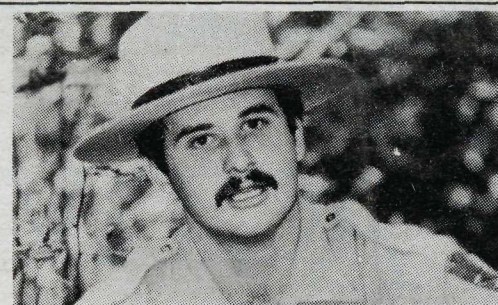




# SMOKIES GUIDE



SCHEDULE OF RANGER-LED PROGRAMS PAGES 6-7

THE OFFICIAL NEWSPAPER OF GREAT SMOKY MOUNTAINS NATIONAL PARK • SPRING 1992



A short walk will let you really enjoy the park's many wildflowers.

## Short Walks and Hikes for Wildflower Watchers

WITH OVER 1,600 species of flowering plants, Great Smoky Mountains National Park has a greater variety of wildflowers than any other national park in North America.

Lots of rainfall, mild temperatures, and a range of elevations from 850 feet to 6,642 feet are the main reasons for such plant diversity. Also, the Smokies were never glaciated or submerged by inland seas. Plants have had millions of years to flourish and diversify.

The peak of spring woodland wildflower blooming usually occurs in mid- to late April. Flowering shrubs like rhododendron and mountain laurel bloom from May through July (see page 9).

Listed here are a few of the best wildflower trails, but there are many more. Check at a visitor center for further information.

### APRIL

#### LITTLE RIVER TRAIL

Starts at the Little River trailhead upstream from Elkmont Campground. The first two miles are good.

#### PORTERS CREEK TRAIL

Starts in the Greenbrier area. The first three miles are good.

#### KANATI FORK TRAIL

Off the Newfound Gap Road, 7.6 miles north of Oconaluftee Visitor Center. The first two miles are good.

### MAY

#### THOMAS DIVIDE TRAIL

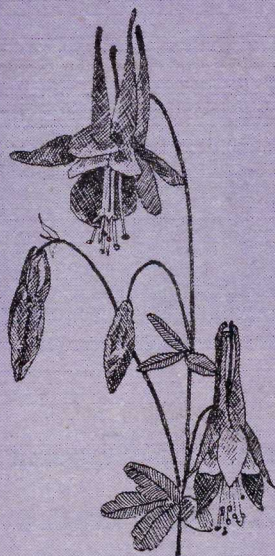
Starts off the Newfound Gap Road, between Oconaluftee Visitor Center and Newfound Gap. The first 1.5 miles are good.

#### APPALACHIAN TRAIL

A good section is between Newfound Gap and Indian Gap. Four miles roundtrip.

#### HEN WALLOW FALLS TRAIL

Starts near Cosby Campground. Four miles roundtrip.



### C O L U M B I N E

This remarkably beautiful,

bright red wildflower

blooms from April through

May in the Smokies. It is

most common at elevations

below 2,500 feet, but may

be found up to 5,000.

Along the Little River Road

is a good place to look for it.



## The Flower Poachers

SOME POACHERS ARE IN it for the money. Others simply want a few new flowers for their garden. All have become a serious threat to native wildflowers in the Great Smoky Mountains.

Perhaps the plant hit hardest by profit-motivated poachers is ginseng. This once-abundant wildflower is now rare throughout most of its range. It is coveted by several Oriental societies for its perceived medicinal properties. Harvesting is heavily regulated in the United States and strictly prohibited in national parks.

During 1991 in the Smokies, eight persons were arrested or ticketed for digging ginseng in the park and 1,922 roots were confiscated. "We take plant theft very seriously," says Chief Ranger Jason Houck, "Plant protection is a part of every ranger's duties."

Some of the park's most spectacular wildflowers receive the heaviest poaching pressure. Lady's slipper orchids, trilliums, Jack-in-the-pulpits, trout-lilies, Dutchman's-breeches, and bloodroot are stolen for home gardens as well as commercial sale through garden centers and mail-order catalogs.

All of these plants are very difficult to grow from seeds and so are usually gathered from the wild. In Michigan, a couple was known to have dug over 100,000 lady's slipper orchids annually for commercial sale. Sadly, most



photo by Kent & Donna Damm

Bloodroot is often a victim.

of these plants die in home gardens because they lack the fungus associations developed in the wild.

Research on wildflower poaching is just getting started in the Smokies, but the preliminaries are not encouraging. A study plot of lady's slipper orchids in a moderately visited area of the park dropped from 204 flowers in 1985 to 14 in 1990. Poaching may have been a major cause of the decline.

According to the park's vegetation management division, about 10% of the park's native flowering plants are classified as rare by the states of Tennessee, North Carolina, or the federal government. A similar percentage of native plants are listed as rare nationwide.

### WHAT CAN YOU DO?

- Don't pick or dig flowers in the park.
- Don't buy lady's slipper orchids or trilliums which can not be raised from seeds (they're taken from the wild).
- Do report suspicious activities to rangers (615) 436-1200.





# ACTIVITIES TO ENJOY



## SMOKIES GUIDE



*Smokies Guide* is produced by Great Smoky Mountains Natural History Association in cooperation with the National Park Service. The association is a non-profit organization which supports the educational and scientific programs of the national park. For information on our publications and memberships, please contact us at 115 Park Headquarters Road, Gatlinburg, TN 37738 (615) 436-7318.

Steve Kemp is the contributing editor of *Smokies Guide*.

Printed on Recycled Newsprint. ♻️

photo by David Higgins



A park trail map may be purchased at visitor centers for 50¢.

## Walking & Hiking

Some of the most beautiful forests, mountains, and streams on earth await those who are willing to leave their cars and take a short stroll into this vast preserve. The park boasts over 800 miles of trails that provide opportunities from ten minute saunters on Quiet Walkways to week-long adventures.

QUIET WALKWAYS provide short walks on easy trails. They are located throughout the park and are a great sampler of the park's scenery. Watch for the signs.

SELF-GUIDING NATURE TRAILS are ideal places to explore the Smokies' forests and learn about the area's rich natural and cultural heritage. Numbered stakes are keyed to leaflets that describe points of interest along the trail. Nature trails are marked on the map on page 12 and are listed below with roundtrip mileages. SMOKEMONT (3/4 mile) Starts at Smokemont Campground. SPRUCE-FIR (1/2 mile) Starts on Clingmans Dome Road, 4 miles from Newfound Gap. ALUM CAVE BLUFFS (5 miles) Starts at Alum Cave

trailhead on the Newfound Gap Road.

