



SMOKIES GUIDE

The official newspaper of Great Smoky Mountains National Park • Late Summer 2018

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Black-capped Chickadee (*Poecile atricapillus*) is a fairly common permanent resident of the park. The species occurs mostly above 3,000 feet during the summer months. Image by Warren Lynn



Ranger Susan Sachs, Education Branch Chief

The Year of the Bird

A considerable diversity of habitat, topography and climatic conditions make the Smokies a prime spot for birdwatching!

As designated by National Geographic, the National Audubon Society, the Cornell Lab of Ornithology and dozens of other organizations—including the National Park Service—2018 is the Year of the Bird. Visitors to our park of every age can help birds by becoming involved in a citizen science project called AT Seasons.

AT Seasons brings together different parks and organizations that are actively monitoring seasonal changes in plants and animals (known as phenology) along the Appalachian Trail, which goes through Great Smoky Mountains National Park. Using online tools, observers can become citizen scientists and contribute to a comprehensive dataset with the goal of understanding the relationship between phenology and

climate change along the Appalachian Trail and a 60-mile radius around the trail, which includes our entire park.

It's easy to get started. Just go to atseasons.usanpn.org, create an account, and start logging your findings to join thousands who are helping us learn more about the park and its species every day.

AT Seasons is your opportunity to help track the unfolding of important life cycle events each year in our park and along the Appalachian Trail, linking your observations with others from Georgia to Maine. By observing and reporting seasonal changes of plants and animals you can help build the foundation to understanding and protecting the scenic natural beauty of the trail corridor.

Learn more about the AT Seasons project at atseasons.usanpn.org.

SPECIES MNEMONICS

Learn to find these birds by their call!

Black-throated Blue Warbler
Setophaga caerulescens
“i am so laz-eeeeee”

Black-throated Green Warbler
Setophaga virens
“zee-zee-zee-zoo-zee”

Black-capped Chickadee
Poecile atricapillus
“fee-bee” or “chk-a-dee-dee-dee”

Words with a Ranger

Phenology is the study of seasonal changes that we see in plants and animals—like the arrival of migrant birds such as warblers in April, the blooming of flowers such as Lady Slipper Orchids in May and the mating rituals of synchronous fireflies in June.

We are learning that climate changes in our park can affect phenological timing for both resident and migratory species.

Birds are among the most...

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. For reservations call 877.444.6777 or contact recreation.gov. 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 6 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. Call

877.444.6777 or contact recreation.gov. Group sites may be reserved up to a year in advance.

The list below shows number of campground sites, elevations, camping fees and maximum RV lengths.

For current dates of operation, visit nps.gov/grsm.

- **Abrams Creek** 16 sites, elev. 1,125', opens April 27, \$17.50, 12' trailers
- **Balsam Mountain** 42 sites, elev. 5,310', opens May 18, \$17.50, 30' RVs
- **Big Creek** 12 sites, elev. 1,700', opens March 30, \$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 March 23, \$25, 31' RVs
- **Cosby** 157 sites, elev. 2,459', opens March 23, \$17.50, 25' RVs
- **Deep Creek** 92 sites, elev. 1,800', opens March 30, \$21, 26' RVs
- **Elkmont** 220 sites, elev. 2,150', opens March 9, \$21-\$27, 32'-35' RVs
- **Smokemont** 142 sites, elev. 2,198',

open year-round, \$21-\$25, 35'-40' RVs.

• **Look Rock** *closed in 2018*

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. (Please see page 5 for more information.)

Bicycling

Most park roads are too narrow and heavily traveled by automobiles for safe or enjoyable bicycling. However, Cades Cove Loop Road is an exception. This 11-mile, one-way, paved road provides bicyclists with excellent opportunities for wildlife viewing and touring historic homesites.

From May 9 to Sept. 26, 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.

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

June 16 Womens' Work: Mountain Farm Museum

September 15 Mountain Life Festival: Mountain Farm Museum

December 8 Festival of Christmas Past: Sugarlands Visitor Center

December 15 Holiday Homecoming: Oconaluftee Visitor Center

May 8-12, 2019 Wilderness Wildlife Week: parkwide

For rent

The Appalachian Clubhouse and Spence Cabin at Elkmont can be rented for daytime events starting April 1 each year. Contact recreation.gov.

Visitor centers

Summer hours of operation are: Oconaluftee and Sugarlands: 8-7; 8-6 in September. Cades Cove: 9-7; 9-6:30 in September. Clingmans Dome 10-6:30; 10-6 in September.

Picnic areas

Picnic areas open year-round are: Cades Cove, Deep Creek, Greenbrier and Metcalf Bottoms. All other picnic areas (except Heintooga) open on March 30 or earlier. Heintooga opens May 26.



Cyclists enjoying Cades Cove when this one-way loop road closes to vehicles Wednesdays and Saturday mornings. 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: March 15

SUMMER: June 1
LATE SUMMER:
mid-August
AUTUMN: Sept. 15
WINTER: Dec. 1

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MOVING ROCKS HARMS AQUATIC LIFE.

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.

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.

- **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 3-5 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 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

Summertime 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. 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. 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. 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.

Summer 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: 57 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)

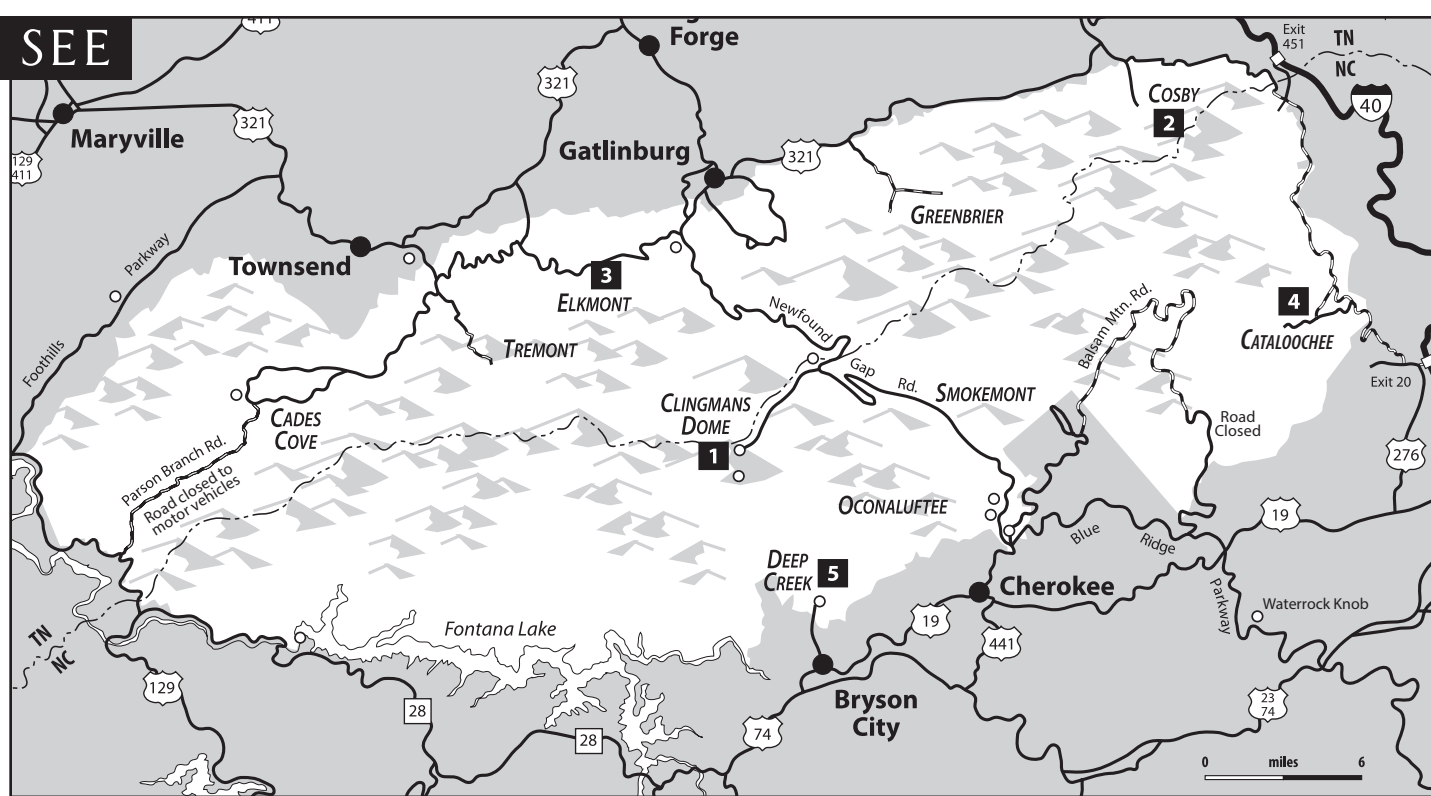
Cherokee: 52 miles (1½ hours)

