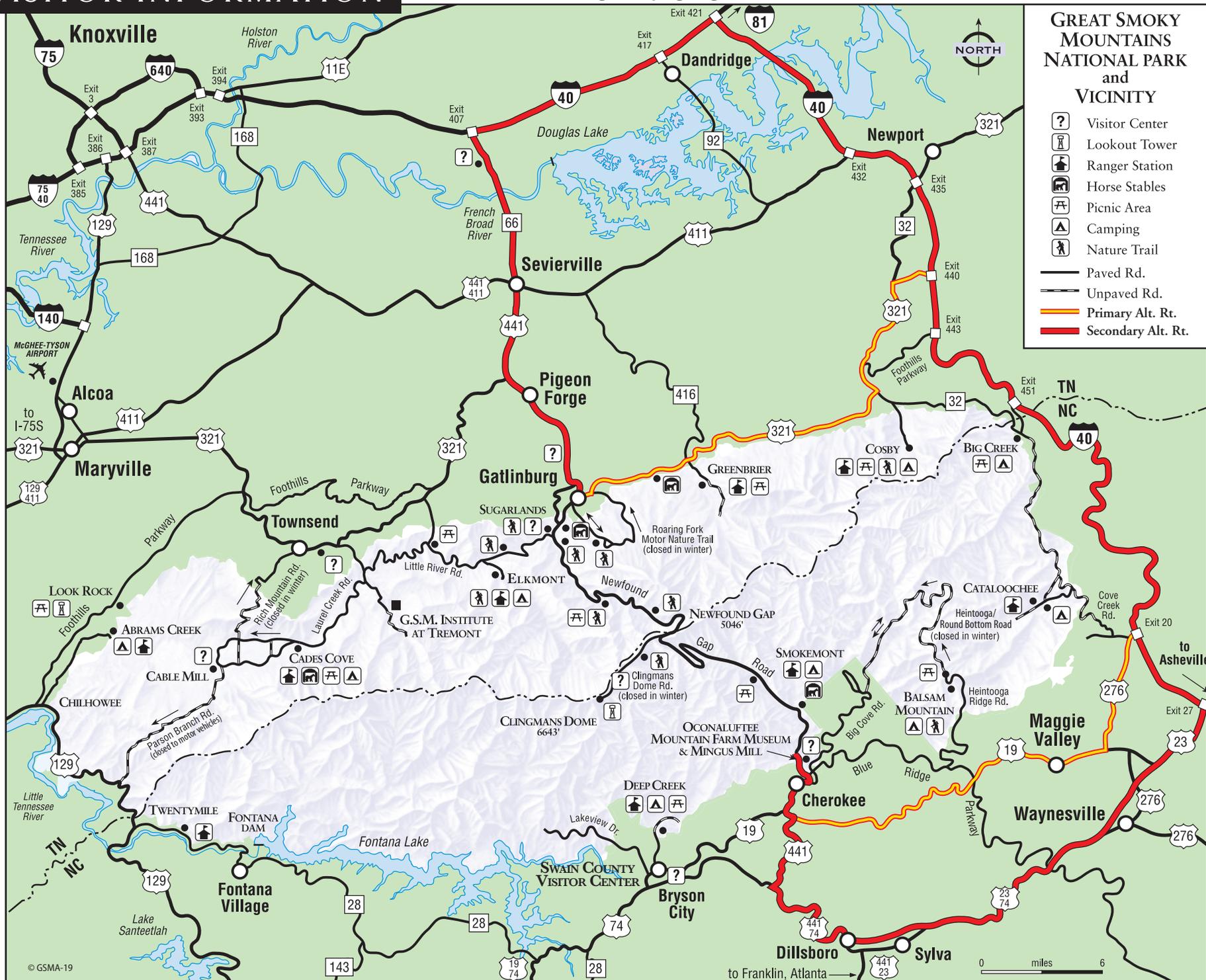
Email (for *Cub Report*) _____

Phone # _____

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

VISITOR INFORMATION

For more information, go to nps.gov/grsm



GREAT SMOKY MOUNTAINS NATIONAL PARK and VICINITY

- Visitor Center
- Lookout Tower
- Ranger Station
- Horse Stables
- Picnic Area
- Camping
- Nature Trail
- Paved Rd.
- Unpaved Rd.
- Primary Alt. Rt.
- Secondary Alt. Rt.

Information

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 x226
SmokiesInformation.org

Emergencies

For emergencies after hours:
Park Headquarters
865.436.9171
Cherokee Police
828.497.4131
Gatlinburg Police
865.436.5181

Hospitals

Le Conte/Sevier County
865.446.7000
Middle Creek Rd.,
Sevierville, TN
Blount Memorial
865.983.7211
U.S. 321, Maryville, TN

Haywood County

828.456.7311
Waynesville, NC
Swain County
828.488.2155
Bryson City, NC

All-access

Restrooms at park visitor centers (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.

Avoid the fine

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.