COVE HARDWOOD (3/4 mile) Starts at entrance to Chimney Tops Picnic Area on the Newfound Gap Road. SUGARLANDS: (1 mile) Starts near Sugarlands Visitor Center.

ELKMONT (3/4 mile) Starts from the parking area opposite Elkmont Campground.

LAUREL FALLS (2 1/2 miles) Starts on the Little River Road, 3 miles west of Sugarlands Visitor Center.

CADES COVE (1/2 mile) Starts 1/2 mile from the Cable Mill junction on the Cades Cove Loop Road.

NOAH "BUD" OGLE (3/4 mile) Starts on the Cherokee Orchard Road, 3 miles south of Gatlinburg via Airport Road.

COSBY (1 mile) Starts near the amphitheater in Cosby Campground.

BACKCOUNTRY CAMPERS are required to have a backcountry permit. These may be obtained free of charge from any park ranger station, campground, or at Oconaluftee and Sugarlands visitor centers. Reservations are required for some sites.

## Camping

The National Park Service maintains developed campgrounds at 10 locations in the park. There are no showers or trailer hookups. Disposal stations for trailer holding tanks are located at Smokemont, Cades Cove, and Cosby campgrounds, and across the road from Sugarlands Visitor Center. (The Sugarlands station opens in mid-April.)

Campsites at Elkmont, Smokemont, and Cades Cove may be reserved by calling 1-800-365-CAMP. Reservations are only accepted for May 15-October 30.

All other campgrounds operate on a first-come, first-serve basis. Listed below are opening dates, numbers of campsites, elevations, and fees per night for all campgrounds in the national park. ABRAMS CREEK Opens April 6, 16 sites, elev. 1,125', \$6

BALSAM MOUNTAIN Opens May 15, 45 sites, elev. 5,310', \$8

BIG CREEK Opens April 6, 12 sites, elev. 1,700', \$6

CADES COVE Open year-round, 161 sites, elev. 1,807', \$8 before May 15, then \$11 through October

CATALOOCHEE Opens April 6, 27 sites, elev. 2,610', \$6

COSBY Opens April 6, 174 sites, elev. 2,459', \$8

DEEP CREEK Opens March 27, 122 sites, elev. 1,800', \$8

ELKMONT Open year-round, 218 sites, elev. 2,150', \$8 before May 15, then \$11 through October

LOOK ROCK Opens May 22, 92 sites, elev. 2,600', \$8

SMOKEMONT Open year-round, 140 sites, elev. 2,198', \$8 before May 15, then \$11 through October

## Fishing

Fishing is permitted year-round in open park waters from sunrise to sunset. A Tennessee or North Carolina fishing license is required. Either state license is valid throughout the park. Licenses may be purchased in nearby towns.

Fishing regulations differ from area to area. A complete list of all rules is available at any visitor center or ranger station. Possession of brook trout is prohibited.

photo by David Higgins



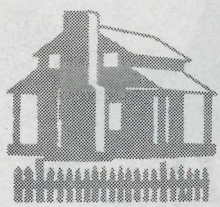
Bicyclists can view historic buildings in Cades Cove.

## Bicycling

Although most park roads are unsuitable for bicyclists, two-wheeling is a great way to see Cataloochee and Cades Cove. To provide an opportunity for leisurely biking around Cades Cove, the 11-mile loop drive will be closed to automobile traffic on Saturday mornings until 10 a.m. from May 9 through September 19.

Helmets are strongly recommended for riding in the park. Bicycles may be rented beginning April 4 from the Cades Cove campground store. Bicycles are prohibited on park trails.





# PLACES TO VISIT



## Destinations

All destinations are shown on the map on the back page of this newspaper.

### CADES COVE

An 11-mile loop road takes you past historic cabins, churches, barns, and a grist mill. This is a good place for wildlife viewing, especially in the mornings and evenings. There is a visitor center at the Cable Mill area with daily ranger-led tours and activities.

### NEWFOUND GAP ROAD

A 29-mile mountain road between Gatlinburg, TN and Cherokee, NC. Newfound Gap, 5,048', is located approximately midway between the two towns. This route offers mountain views, varied forest types, and access to the Clingmans Dome Road.

### CLINGMANS DOME ROAD

This seven-mile road winds through the spruce-fir forest at the park's highest elevations. A steep, 1/2-mile, paved trail at road's end leads to Clingmans Dome, the highest peak in the Smoky Mountains. During clear weather there are good views from the observation tower at the top.

### CATALOOCHEE

A remote valley with historic buildings which include a church, school, and several homes. Wildlife is often seen in the open fields. Access is by a well-maintained gravel road. Ask at a visitor center for directions.

### ROARING FORK

This winding, six-mile, one-way, paved road leads you through rich forests and past historic log buildings. A 25¢ booklet is available at visitor centers which serves as a guide to the road.



You can always beat the crowds by visiting Cataloochee, a remote valley located on the east side of the national park.



The Oconaluftee Visitor Center and Pioneer Farmstead, located two miles north of Cherokee, North Carolina, are open every day.

## Scenic Roads

There are about 170 miles of paved roads and over 100 miles of gravel roads in the Smokies. The "backroads" offer a chance to escape traffic and enjoy the remote areas of the park at your own pace.

Parson Branch, Rich Mountain, Heintooga-Round Bottom, and the Foothills Parkway are all off-the-beaten-path routes.

Inexpensive, self-guiding auto tour booklets are available for many roads. They may be purchased at visitor centers or at the beginnings of the roads.

All park roads are marked on the map in this newspaper. Detailed road information is available in the book *Mountain Roads & Quiet Places*, which may be purchased at park visitor centers.

Those secondary roads which have been closed for the winter will open at the following dates. Forge Creek, Tremont, and Roaring Fork: March 27. Rich Mountain, Parson Branch, and Heintooga-Round Bottom: April 17.

## Historic Buildings

Over 70 historic structures are found in the park. These buildings are the work of hardy mountaineers who lived in the Smokies prior to the establishment of the national park.

Most of the buildings are found in Cades Cove, at the Pioneer Farmstead adjacent to Oconaluftee Visitor Center, on the Roaring Fork Motor Nature Trail near Gatlinburg, and in the Cataloochee Valley.



## PARK RULES

Picking flowers or digging plants is strictly prohibited.

Feeding a bear or other wild animal may lead to the death of that animal. Persons feeding wildlife are subject to a \$5,000 fine and six months imprisonment.

Pets are not permitted on park trails.