Look Rock: 18 miles (½ hour)

Cataloochee: 87 miles (3 hours)

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.

	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"



1. Clingmans Dome

Highlights: mountain views, access to Appalachian Trail

If you want to reach the highest peak in the Smokies, turn off Newfound Gap Road near Newfound Gap and follow the seven-mile-long Clingmans Dome Road to its end. From the large parking area, a very steep, paved, half-mile trail leads past a visitor center to the observation tower on top of Clingmans Dome. On a clear day, the views are unbeatable.

At an elevation of 6,643', Clingmans Dome is significantly cooler than the surrounding lowlands and receives much more precipitation.

A trip to Clingmans Dome is a trip to the Canadian-zone spruce-fir forest. This fragrant evergreen woodland is similar to the boreal forests of New England and eastern Canada. There is excellent summer wildflower viewing along the trail to the observation tower.

Mileage from Gatlinburg—20
from Cherokee—23
from Townsend—41

Mileage from Gatlinburg—20
from Cherokee—53
from Townsend—40

3. Old Elkmont Town

Highlights: historic buildings, walking trails

The Elkmont area was once a logging boomtown and a bustling enclave of summer vacation homes. Today, the National Park Service has restored the Appalachian Clubhouse, Spence cabin and four other historic buildings that offer a glimpse into the summer resort era.

Elkmont also has a variety of easy-to-moderate hiking trails, including the Cucumber Gap loop (5.5 miles), Elkmont Self-guiding Nature Trail (0.8 mile roundtrip), Jakes Creek Falls (3.2 miles roundtrip) and Huskey Branch Falls (4.3 miles roundtrip). Little River Trail makes a pleasant streamside stroll.

Anglers have long frequented nearby Little River for its excellent trout fishing.

Mileage from Gatlinburg—7
from Townsend—15
from Cherokee—39

2. Cosby

Highlights: hiking, waterfall

Cosby features a large campground, picnic area, and plenty of hiking trails. The 4.2-mile roundtrip hike to Henwallow Falls is moderate in difficulty and extremely popular. The one-mile-long Cosby Self-guiding Nature Trail is a good way to stretch your legs and get acquainted with the area. Sutton Ridge Overlook and its impressive views are accessible from the Lower Mt. Cammerer Trail. It's 2.5 miles out and back.

For more ambitious hikers, the strenuous 10.4-mile roundtrip trek to the historic Mt. Cammerer Fire Tower is one of the better long day hikes in the Smokies.

Cosby Campground is generally one of the last campgrounds in the park to fill up. The picnic area includes a large covered pavilion that can be reserved in advance at recreation.gov.

4. Cataloochee Valley

Highlights: historic buildings, elk viewing, horse and hiking trails

From just about anywhere you start, the journey to Cataloochee is long and winding. The last four miles are on a curvy, one-lane gravel road. Once safely in the valley, however, you will find beauty and history abound.

Historic buildings include nicely preserved homes, a church, and even a school. Popular trails include the two-mile roundtrip walk to the Woody house on Rough Fork Trail and the 7.5-mile Boogerman Loop hike. The latter includes some difficult stream crossings.

During summer, the best times to view elk and other wildlife are early morning and evening.

Advance reservations via recreation.gov are required for Cataloochee Campground.

Mileage from Cherokee—39
from Gatlinburg—65
from Townsend—87

5. Deep Creek

Highlights: walking trails, waterfalls, mountain biking

The Deep Creek area is an off-the-beaten-path destination in the Great Smoky Mountains, celebrated for its rushing streams and waterfalls. Hikers enjoy the area because of the waterfalls and because there are several loop hikes to choose from. Mountain bikers can take advantage of one of the few park trails where bicycles are permitted.

Deep Creek area loop hikes include Juney Whank Falls (0.6 mile), Three Waterfalls Loop (2.4 miles), and Deep Creek-Indian Creek Loop (4.4 miles). Longer loop hikes are also available.

Bicycles are allowed on Deep Creek and Indian Creek trails to the points where the old roadbeds end and the trail treads begin.

Deep Creek Picnic Area is open year-round. The picnic pavilion can be reserved at Recreation.gov.

Mileage from Cherokee—14
from Gatlinburg—48
from Townsend—65

Words with a Ranger

continued from page 1

...adaptable of wildlife, as long as they can find suitable habitat, which we help to provide here in the Great Smoky Mountains. Many avian species are sensitive environmental indicators that can alert us to ecological disruption, often before it directly affects us.

Many migrating birds are triggered to travel by the length of the day rather than temperature or food availability. These birds arrive in our area at the same time each year, but the food they rely on may not be on the same schedule. Have the caterpillars they like to eat already emerged and pupated or is there enough other food for them to fatten back up and nest successfully?

A study of the Black-throated Blue Warbler done in New Hampshire shows this species is arriving from its winter grounds at the same time each year, but is adapting to changing conditions by going into nesting behavior right away. They aren't able to build up their fat reserves after their long migration because, if they did, there wouldn't be enough food for their chicks.

Through the AT Seasons (AT = Appalachian Trail) citizen science project, we encourage visitors to collect and enter data about avian patterns for the National Phenology Network (NPN). AT Seasons connects various parks and organizations that are actively monitoring seasonal changes in plants and animals along the Appalachian Trail, which goes through Great Smoky Mountains National Park.

Four bird species are the focus of the AT Seasons project with the NPN: Black-throated Blue Warbler, Black-throated Green Warbler, Winter Wren and Black-capped Chickadee. Each can be found by learning to recognize its call. The wren has a long complex call with many trills and chirps. The other three are easily recognized with a mnemonic (see story and sidebar on the front page).

PARK NEWS

Great Smoky Mountains National Park news briefs

All Taxa Biodiversity Inventory Discovers New Plants, Animals in Smokies

After 20 years of pursuing an All Taxa Biodiversity Inventory (ATBI), with taxonomists scouring the ridges and valleys of Great Smoky Mountains National Park in search of everything from birds to bryophytes to butterflies, the park is closing in on three major species discovery milestones:

- The 1,000th park species new to the science books
- The 10,000th species added to park lists
- The 20,000th species known to live in the park

"We are definitely going to hit the 1,000th species new to science mark in 2018," said Todd Witcher, executive director of Discover Life in America (DLIA). "We have several potential new species going through the vetting process right now."

The ATBI was launched in 1998 as an effort to identify every variety of plant and animal in the park. DLIA was chartered in 1998 to help make the ATBI a reality. The Smokies have long been renowned for their abundance and diversity of life, including some 1,600 species of flowering plants, 30 types of

Survey Shows Park's Firewood Policy is Working

New research by the Nature Conservancy indicates that the majority of campers in Great Smoky Mountains National Park are aware of the park's firewood regulations and are abiding by them. The rules, enacted in 2015, allow campers to bring only certified heat-treated firewood into the park.

Certified wood may be purchased at many businesses inside and outside the park. Visitors are also free to collect dead and down wood in the park for their campfires.

The firewood regulations are designed to prevent destructive, non-native insects like the emerald ash borer, Asian long-horned beetle and gypsy moth from invading the Smokies. These non-native insects have the potential to

salamanders and at least 1,862 butterflies and moths. Knowing what creatures reside in the park helps the National Park Service better respond to threats like air pollution, forest insects and diseases, and non-native species.

The organization uses mini grants and other incentives to persuade biologists from around the globe to spend time in the park collecting specimens, and later identifying what they found. New information is then logged into a massive database that not only shows what's here, but also reveals where in the park it has been reported and what other creatures are associated with it. The information is invaluable to park managers. Few if any of the world's other natural areas can boast such in-depth knowledge of their resident flora and fauna.

Going forward, DLIA will not only continue researching the Smokies, it will take the lessons it learned here and share them with other parks and sites worldwide. "We have signed a memorandum of understanding with the Xishuangbanna Tropical Botanical Garden in China to help them with

devastate millions of park trees. Other invasive forest pests like the hemlock woolly adelgid and balsam woolly adelgid have already caused catastrophic damage to certain areas of the Smokies.

Seventy percent of survey respondents said they agreed with the firewood policy and thought it was the right thing to do to protect trees. Eighty-four percent of campers surveyed said they were aware of the park regulations and 88 percent knew that transporting firewood spreads forest pests and diseases.

Firewood users spent an average of \$5.92 per bundle for wood purchased outside the park and around \$6.91 for wood purchased in the park. Dead and down wood gathered in the park is free.

their species inventory," Witcher said. In addition, DLIA is working with several sites in the U.S. like Big Thicket National Preserve, Oak Ridge Reservation, and Crane Hollow Nature Preserve to help them succeed with similar projects. In fact, the Smokies species inventory has helped spark a nationwide movement at sites—ranging from tiny nature centers to national forests—to take stock of their biological assets. The procedures pioneered by DLIA are serving as models for programs from Texas to Maine and have even led to a cooperative agreement with the E.O. Wilson Foundation's 'Half Earth' project.

As part of its educational mission, DLIA recruits legions of volunteers and interns to become 'citizen scientists' who help with the work. These participants gain not only an insider's look at the parks and preserves, they gain first hand knowledge of biology, field science and laboratory practices.

Funding for DLIA comes mostly from donations from individuals and institutions as well as facility support provided by the national park. To learn more, please visit DLIA.org.

GOT WOOD?

Go to Firewoodscout.org for a list of nearly 100 locations in and near the park where certified firewood may be purchased. This wood is certified to have been heat-treated to kill all wood-boring insects and their eggs.

Destruction to tree by emerald ash borer.

All the Stars in the Sky

With some of the darkest skies in the eastern United States, the Smokies provide a clear view of starlight for our enjoyment and for the benefit of wildlife

and frogs have eyes that are extremely sensitive to light. Prolonged exposure to bright lights can cause them to become disoriented and may affect their hormones, skin coloration, body temperature and reproduction.

Milky Way:

This is actually Earth's home galaxy, although most of its stars are thousands of light years away. The hundreds of billions of stars in this galaxy appear as a dim cloud in the summer sky. Look for it to the east near Cygnus and the Summer Triangle.

Big Dipper: One of the brightest and easiest to identify, this group of seven stars resembles a water dipper or perhaps a bear. Some Native Americans say the bowl of the dipper is a great bear and the handle is the hunters chasing the bear. Look for this one high in the northern sky.

Little Dipper: The outer lip of the Big Dipper points to the North Star (Polaris), which is the last and brightest star in the handle of the Little Dipper. If you need to get oriented, Polaris is due north all year-round.

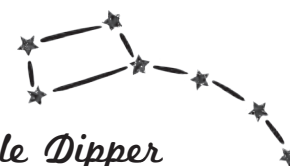
Summer Triangle: Three stars, Vega, Deneb and Altair make up the Summer Triangle. Look almost straight overhead

when facing south. Vega is one of the brightest stars in the summer sky.

Cygnus the Swan: Once you've found the Summer Triangle, look for Cygnus nearby. With a lot of imagination you can see a swan; or the distinctive shape that inspired the nickname "Northern Cross."



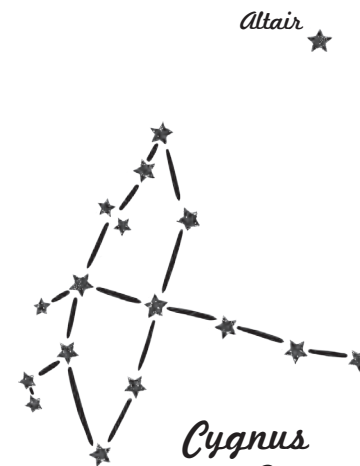
Big Dipper



Little Dipper



Summer Triangle



Cygnus the Swan

happen to have a pair of binoculars, the stars and planets become even more fascinating.

Close to half the animals living in the Smokies are nocturnal. These species depend on darkness to evade predators and find food. Migrating songbirds use the stars for navigation and may become confused near large cities or communications towers with warning lights. Amphibians like salamanders



The best time to view the Perseid meteor showers this year will be **August 11-13**. Watch for 50-60 meteors per hour!

In national parks like this one, natural darkness is a resource that is protected just like bears, salamanders and wildflowers are protected. The National Park Service works to preserve darkness for several reasons, including enjoyment by park visitors and benefits to wildlife.

For many people who live in large urban areas, the night sky is a dome of light without a single visible star. Fortunately, the Smokies have some of the darkest skies in the eastern U.S. On a clear, moonless night, if you step away from the lights and give your eyes a few minutes to adjust, amazing sights like the Milky Way, the Little Dipper and the summer triangle snap into view. If you

Image by Thomas McManus

19th Century Cherokee Clothing

Practical yet beautiful styles of dress blend time-tested tradition with new influences

In the early 1800s, when European-American settlers began trickling in to the fertile valleys of the Great Smoky Mountains, the Cherokee men and women they encountered dressed quite differently from the newcomers. The Cherokee were noted for their love of beauty in all things, and this passion was attractively reflected in the quality and ornamentation of their clothing.

Of course members of the far-flung Cherokee nation had been in close contact with European-Americans for more than two centuries by the early 1800s, especially in densely populated areas like coastal South Carolina. Consequently, there had already been a good deal of exchange of clothing styles and other customs between the peoples. For example, Davy Crockett's apparel undoubtedly reflected Cherokee influence, and the Cherokee adopted new materials like linen for shirts and wool for breechclouts in their wardrobe.