Writing or carving on historic buildings or natural features (including trees) is punishable by fine and imprisonment.





# RESOURCE NEWS

Articles by Karen Ballentine, Park Ranger



A recent study shows that as much as 60% of the park's flowering dogwood population is severely infected by the blight.

## Researchers Say Dogwood Disease is Still Spreading

**A** RAMPANT FUNGAL disease, dogwood anthracnose (*Discula destructiva*), is killing hundreds of thousands of flowering dogwood trees in the Smokies.

Since it was documented here in 1988, dogwood anthracnose has spread to all parts of the park and increased in incidence and severity. A four-year study of 46 park plots revealed that since 1988 the number of severely infected trees has increased from 15% to 60%.

Research shows that moisture and cool temperatures increase the rate of spread, and some studies indicate that acid precipitation may increase dogwood infection. Trees located on northern slopes, at elevations between 1,000 and 4,000 feet, and near water are most vulnerable.

Anthrachnose symptoms include purple-rimmed spots on the leaves, twig dieback, dead leaves clinging to stems, trunk sprouts, and cankers on the bark. Most trees are killed two to three years after infection.

The impact of losing flowering dogwoods is more than visual. Dogwood twigs are important food for deer and other herbivores. Migratory birds depend on the abundant berries to give them energy to travel south to wintering grounds and decaying dogwood leaves add important calcium to the soil.

Fungicides can be used to combat the disease around the home, but treating a 520,000 acre preserve like the Smokies is like fighting a forest fire with a squirt gun. The greatest hope lies in the discovery of genetic resistance.

The National Park Service recently found healthy dogwoods in Catoctin Mountain Park in Maryland thriving within large stands of diseased trees. If the trees have resistance to the disease, a program to breed anthracnose resistant dogwoods can be started. Other possibilities include crossing the resistant Chinese species and American flowering dogwood varieties.

## Four Red Wolves Released in Great Smokies in Experimental Program

**N**OVEMBER 12, 1991 marked the first time a major predator was returned to the wilds of a national park. On that day, two adult red wolves and two female pups were released to roam the slopes and hollows of Cades Cove. Biologists are closely monitoring the wolves during the early phase of this experimental program.

The wolves' movements and activities have been observed using radio telemetry equipment 16-20 hours each day. Most of their movements have been concentrated in the early morning and the few hours surrounding dusk. The wolves have not been as reclusive as expected and have been seen in the open area of the cove in daylight.

Evidence indicates that the wolves are feeding on grouse, rabbits, and other small mammals in the area. They have also been observed feeding on several deer carcasses, but researchers suspect the deer were injured previously, during the rut. The availability of ample prey in the Cades Cove area has kept the animals from moving great distances.

Observations have led biologists to believe that the adult male has been exposed to humans so much that he is too tame to remain in the wild. The 9-year-old animal has spent most of his life in captivity. Because of his tolerance of humans and buildings, he has been recap-



TVA photo by Wendell Blohm

Red wolves are among the most endangered mammals on earth.

tured and placed back in the acclimation pen and will probably not be released in the wild again. The experience gained from the activities of this male suggest that future releases should be of younger animals with a minimum of time in captivity.

This first year of wolf reintroduction is experimental. Data is being collected on the animals' home range, diet, interactions with coyotes and humans, and whether the wolves pose a threat to livestock. The wolves will then be recaptured, the data analyzed, and the permanent release of additional wolves will be considered.

Spurring the reintroduction effort is the fact that the red wolf is one of the most endangered species in the world. Aggressive predator control programs and the clearing of essential habitat combined to bring the red

wolf to the brink of extinction.

By 1970, the entire population of red wolves dwindled to less than 100 animals in a small coastal area of Texas and Louisiana. To save the species from extinction, the remaining canids were trapped from the wild and placed in a captive breeding program. Since then, red wolf numbers have continued to increase in over 20 captive breeding facilities throughout the United States.

Today the population hovers around 160, with most red wolves in zoos. Because humans now understand the red wolf's important place as a top predator in the southeast, approximately 35 wolves have been returned to the wild. Most are at Alligator River National Wildlife Refuge in coastal North Carolina or on islands in Mississippi, Florida, and South Carolina.





# BEHIND THE SCENERY

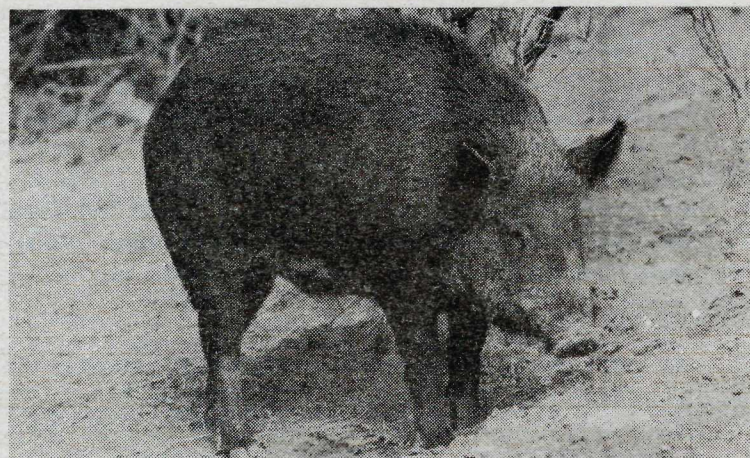


photo by Leonard Lee Rue III

Wild hogs are natives of eastern Europe and Asia. They were accidentally introduced to the Smokies from a hunting preserve.

## Resource News Briefs

### Park May Be Winning the War on Wild Hogs

With the arrival of spring, the wild hog, the park's most destructive non-native, starts seeking out young plants and underground roots and stems. While searching for favorite foods such as spring-beauty bulbs and trout-lily tubers, the hogs root and rut, dig and destroy. Natural wildflower populations throughout the park have been decimated.

The park's intensive hog removal program helps keep these impacts at a minimum. As of February 13, 110 hogs had been removed from the park this year. Removals in 1991 totalled 254. This was the lowest number of hogs removed since 1980 despite consistent control efforts. Happily, this decline suggests that the overall hog population has decreased in the park, though control efforts must continue to keep the population low.

### Scientists Study Migratory Birds in the Smokies

Some scientists believe that disappearing tropical rainforests may be the main reason for the decline in the U.S. of birds like the Wood Thrush, Acadian Flycatcher, Louisiana Waterthrush, and Ovenbird. Other scientists argue that forest fragmentation in our own country is a bigger culprit.