The early 19th century was therefore a time when the Cherokee were adapting to various Old World influences while maintaining traditions from their storied past. According to Barbara Duncan, education director of the Museum of the Cherokee Indian, "The Cherokee who lived in the mountains held onto their traditional clothing and other customs longer than the Cherokee living elsewhere."

Feathered Cape:

This type of outerwear could be short, just covering the shoulders, or a full-length gown worn for warmth. The feathers came from a wide variety of birds, including Wild Turkey, Swans, Cardinals, Ravens or woodpeckers. The feathers were secured to a base of cloth or special netting woven from plant fibers.

Garters and belts:

Often finger woven of dyed wool and beads. These accessories might also include plant fibers and hair from buffalo, bear or opossum.

Skirt: By the beginning of the 19th century, Cherokee women were making their traditional wraparound skirts from European materials like wool or cotton. The skirts fell just above or at the knee. Women decorated some skirts with ribbons and black and white beads. During this time period, Cherokee women also wore European style, ankle-length linen skirts.

Moccasins: Made from brain-tanned or smoke-tanned deerskin, Cherokee moccasins were distinguished by long flaps on their sides. They could be decorated with beads, ribbons, bells and porcupine quills. The wives of priests were said to have worn white moccasins dyed with kaolin.



Jewelry/Ornamentation:

Women wore up to two pierced earrings per ear, and perhaps a necklace made from glass or copper beads. Tattooing was thought to be common. Ornamentation for Cherokee women's long hair might have included feathers, silver and pieces of finger weaving.

Shirt/Jacket: Often made of linen or calico and fastened with breast buckles. Some were decorated with beads and trims and were sewn with or without sleeves. Typically these garments were long, covering the hips.

Leggings: Made from deer, elk or groundhog skin, these practical items reached from mid-thigh to the foot and made it possible for the wearer to run through thick briars and underbrush. Modern Cherokee profess they are warm in winter and cool in summer. General George Washington was so impressed by the functionality of leggings that he ordered hundreds of pairs for his troops. Leggings were attached to a belt with strings and could be decorated with lace, beads, copper and silver bells.

For more information on Cherokee clothing, visit the Museum of the Cherokee Indian in Cherokee, NC, and pick up a copy of Barbara Duncan's book Cherokee Clothing in the 1700s. Cherokeemuseum.org

Elevation Matters

Elevations in Great Smoky Mountains National Park range from around 875' at the mouth of Abrams Creek near Chilhowee Lake to 6,643' on top of Clingmans Dome (add another 45 feet if you are on top of the observation tower there).

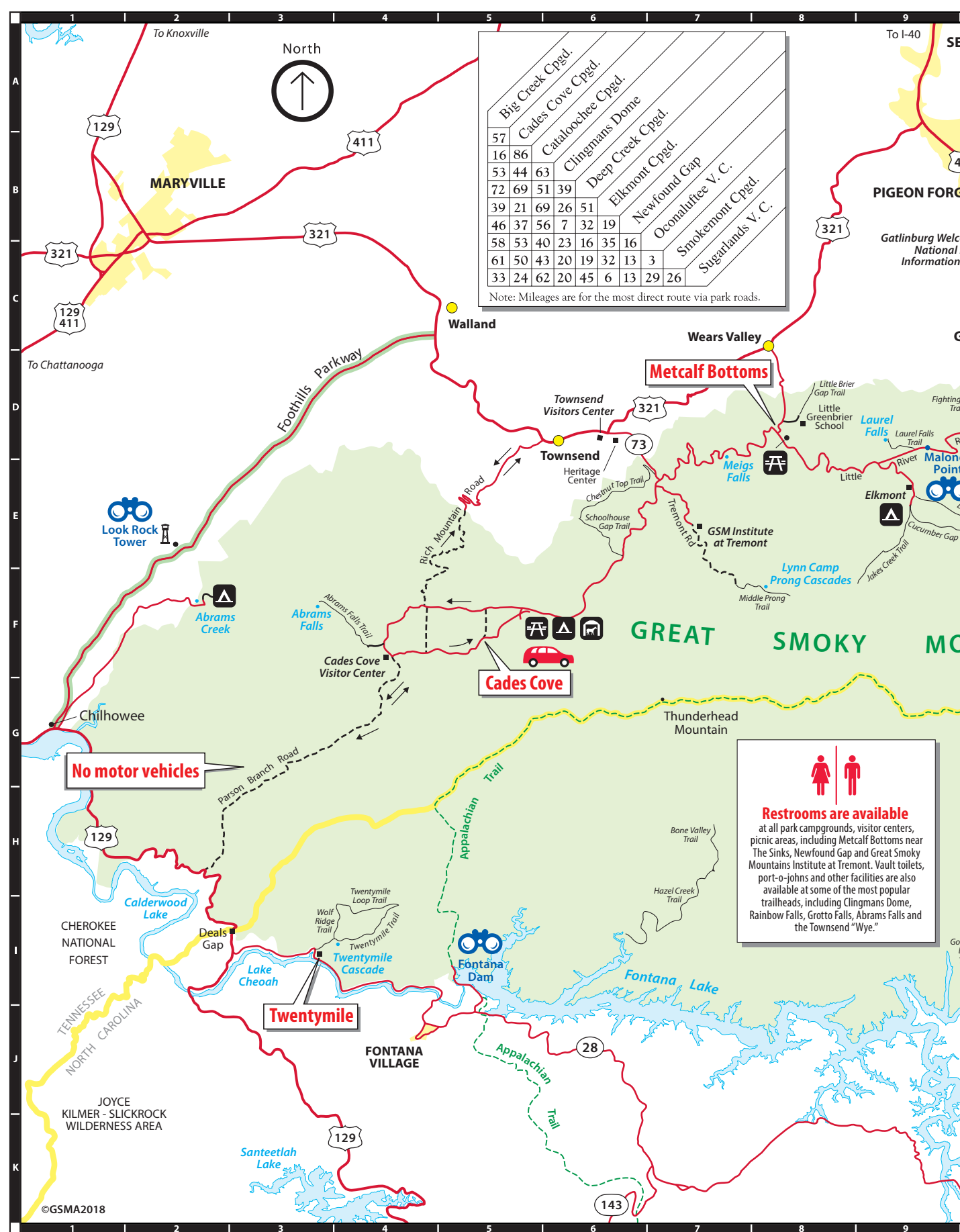
The higher you go in the park, the lower the air pressure. That's because air, like water, has weight. If you submerge your submarine to a depth of 1,000 feet, the weight of the water above you could threaten to crush your hull. For air, the higher you climb on a mountain, the less air you have weighing you down from above. Less weight or pressure means that air molecules are further apart, and since we measure temperature by the activity of air molecules, the higher we climb, the cooler it gets.