To address the decline, several federal agencies have devised a plan for studying migratory songbirds. Last year in the Smokies, a team of scientists from Venezuela and Costa Rica, joined up with American researchers to standardize research methods and begin monitoring.

Researchers in the Smokies have been working to establish baseline data for migrant populations and to develop censusing methods. So far, researchers have found that the cove hardwood old-growth forests in the park have high species diversity and that neotropical migratory birds account for nearly 75% of the birds there. Also, species in the spruce-fir forest continue to change in response to loss of Fraser fir trees. Researchers in the Smokies and three neighboring national forests plan to count breeding, migrating, and resident bird populations.

## Biologists Preserve Fish *and* Fishing

by Dan Tardona, Park Ranger

**M**ANAGING THE FISH populations of Great Smoky Mountains National Park is something of a juggling act. On the one hand, managers seek to provide recreational opportunities for anglers in the park. On the other, they strive to preserve native species such as brook trout and the Smoky madtom.

Providing opportunities for anglers requires monitoring game fish populations, especially trout. To accomplish this, park biologists use portable electroshocking equipment to stun fish and record their length, weight, and numbers of each species.

For example, the 1991 survey of three sections of Little River revealed that the average rainbow trout was 5.5" long and that 25% of the 841 rainbows shocked were of legal size (7" long or larger). Brown trout averaged 7.5" long and 45% were legal size.

Park workers also survey anglers to learn how many fish are being caught. During 1991, rangers surveyed 1,225 anglers and discovered the following information:

- 71.8% of the anglers surveyed were from the local area
- the average fishing trip lasted 2.5 hours
- an average of 4.3 fish were caught per angler per trip
- the average angler kept one fish and released the others
- the average size of fish kept was 8.5" for rainbow trout and 10.2" for brown trout

This information is then evaluated to determine the effects of drought, floods, and angling on fisheries. The results of such research may

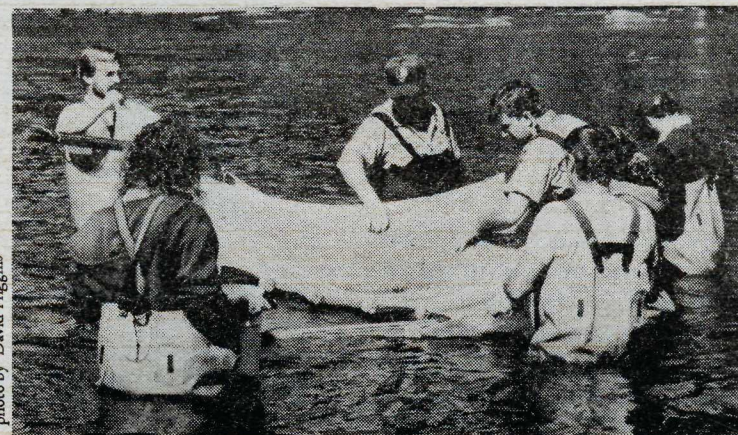


photo by David Higgins

Biologists are returning several species of native fish to the Great Smokies by capturing them in waters outside the park.

ultimately affect the following year's fishing regulations for the park.

In protecting native species, managers' number one concern is the brook trout. Since 1900, this species has been eliminated from about 70% of its range.

Initial losses of brook trout range are attributed to unregulated logging and fishing practices. However, range loss since the mid-1930s seems to be the result of encroachment by rainbow trout. Rainbows are non-native species that were introduced to the park around the turn of the century to provide recreational opportunities for anglers (after brook trout fishing had declined).

Like kudzu, wild hogs, and many other introduced species, rainbow and brown trout have prospered at the expense of the native. To counteract this trend, managers are using natural barriers, like waterfalls, to separate brook trout from the more aggressive rainbows.

After stunning the fish with electroshocking equipment, rainbow trout are

moved downstream, below the falls. Brook trout have responded by increasing in numbers in headwaters areas upstream from the falls or other barrier. Currently, biologists are studying what makes an effective barrier so they can become even more successful at reclaiming streams for brook trout.

Various problems have caused some species of fish to be completely eliminated from park streams. These extirpated species include the Smoky madtom, yellowfin madtom, and spotfin chub.

In efforts to return these small, nongame fish to their native homelands, fisheries managers have worked hard collecting eggs and fish from areas where the species still exist. Since the recovery effort began in 1986, the following numbers of extirpated fish have been reintroduced to Abrams Creek in the park's west end:

- 769 spotfin chubs
- 328 yellowfin madtoms
- 686 Smoky madtoms.

Reintroduction efforts will continue in 1992 with the ultimate goal of creating self-sustaining populations.



# FREE, FUN RANGER-LED WALKS, TALKS & SLIDESHOWS

Schedule for April 5 - May 30, 1992

## SATURDAYS

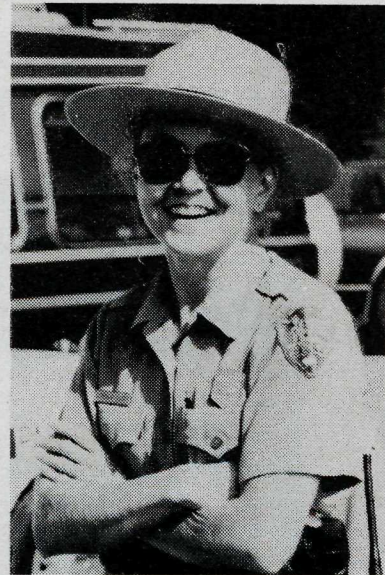
**OCONALUFTEE 10:30 a.m.**  
**RANGER'S CHOICE:** Meet a National Park Service Ranger for a 20-minute program in front of the visitor center for a closer look at what makes the Smokies so special. (A different program presented each day.)

**CLINGMANS DOME ROAD 1:30 p.m.**  
**APPALACHIAN TRAIL WALK:** Meet at Indian Gap parking area on Clingmans Dome Road, two miles west of Newfound Gap, for a stroll through the spruce-fir forest along the famous Appalachian Trail. 1 1/2 miles; 2 hours.

**CADES COVE 2:30 p.m.** (April 11-May 9)  
**STALKING THE WILDFLOWER:** Hunt for the gems of nature along the Gregory Ridge Trail. Meet at the turnaround two miles down the gravel road beyond Cades Cove Visitor Center, at the start of Parson Branch Road. 4 miles; 3 hours.

**OCONALUFTEE 2:30 p.m. & 3:30 p.m.** (except May 16)  
**FARM TALK:** Join a ranger for a short walk through history at the Oconaluftee Pioneer Farmstead. Meet in front of the farm house. 20 minutes.

**CADES COVE 6:30 p.m.**  
**EVENING HAYRIDE WITH A RANGER:** Enjoy the sunset and observe wildlife along the Loop Road. Meet at the Cades Cove Riding Stables. Wear warm clothes. (\$5.50 charge per person for transportation.) 1 3/4 hours.



Ranger-led walks go to waterfalls, wildflowers, and special historic areas.

## SATURDAYS *cont.*

**ELKMONT 7:00 p.m.**  
**SLICK LIMB BRANCH WALK:** A springtime stroll to a hidden glen near the campground. Meet at the campground bridge. 1 mile; 1 hour.

**SMOKEMONT 8:00 p.m.**  
**FIRESIDE CHAT:** Listen to Ranger Florie Takaki share with you some interesting facts about the park. Meet at the campground shelter and bring something to sit on. 3/4 hour.

**CADES COVE 9:00 p.m.**  
**SMOKY MOUNTAINS LOVE AFFAIR (ME AND THE MOUNTAINS):** A ranger's personal story of exploring and learning in the Smokies. Slide presentation at campground amphitheater; 3/4 hour.

**ELKMONT 9:00 p.m.**  
**A SPRINGTIME LANDSCAPE:** An illustrated talk on the springtime beauty of the Smokies. At campground amphitheater. 3/4 hour.

## SUNDAYS

**CADES COVE 9:30 a.m.** (April 5-May 10)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**SUGARLANDS 2:00 p.m.**  
**SUGARLANDS NATURE WALK:** An easy stroll to observe the awakening of spring in the nearby forest. Meet at Sugarlands Visitor Center. 1 mile; 2 hours.

**OCONALUFTEE 2:30 p.m. & 3:30 p.m.**  
**FARM TALK:** Join a ranger for a short walk through history at the Oconaluftee Pioneer Farmstead. Meet in front of the farm house. 20 minutes.

## MONDAYS

**CADES COVE 9:30 a.m.** (April 6-May 4)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**OCONALUFTEE 10:30 a.m.**  
**RANGER'S CHOICE:** Meet a ranger for a 20-minute program in front of the visitor center for a closer look at what makes the Smokies so special. (A different program presented each day.)

**SUGARLANDS 1:30 p.m.**  
**BULL HEAD TRAIL WILDFLOWERS:** Meet at the Rainbow Falls parking area at Cherokee Orchard. (Turn at traffic light #8 in Gatlinburg.) 3 miles; 3 hours.

## TUESDAYS

**CADES COVE 9:30 a.m.** (April 7-May 5)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**OCONALUFTEE 10:30 a.m.**  
**RANGER'S CHOICE:** Meet a National Park Service Ranger for a 20-minute program in front of the visitor center for a closer look at what makes the Smokies so special. (A different program presented each day.)

**SUGARLANDS 1:30 p.m.**  
**GROTTO FALLS WALK:** Meet at Grotto Falls parking area on the Roaring Fork Motor Nature Trail. (Turn at traffic light #8 in Gatlinburg.) 3 miles; 2 1/2 hours.

**ELKMONT 7:00 p.m.**  
**MIDS BRANCH NATURE WALK:** Learn the importance of park streams, as well as a piece of Elkmont history. Meet at the campground bridge. 1 mile; 1 hour.

**ELKMONT 9:00 p.m.**  
**THIS SPECIAL PLACE:** An illustrated talk about choice spots in Great Smoky Mountains National Park. Meet at the campground amphitheater. 3/4 hour.

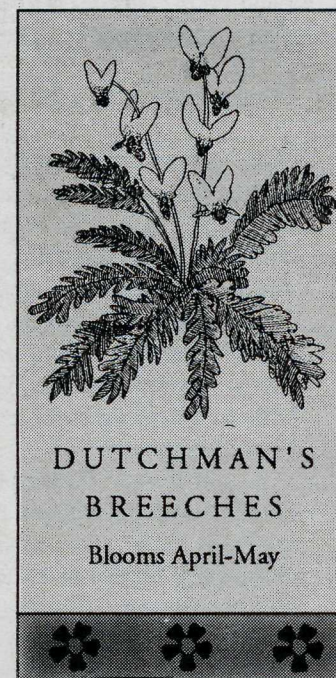
## WEDNESDAYS

**CADES COVE 9:30 a.m.** (April 8-May 6)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**ELKMONT 1:30 p.m.**  
**WILDFLOWER WALK ALONG THE RIVER:** Enjoy the flow-ers and water. Meet at Little River trailhead, upstream from Elkmont Campground. 3 miles; 3 hours.

**ELKMONT 7:00 p.m.**  
**OLD ELKMONT TOWN WALK:** Learn about the heyday of this old time logging community. Meet at the campground bridge. 1 mile; 1 hour.

**ELKMONT 9:00 p.m.**  
**THE PIONEER STORY:** An illustrated talk about the colorful and self-reliant people who settled these mountains. Meet at the campground amphitheater. 3/4 hour.



## THURSDAYS

**CADES COVE 9:30 a.m.** (April 9-May 7)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**OCONALUFTEE 1:30 p.m.**  
**RANGER'S CHOICE:** Meet a National Park Service Ranger for a 20-minute program in front of the visitor center for a closer look at what makes the Smokies so special. (A different program presented each day.)

**SUGARLANDS 1:30 p.m.**  
**COVE HARDWOOD NATURE WALK:** Meet at the nature trail in the Chimney Tops picnic area, on the Newfound Gap Road, to explore a cove hardwood forest and see one of the best displays of wildflowers. 1 mile; 1 1/2 hours.

**SMOKEMONT 8:00 p.m.**  
**SPIRITS OF THE MOUNTAINS:** Ranger Jeannie Reed tells the story of the early Cherokee and Scotch-Irish residents and their relationships to the development of the Great Smoky Mountains National Park. Meet at the campground shelter and bring something to sit on. 3/4 hour.



Rangers are glad to answer your questions about the Smokies.

## FRIDAYS

**OCONALUFTEE 1:30 p.m.**  
**RANGER'S CHOICE:** Meet a National Park Service Ranger for a 20-minute program in front of the visitor center for a closer look at what makes the Smokies so special. (A different program presented each day.)

**SUGARLANDS 1:30 p.m.**  
**LAUREL FALLS WALK:** Meet at Laurel Falls parking area on Little River Road. 2 1/2 miles; 2 1/2 hours.