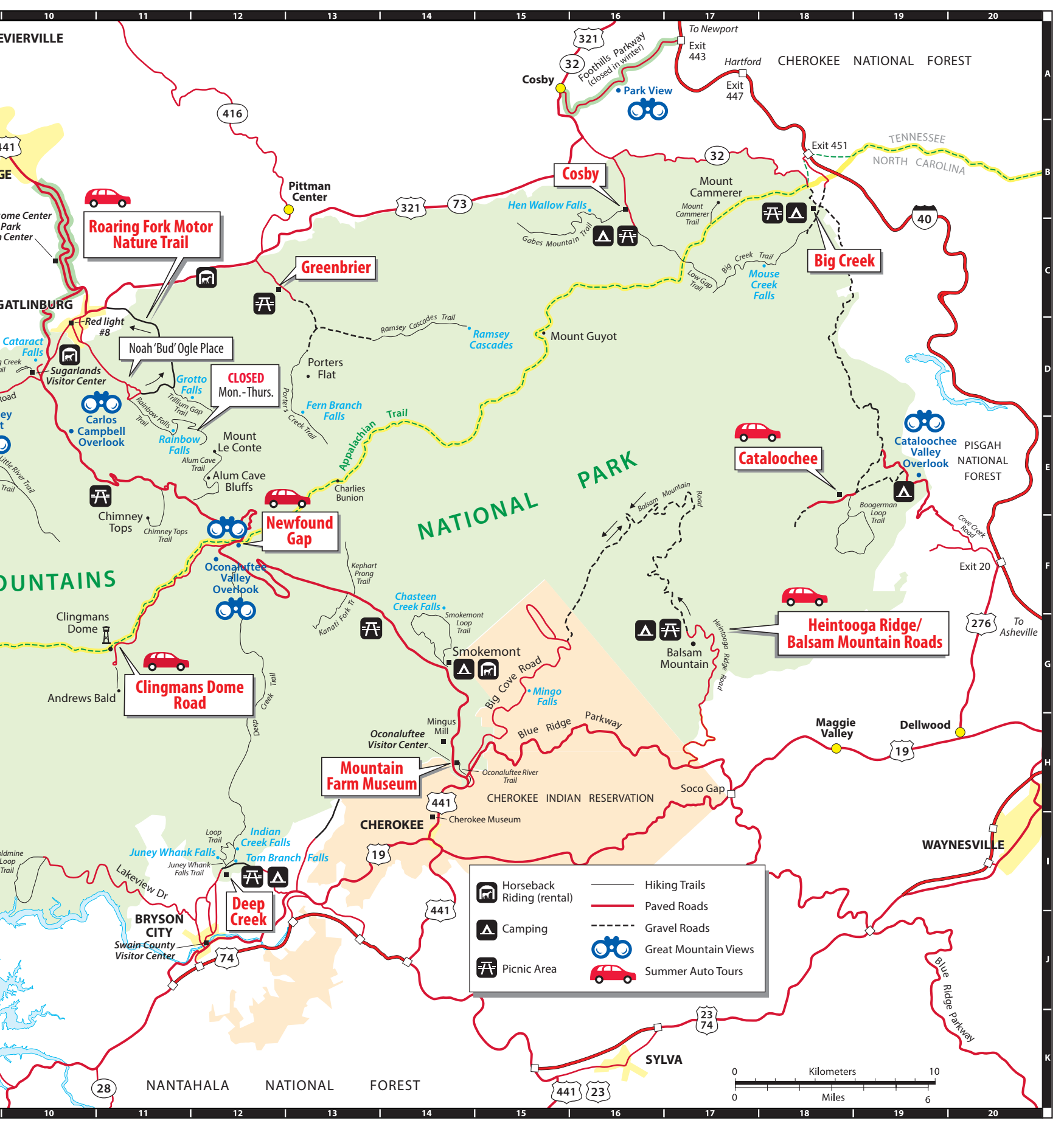
Want to check this out? Next time you're at Newfound Gap or Balsam Mountain Campground or Clingmans Dome, open the lid on a half-full bottle of water. Close it up and don't open it again until you are down the mountain and closer to sea level. When you reopen the bottle you'll hear a "whoosh" as the high elevation air inside the bottle equalizes with the more condensed air outside.

In the mountains, air temperature decreases about 3.5 degrees F for every 1,000 feet of elevation gain. So if you drive from Chilhowee Lake to Clingmans Dome parking area, then hike the half-mile trail to the summit, the temperature there should be around 20 degrees F cooler.

There are some other variables that impact elevation and temperature, including weather systems, humidity and inversions. The 3.5 degrees, however, is a good rule of thumb.

It also rains about 50 percent more in the mountains compared to the valleys. That's because as moist air is pushed up the slopes of a mountain, it is cooled by the decreasing air temperatures. This cooling causes the moist air to condense into clouds and possibly rain, snow or even sleet.





Roaring Fork Motor Nature Trail

Greenbrier

Big Creek

Newfound Gap

NATIONAL PARK

Cataloochee

**Heintooga Ridge/
Balsam Mountain Roads**

Clingmans Dome Road

Mountain Farm Museum

Deep Creek

Horseback Riding (rental)	Hiking Trails
Camping	Paved Roads
Picnic Area	Gravel Roads
	Great Mountain Views
	Summer Auto Tours



New 15-Mile Section of Foothills Parkway to Open This Year

A unique segment of the scenic roadway gets its grand opening!



The Foothills Parkway provides some of the most breathtaking views of the Great Smoky Mountains. You can find up-to-date road closure information at nps.gov/grsm. Image by Gary Wilson

The ‘Missing Link,’ a 1.5-mile stretch of the Foothills Parkway between Walland and Wears Valley, TN, is about to be found. And from the looks of it, this unique segment of scenic roadway will be discovered by many, many happy visitors to the Great Smoky Mountains.

“I think it’s the most remarkable one-and-a-half miles of road in the entire national park system,” says Dana Soehn, management assistant and public affairs officer for Great Smoky Mountains National Park. That’s high praise, especially when you consider other legendary national park roads like the ‘Going to the Sun’ Highway in Glacier or Trail Ridge Road in Rocky Mountain.

The ‘Missing Link’ became infamous in 1989 when construction of the treacherous segment was halted due to erosion and retaining wall failures. Work didn’t resume until the late 1990s when a new, highly ambitious plan was hatched to complete the span not with a standard roadway, but with a series of cantilevered concrete bridges that minimize environmental damage and offer unfettered views of the Smokies’ highest peaks.

Eye-popping views were a primary goal when the Foothills Parkway was conceived back in 1939. Because views of mountains are usually better from a distance, the parkway was routed outside Great Smoky Mountains National Park, through the two-to-three-thousand-foot-high foothills that conveniently front the

Great Smoky Mountains like bleachers. Early parkway proponents also foresaw a need for alternate routes to relieve traffic congestion on the park’s busy main roads.

When the Walland to Wears Valley section of the Foothills Parkway opens later this year, it will connect with the 17-mile segment between U.S. Highway 129 at Chilhowee Lake and U.S. Highway 321 in Walland that was opened in 1968. The result will be 32 miles of continuous parkway—without billboards, utility poles or commercial traffic—offering stunning views of the Smokies and Tennessee Valley.

Paving will continue on the Walland to Wears Valley section through this summer and into the fall. Road striping, signage and some final touches to scenic overlooks will follow. Visit nps.gov/grsm

for information on the official opening date.

Once the new section is finished, planners will be free to turn their sights to the remainder of the uncompleted Foothills Parkway, a 34-mile section between Wears Valley and Cosby. The necessary land for this piece of parkway has all been acquired, though no construction has begun. The eastern end of the parkway, the six-mile segment between Cosby and Interstate 40, was opened in 1966.

Foothills Parkway Timeline

1939: Regional Planning Commission proposal for Foothills Parkway gains National Park Service support

1944: Foothills Parkway authorized by Congress

1947: State of Tennessee begins acquiring lands for parkway

1966: Cosby to I-40 section open

1968: Chilhowee Lake to Walland section open

1979: All land acquisition completed. All land donated by state to National Park Service

1989: Construction on Wears Valley section halted due to wall failures and environmental concerns

1996: Environmental Assessment completed. Park Service chooses to proceed with series of bridges and cut/fills to solve Missing Link

2017: Contract awarded to pave final 15-mile section between Walland and Wears Valley

Late 2018: Walland to Wears Valley section slated to open to public.

2019-????: Future of 24-mile section between Wears Valley and Cosby remains uncertain.

Although the Foothills Parkway exists outside park boundaries, it is managed by the National Park Service just like lands inside the park.



How Many Junior Ranger Badges Have You Earned?



National Park lovers Ella and Jeylan Olmez proudly display all their Jr. Ranger badges.

Image by Inal Olmez

According to an article in the Summer issue of *National Parks* magazine, 13-year-old Marie Young of Texas has amassed 175 Junior Ranger badges from trips to some 200 National Park Service sites. Andrew, Cara, and Rachel Curren of Idaho have earned 125. How many of our nation's 417 national parks, seashores, monuments, historical sites and recreation areas will you visit during your lifetime? How many Junior Ranger badges will you bring home?

Ready to start? Great Smoky Mountains National Park offers an award-winning Junior Ranger program where kids 5-12 years old can have fun,

learn about the park and get an official badge. Drop by any park visitor center, purchase a Junior Ranger booklet specifically designed for your age group (5-6, 7-8, 9-10, 11-12) and get going. The requirements include:

- Completing the activities in your Junior Ranger booklet
- Attending a ranger-led program in the park (don't forget to have the ranger sign your booklet)
- Helping the park by picking up a bag of litter
- Having a ranger check your booklet and receiving your badge

Please see below for a list of special Junior Ranger programs.

FREE, FUN THINGS TO DO

Programs and activities in Great Smoky Mountains National Park August 12 - September 15, 2018

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 10:30 a.m.	Sugarlands Visitor Center Patio	1.5 hours Easy
Junior Ranger: Porch Talk: Did you know that the Smokies is one of the most 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
Branching Out: The Smokies are home to more than 130 species of trees. Explore the dramatic forest and find out what the trees can tell us about their ecosystem.	Sundays 10 a.m.	Elkmont Nature Trail	1.5 hours Easy
Nature's Narrative: The forest is full of stories if you'll only stop to listen. Learn about the area and discover signs of the past on this moderate, 3/4-mile loop hike.	Sundays 1:30 p.m.	Cove Hardwood Nature Trail (inside Chimneys Picnic Area)	1 hour Moderate
Little River Evening Amble: Join a ranger at twilight to explore intriguing transformations within the Smokies as daylight wanes to darkness.	Mondays 8 p.m.	Little River Trailhead	1 hour Easy
Sugarlands Night Hike: Challenge your senses and experience the mystery of the Smokies after dark. <i>Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.</i>	Tuesdays 8:30 p.m.	Sugarlands Visitor Center Patio	1 hour Easy
Junior Ranger: Aw Shucks!: Come and experience the art of making a simple cornshuck doll while gaining historical insight of the diversity of corn in the region. <i>Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.</i>	Wednesdays 1 p.m.	Sugarlands Visitor Center Patio	45 minutes Easy
Coffee with a Ranger: Start your morning with a ranger and a cup of joe to hear what's happening in the park and plan your day's activities.	Thursdays & Saturdays 8 a.m.	Locations vary at coffee shops throughout Gatlinburg, TN	1 hour Easy
Islands in the Sky: Soak in sweeping views near the summit of the Smokies' highest peak as you learn about this unique environment, discover some of the park's most influential people, or hear stories behind its place names. Topics vary but you're sure to be inspired by the stories behind the scenery.	Fridays & Sundays thru September 1, then Fridays only 10 a.m.	Viewing area below Clingmans Dome Visitor Center	45 minutes Easy

SUGARLANDS/ELKMONT/COSBY AREA (CONTINUED)

WHEN?


MEETING LOCATION

DURATION/DIFFICULTY

Celebrating Cosby: Yesterday, Today and Tomorrow: Join rangers and community members in celebrating all that Cosby has to offer. Join our oldest and youngest generations as they come together in these community programs to celebrate the rich cultural and natural history of Cosby. Program topics vary ranging from mountain music, clogging, and storytelling to cooking, moonshine and more.

Fridays thru August 24
7 p.m.


Cosby Campground

1 to 1.5 hours
Easy


Evening Campfire: Join a ranger for a National Park Service tradition—the evening campfire program. Topics vary but you're guaranteed to learn something new about the Smokies!

Fridays & Saturdays thru Sept. 1, then Sat. only
Check at Sugarlands VC or Campground Office for times


Elkmont Campground

45 minutes
Easy


Junior Ranger: Art in the Park: Art has a long history in our national parks and the works of artists have captured the imaginations of the public, spurring them to preserve these lands. Get your creative juices pumping and develop your own park-inspired masterpieces. *Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.*

Saturdays thru September 1
10 a.m.

Sugarlands Visitor Center Patio

1.5 hours
Easy


METCALF BOTTOMS AREA

A Walk in the Brier: Come take a hike and learn about Southern Appalachian heritage as we make our way through the brier to the Walker Sisters Cabin. 2.2-mile roundtrip.

Mondays thru September 1
10 a.m.

Little Greenbrier School

1.5 hours
Moderate

Junior Ranger: 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. *Please arrive 15 minutes before program start; space is limited.*

Tuesdays
11 a.m. & 2 p.m.

Little Greenbrier School

1 hour
Easy

Junior Ranger: Stream Splashers: Roll up your pants and wade through a mountain stream to look for mayflies, stoneflies, dragonflies, and other aquatic critters.

Tuesdays & Thursdays
2 p.m.

Metcalf Bottoms Picnic Area
(Near entrance)

1.5 hours
Easy


CADES COVE AREA

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.

John P. Cable Mill: Experience what it was like to grind corn into meal at the gristmill. *Cable Mill area is halfway around the loop road.*

Daily
9 p.m. – 5 p.m.


Cable Mill Area

10 minutes
Easy


Junior Ranger Program: Join a park ranger for a hands-on exploration of the Smokies. Participation counts towards credit for earning a Junior Ranger badge. *Visitor Center is halfway around the loop road.*

Saturdays & Sundays
1 p.m.


Cades Cove Visitor Center/
Cable Mill Area

45 minutes
Easy


WILD by Design: A talk and hands-on demonstration about the wild things in the park. *Visitor Center is halfway around the loop road.*

Saturdays & Sundays
2:30 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.

Tuesdays
11 a.m., 12 p.m. & 1 p.m.

Cades Cove Primitive
Baptist Church

30 minutes
Easy

Junior Ranger: Stream Splashers: Roll up your pants and wade through a mountain stream to look for mayflies, stoneflies, dragonflies, and other aquatic critters.

Tuesdays & Thursdays
2 p.m.

Metcalf Bottoms Picnic Area
(Near entrance)


1.5 hours
Easy

OCONALUFTEE AREA

Coffee with a Ranger: Join a park ranger for a cup of coffee and find out what's happening in the park! Coffee provided. Bring a cup if you have one. Topics may vary based on visitor interests and things going on in the park.

Sundays
10 a.m.

Oconaluftee Visitor
Center Porch

1 hour
Easy


A Walk Back in Time: Kephart Prong Hike: The Civilian Conservation Corp helped build this park. Learn about the major impact the CCC had on the development of the Great Smoky Mountains National Park while we explore the remains of 411's CCC camp. Discover what signs are still visible and what life was like.

Sundays
1 p.m.

Kephart Prong Trail

1 hour
Easy, 1-mile walk

Junior Ranger: Feeding the Pigs: Join a park ranger and help feed the pigs at the Mountain Farm Museum. Learn what they eat and how they are cared for during their time in the Smokies.