**CADES COVE 2:00 p.m.** (April 10-May 8)  
**WILDFLOWER FANTASY:** Meet at the Chestnut Top trailhead near the Townsend entrance, at the intersection of Little River Road and Cades Cove Road (Townsend Wye). 1 mile; 1 1/2 hours.

**CADES COVE 7:00 p.m.**  
**SUNSET WALK:** Enjoy the setting sun from a vista overlooking Cades Cove. Park at the ranger station and meet at the trailhead near campsite C-15. Moderately steep climb. Wear sturdy shoes. 1 mile; 1 1/2 hours.

## FRIDAYS *cont.*

**ELKMONT 7:00 p.m.**  
**BEAR WALLOW BRANCH:** Explore this stream and learn about its bears, people, and other wonders. Meet at the campground bridge. 1 mile; 1 hour.

**SMOKEMONT 8:00 p.m.**  
**SPRING HAS SPRUNG!:** As the mountains reawaken to the arrival of spring, Ranger Bill Wise talks about how to sharpen your observation skills to discover and enjoy what is happening in the natural world. Meet at the campground shelter and bring something to sit on.

**CADES COVE 9:00 p.m.**  
**SMOKY MOUNTAINS UPDATE (WHAT'S NEW IN THE SMOKIES):** Find out the latest news of what's happening in your park. Slide presentation at campground amphitheater; 3/4 hour.

**ELKMONT 9:00 p.m.**  
**WHO LIVES IN THE PARK?:** An illustrated talk about some of the park's fascinating animals. At the campground amphitheater. 3/4 hour.

## SPECIAL EVENTS

**APRIL 14-MAY 14:** (Various weekdays) Historic Environmental Living Program. Local 6th graders participate in a hands-on learning experience at the Pioneer Farmstead, living and working as mountain farmers did around the turn of the century. The public is welcome to observe.

**APRIL 20-30:** Spring plants of the Great Smokies. A four-part multi-media program by Dr. George Beatty, Pennsylvania State University, at Sugarlands Visitor Center. Starts at 10:00 and 2:00

**APRIL 23-25:** Spring Wildflower Pilgrimage. Registration at Mills Auditorium in Gatlinburg.

**MAY 2:** Old Timers' Day at Cades Cove.

**MAY 16:** Women's Day: A Tribute to the Women of Southern Appalachia. Demonstrations of open-hearth cooking, quilting, soap making, and more at the Oconaluftee Pioneer Farmstead. 10:00-4:00.

**JUNE 27:** Storytelling Day at Cades Cove.

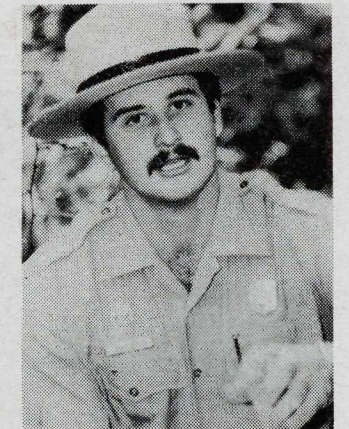
**JULY 25:** Quilt Show at Cades Cove.

**AUGUST 29:** Lye Soap Making at Cades Cove.

**SEPTEMBER 19-20:** Mountain Life Festival at Oconaluftee Pioneer Farmstead.

**SEPTEMBER 26:** Old Timers' Day at Cades Cove.

## VISITOR CENTER TALKS & TOURS



**CADES COVE**  
Visitor center open 9-6

**MILL AREA TOURS 1:30 daily.** A 30-minute tour of the historic district. Begins outside the visitor center.

**CABLE MILL:** See corn ground by a water-powered grist mill. Open 9:30-5:00

**OCONALUFTEE**  
Visitor center open 8-6

**FARMSTEAD TOURS:** Weekends (except May 16) at 2:30 and 3:30. 20-minute tours covering life on a pioneer farm. Meet at the farm house.

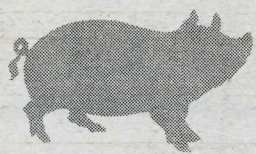
**MINGUS MILL:** See corn ground at a water-powered grist mill located 1/2 mile from the visitor center on the Newfound Gap Road. Open 9-5.

**SUGARLANDS**  
Visitor Center open 8-6

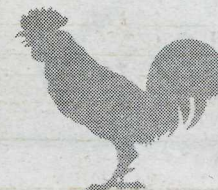
**SLIDE SHOW:** 10:00 daily. A 20-minute program on things to see and do in the park.

**WILDFLOWER WALK:** 11:00 daily. An easy one-mile, one-hour walk to see wildflowers. Starts at the visitor center.





# ON THE FARMSTEAD



## PLANTING SIGNS

Crops were often planted when the moon was in one of these signs.



**SCORPIO**  
The Loins  
Watery and Fruitful



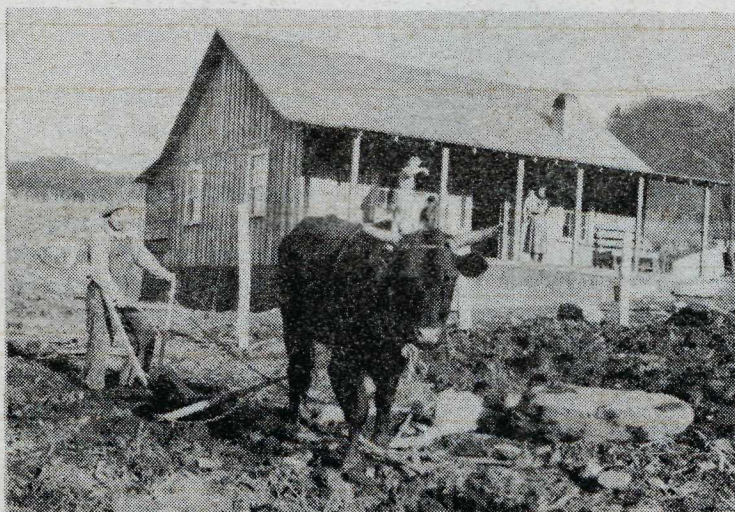
**PISCES**  
The Feet  
Watery and Fruitful



**TAURUS**  
The Neck  
Earthy, Moist, Productive



**CANCER**  
The Breast  
Watery and Very Fruitful



Plowing with an ox near Cosby, Tennessee (April 12, 1936).

## Planting the Spring Crops

by Tom Robbins,  
Park Ranger

Many people think farming is strictly a warm weather activity, but those who have made a living from the soil know that farming was and still is a year-round endeavor.