Daily: Sunday-Thursday
5:30 p.m.


Mountain Farm Museum/
Davis Queen House

30 minutes
Easy

Seasons of the Elk: Join a ranger and learn about the largest animal in the park. Learn about their characteristics, seasonal behaviors and park regulations so you can have a more positive viewing experience.

Mondays
10:30 a.m.

Oconaluftee Visitor
Center Porch

40 minutes
Easy


OCONALUFTEE AREA

Voices from the Past: Independence and personal liberty are two traits of the homesteaders and trailblazers who tried to the wildness of these mountains. Join a Ranger and hear tales and exploits of some of these rugged individuals.

Down on the Farm: Walk down to the Mountain Farm Museum and see what pastime settlers may have been engaged in such as gardening, woodworking, or other endeavors. Activities vary.

Junior Ranger: Go out on a Limb, Branch Out: Sometimes we miss the trees for the forest, but here is a chance to change how you see the Smokies. Learn to use an identification key and clues to name some common trees.

Junior Ranger: Mammal Mania: Otters and beavers and bears, oh my! Join a ranger for a hands-on discovery of mammals in the park.

Long Live the Queen! Join a park ranger to get the buzz on honeybees, taste a sample of nature's pure food, and size up beehives from then and now.

Smokemont Evening Campfire Program: Join a park 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. Bring a chair or blanket to sit on.

Junior Ranger: Stream Splashers: Roll up your pants and wade through a mountain stream to look for mayflies, stoneflies, dragonflies and other aquatic critters. *Be prepared to get wet. Closed-toed shoes recommended.*

WHEN?

MEETING LOCATION

DURATION/DIFFICULTY

Mondays
2 p.m.

Oconaluftee Visitor Center Porch



40 minutes
Easy

Tuesdays
10:30 a.m.

Mountain Farm Museum



1 hour
Easy

Tuesdays
2 p.m.

Oconaluftee River Trailhead/
adjacent to the
Oconaluftee Visitor Center



1 hour
Easy

Wednesdays
11 a.m.

Oconaluftee Visitor Center Porch



30 minutes
Easy

**Fridays
thru September 7**
11:30 am

Oconaluftee Visitor Center Porch



30 minutes
Easy

**Fridays & Saturdays
thru September 8**
7 p.m.

Smokemont Campground
Between C and D Loops



1 hour
Easy

**Saturdays
thru September 8**
2 p.m.

Oconaluftee River/adjacent to
the Mountain Farm Museum

1.5 hours
Easy

CATALOOCHEE AREA

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!

Return of the Elk: Come enjoy a guided hike to the elk acclimation pen and explore how, when and why the elk were returned to the Smokies.

**Saturdays
Aug. 18 & Sept. 8**
3:30 p.m.
Sundays
5:30 p.m.

Palmer House
Cataloochee Valley



45 minutes
Easy

**Tuesdays
August 21 & 28**
5 p.m.

Rough Fork Trailhead/
Cataloochee Valley

1.5 hours
Moderate

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.

Honored Places: Come along as we visit the final resting places of our Smokies' ancestors. Learn about the time honored traditions of cemeteries in the park. *Limited to 25 participants. Call 865.436.1291 up to 4 days in advance to make reservations.*

Science at Sugarlands: Join a scientist on the third Friday of the month to learn about and engage in ongoing scientific research happening inside Great Smoky Mountains National Park. Topics vary each month. August 17: *The Problems & Solutions with our Hemlocks*; September 21: *Butterflies and Caterpillars in the Smokies*.

Cades Cove Star Party with the Smoky Mountain Astronomical Society: Escape the city lights and observe the heavenly objects of the night sky. Join the rangers for an evening of viewing stars with equipment and instruction provided by the SMAS. *Orientation shelter is at the beginning of the loop road. Event is weather permitting and will be canceled in case of rain and/or heavy clouds. Call 865.448.4122 for updates. Bring a jacket, red-covered flashlight and comfortable walking shoes.*

Mountain Life Festival: Join park staff and volunteers as we celebrate the fall harvest at the Mountain Farm Museum.

A Great Ranging Skill: Orienteering! Rangers need many skills to be good at their jobs, but everyone wants to find their way home after a long day in the woods. Learning the basics of reading a compass will help you get home too after a great day in the forest.

**Saturdays
Aug. 18 & Sept. 1**
1 p.m.

Oconaluftee Visitor Center Porch



2 hours
Easy

Tuesday, August 28
9:30 a.m.

Location Varies

2 hours
Easy to moderate

**Fridays
August 17 &
September 21**
1 p.m.

Sugarlands Visitor Center

2 hours
Easy

Saturday, September 15
7:30 p.m.

Cades Cove Orientation Shelter

1.5 – 2 hours
Easy, 1-mile walk

Saturday, September 15
10 a.m.

Mountain Farm Museum



Ongoing 6 hours
Easy

**Saturdays
Aug. 11 & 25, Sept. 8**
1 p.m.

Oconaluftee Visitor Center/
Under the maple tree

1 hour
Easy

Great Smoky Mountain Association

Since 1953, Great Smoky Mountains Association has supported the educational, scientific and historical efforts of the National Park Service through cash donations and in-kind services. By the end of 2018



alone, the association will have provided more than \$2 million in assistance that includes saving hemlock trees, living history demonstrations, environmental education programs, historic preservation, and salaries for wildlife personnel.

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 semi-annual, full-color magazine *Smokies Life*
- Digital access to the award-winning quarterly park newspaper, *Smokies Guide*, and the association's newsletter, *The Bearpaw*
- A 15-20% discount on books, music, gifts and other products sold at park visitor centers and at our web store

• Special GSMA "Hiking 101" outings to Twentymile Loop, Porters Creek, Gregory Bald, Boogerman Trail, Charlies Bunion, cemeteries, and more. All hikes are led by knowledgeable staff who love to share the park with others. Groups are limited to 20 people. Also this year, ask us about Gear Fest programs and special gear discounts.

Join today using the coupon to the right, visit SmokiesInformation.org, or call us at 888.898.9102 x349. 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. Programs are offered by the Smoky Mountain Field School and include Mt. Le Conte overnights and workshops on wildlife, edible plants, wildflower photography, animal tracking, bird watching, salamanders and mountain cooking. One-day programs start at as little as \$79. Contact: 865.974.0150 or visit smfs.utk.edu.

Great Smoky Mountains Institute at Tremont

Great Smoky Mountains Institute at Tremont provides residential environmental education programs in Great Smoky Mountains National Park. Up to 5,000 students and adults annually attend

GREAT SMOKY MOUNTAINS INSTITUTE AT TREMONT

workshops and school programs at the Institute. Tremont's adult workshops include birding, backpacking, environmental education, teacher escapes, naturalist weekends and photography. GSMI at Tremont also offers a variety of summer youth camps in the national park lasting from 6-11 days and starting at \$589. Fees include meals, lodging and most equipment. Upcoming offerings include Discovery Camp (ages 9-12), Wilderness Adventure Trek, Girls in Science (ages 12-15), and Teen High Adventure (ages 13-17). Contact 865.448.6709 or visit gsmit.org.

Discover Life in America

The Smokies are known for their biodiversity and DLIA formed 20 years ago to identify every variety of plant and animal in the park. The organization involves leading biologists from around the globe in collecting specimens in the park and identifying what they found. The



information is then logged into a database that shows what's here, where in the park it has been reported and what other creatures are associated with it.