For farmers in the Smokies during the nineteenth century, winter and early spring work included pruning fruit trees, repairing equipment, clearing new ground for future planting, and hauling manure from the barn to use as fertilizer, especially on the family garden.

Although some farmers considered spring the earliest time to start plowing, others plowed during winter to turn under old plant material and to allow the winter freezes and thaws to help break up the soil. Many farmers burned their fields before plowing to get rid of weeds and old vegetation and to help control insects.

Regardless of what the calendar indicated, farmers in

the Smokies know that their "new year" generally began in March. Frost could occur in the valleys as late as May, but several cold tolerant plants could be planted in March, including onions, mustard greens, turnips, potatoes, and cabbage.

Farmers often looked to signs from nature to help them decide when to plant. Before planting corn, some waited for the first Whip-poorwill to call or oak leaves to grow as big as a "squirrel's ear." Weather signs like a circle around the moon or sun (meaning rain or fair weather, respectively) often helped a farmer determine when to plow or plant.

It was also common practice for farmers to consult the Zodiac and the phases of the moon before doing certain jobs. Each of the 12 signs of the Zodiac is associated with a part of the body and each day of the month is dominated by one of the signs. Planting, for example, would be done when the signs were associated with the loins, feet, neck, or breast (Scorpio,

Pisces, Taurus, or Cancer).

The phases of the moon were also considered before starting many activities. For example, when planting crops such as corn which produced above ground, the moon should be "growing" or becoming full, while underground or root crops, like potatoes, should be planted during the shrinking moon.

The ideal time for any activity was when both the phase of the moon and the dominant Zodiac sign were at their best. To find when such times occurred, farmers consulted a variety of almanacs and planting calendars.

Planting gardens and fields continued through the spring as the ground warmed and the chance of a killing frost diminished. Gardens were often worked entirely with hand tools—mostly shovels, hoes, and rakes—while animal-drawn equipment was used in the larger fields.

Through the spring and early summer, weed control consumed an enormous amount of time and hand labor. Even a cornfield, where an animal-powered cultivator or plow might be used, required a mammoth amount of hoeing around the individual hills of corn. This continued until the corn was about knee high and could be "laid by."

In the past, even the most simple meal represented hours of labor, a tremendous amount of sweat, and good luck with the weather. Today, when the grocery store is the extent of most people's knowledge of where their food comes from, a better understanding of the past can provide a greater appreciation for the present.

## PLANTING FOLKLORE

"Plant corn when the sign is in the Head so there will be more ears."

"If you laugh while planting corn, the grains will be far apart on the cob."

"If cucumbers are planted on Saturday, they will be bitter."

"If you plant cucumbers in the full moon, they will all run to vines, and will not bear."

"Red-headed persons have the best luck with peppers."

"Tomatoes should be planted in the sign Gemini, or in the scales."

"Plant turnips on Ascension Day for abundant foliage and large turnips."

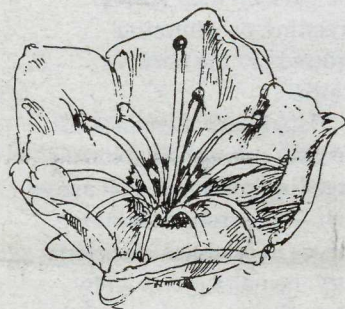




# FLOWERING TREES



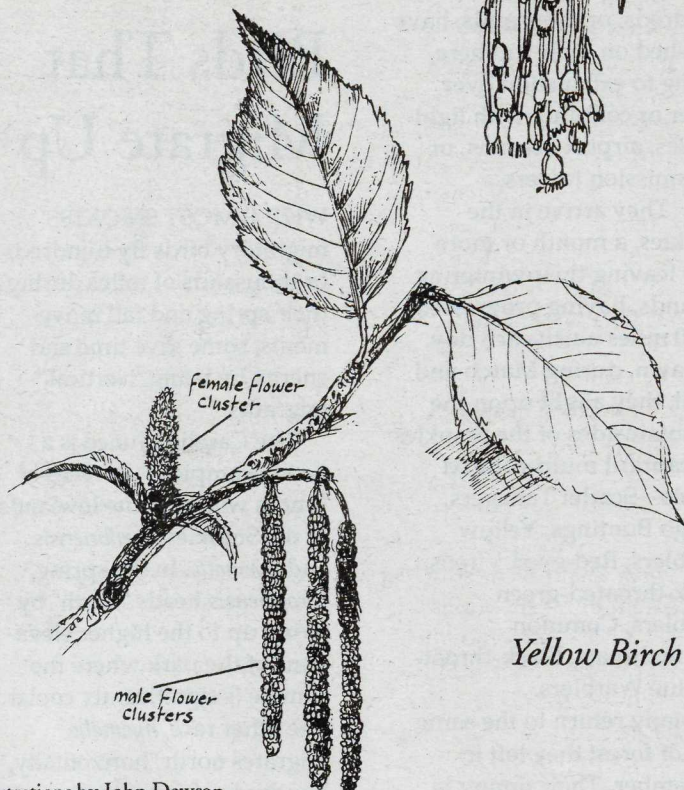
Rosebay  
Rhododendron



Mountain Laurel



Sugar Maple



Yellow Birch

illustrations by John Dawson

## Some of the Best Wildflowers in the Great Smokies Bloom in the Trees

THE TERM "FLOWERING trees" is somewhat redundant because all trees bear flowers. Flowers are the way trees exchange genetic material and ultimately produce seeds.

While dogwoods, redbuds, and other showy trees are celebrated for their spring blooms, most trees flower more subtly. Pines and conifers, for example, have flowers that look like tiny cones. The "cones" are either male or female and most conifers have both kinds of flowers on the same tree.

Oak flowers are arranged in spikes called catkins. Because the flowers lack petals, they are easily overlooked. Female catkins are especially small and might be mistaken for a berry or bud. Male catkins, though not especially showy, may dangle in large clusters four to five inches long.

Tuliptrees and the other magnolias certainly have the largest flowers, but they are often missed because they

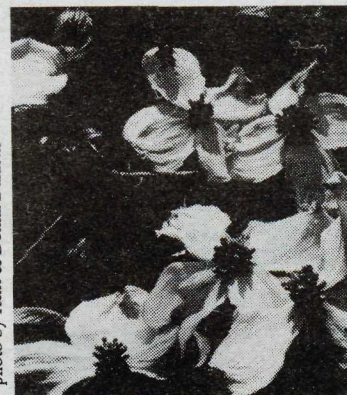


photo by Kent & Donna Darnen

Dogwoods bloom in April.

bloom ten to one hundred feet off the ground. Trails and roads that traverse steep slopes sometimes provide the opportunity to look down on these spectacular flowers. Still, you might see your first tuliptree flower on the ground, as they often break off during high winds. Fraser and cucumber magnolias are some of the most ancient flowering plants on earth. Their beautiful blossoms are unusually large, seemingly big enough for a robin to nest in.