DLIA recruits legions of volunteers and interns to become 'citizen scientists' who help with the work. These participants get an insider's look at the park, as well as firsthand knowledge of biology, field science and laboratory practices. Funding for DLIA comes mostly from donations from individuals and institutions as well as facility support provided by the national park. To learn more, visit DLIA.org.

Friends of the Smokies

Friends of Great Smoky Mountains National Park is a nonprofit organization that assists the National Park Service by raising funds and public awareness and providing volunteers for park projects.

Since 1993, Friends has raised more than \$60 million for park projects and programs.

These donations help:

- protect elk, bear, brook trout and other wildlife
- improve trails, campsites and backcountry shelters
- support educational programs for school children
- improve visitor facilities
- fund special educational services

like the park movie

• preserve log cabins and other historic structures

Your donation can help make these projects a reality.

Put a few coins or a few dollars in one of the donation boxes located at visitor centers, roadsides and other locations around the park. Buy the Smokies license plate for your car (available in Tennessee and North Carolina).



However you choose to give, your donation will really help protect the Great Smoky Mountains for many years to come! Call Friends of the Smokies at 865.932.4794 or 800.845.5665, or visit friendsofthesmokies.org.



Dogwoods blooming at Carter Shields cabin. Image by Bill Lea

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

Moving Rocks Harms Aquatic Wildlife!

Tips from the insiders on how to treat the park

PARK

Etiquette



Social media is a driver of rock cairns. People see photos of these creations online or see them in the stream and want to build their own.

Building a rock dam can take time, and becomes a family affair with children collecting small rocks and adults moving huge boulders (the ones where hellbenders, our

Visitors may wade in streams and enjoy the water without altering the habitat. Image by Cathy Hakase
Illustration by Emma DuFort

largest salamanders, nest). Building a rock dam can be analogous to building sand castles at the beach; it's something to do other than just stare at the water. Rock dams are also built to provide a swimming hole for children. Rock channels are built almost solely for the purpose of deepening the stream and increasing the speed of the water to make for better tubing.

Q: *What are the main problems this behavior causes?*

A: It detracts from wilderness character. Many people visit the Smokies to escape the modern world; rock cairns, dams and channels are evidence of human disturbance. It also impacts aquatic life such as Eastern Hellbenders, Endangered Smoky Mountain Madtoms and Citico Darters. Many salamander and fish species lay their eggs under rocks of various sizes. The removal or movement of these rocks can disrupt breeding behavior, and can completely destroy the nest and eggs of both salamanders and fish. The temperature, flow and dissolved oxygen is altered, completely changing the habitat and the aquatic life therein. Some species of aquatic insects are immobile and die once removed from the stream.

Q: *What can our readers do if they see someone making one of these rock stacks?*

A: Share positive messaging on how to protect aquatic life through their social media outlets. Parents can encourage their children to respect our streams and leave no trace.



Salamanders and other aquatic animals make their homes under rocks of various sizes. Moving these rocks is like rearranging their living rooms, and can completely destroy their nests and eggs.

The sizzling temperatures and humidity of late summer and early fall often drive visitors to seek refuge in the cool waters of the Smokies' streams and other waterways. It's important to realize that these areas are home to a myriad of wild animals. We talked with Park Ranger Julianne Geleynse about the importance of keeping these habitats undisturbed.

Q: *Stacked rocks or what some call "cairns" are sometimes seen in the park's streams and creeks, along with channels and rock dams. When did this first become a trend?*

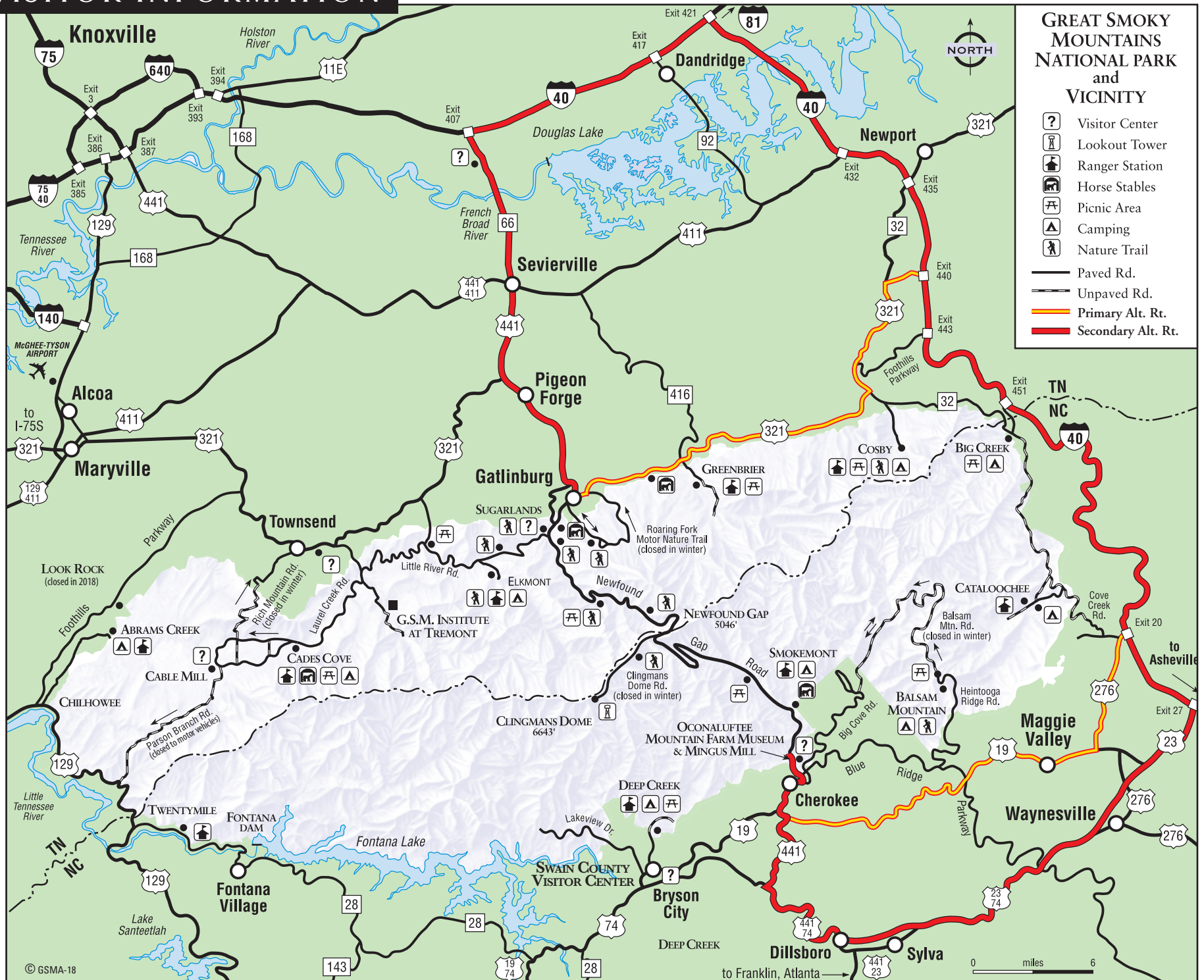
A: Channels started to become more prominent starting in the '70s as tubing became a popular stream activity in the area. Rock dams have been ongoing throughout park history, but as visitation has increased the problem has been exacerbated. The cairns have become more popular over the last five years.

Q: *Why do you think people do this?*

A: Rock cairns can represent art, balance or Zen and are considered to be quite beautiful. They are also considered a challenge requiring skill; building them gives people something to do to pass the time.

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.