In some years the spring display of tree blossoms

rivals the spectacle of autumn leaves. Red maples, when they peak in late February and March, may paint whole mountainsides with a wash of brilliant red. Flowering dogwoods and serviceberry trees lend the forest a snowy look a month or two later.

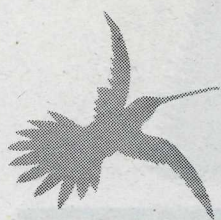
Redbuds, with their striking magenta flowers, bring many photographers flocking to the park in April.

Most trees with showy flowers are pollinated by bees and other insects. Tuliptrees, basswoods, and sourwoods are, in fact, renowned for the honey that bees produce from their nectar. Bright colors, large petals, and strong scents all help flowers call in pollinators.

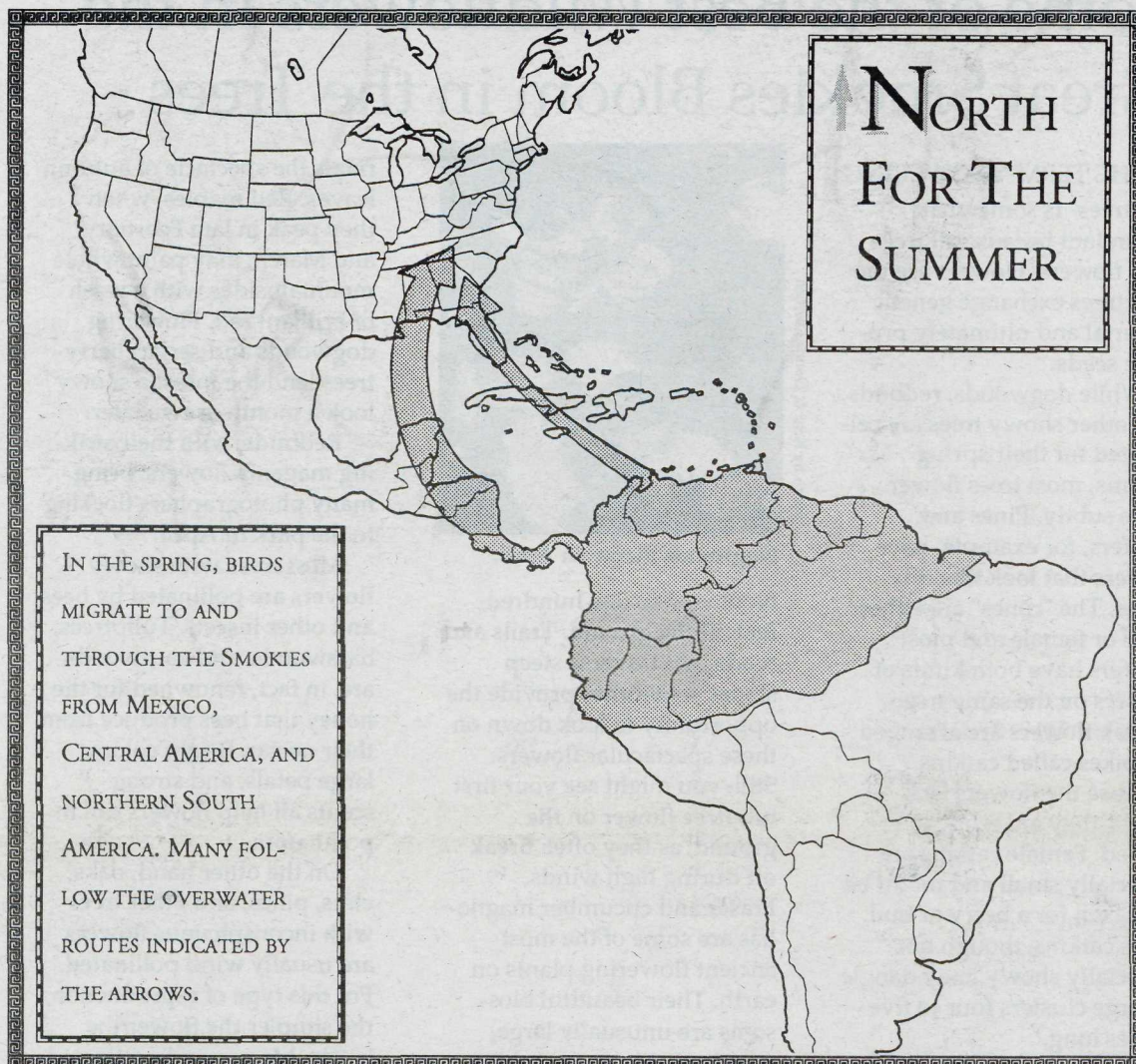
On the other hand, oaks, elms, pines, and other trees with inconspicuous flowers are usually wind pollinated. For this type of reproduction, the simpler the flower the better. Many wind pollinated trees flower in late winter or early spring, before most insects are even present.

TREE	WHEN BLOOMS	ELEVATION	COLOR
Red maple	February to May	below 6,000'	red
Serviceberry	early March to mid-May	below 6,000'	white
Redbud	late March to mid-April	below 2,000'	magenta
Flowering dogwood	mid- to late April	below 3,000'	white
Mountain silverbell	mid-April to mid-May	below 5,000'	white
Mountain laurel	May through July	below 5,000'	white
Tuliptree	late April through May	below 5,000'	green/salmon
Fraser magnolia	April to June	below 5,000'	white
Pin cherry	April to early June	above 3,000'	white
Catawba rhododendron	June	3,000-6,500'	purple
Rosebay rhododendron	June to July	below 5,000'	white/pink





# MIGRATORY BIRDS



## On Mornings in the Spring, Miracles Occur



EVERY SPRING in the Smokies, something of a miracle occurs: the migratory songbirds return.

Many arrive from wintering grounds as far away as Venezuela, Peru, Columbia, and Brazil. They've traveled mostly at night, navigating by stars or winds or some other means that scientists do not yet understand. Some have made the trip on wings not much longer than your little finger.

Flocks of songbirds cross the Gulf of Mexico, a deadly 500-700 mile sojourn, without the luxury of rest stops, food, or fresh water. Undoubtedly hundreds, or thousands, have perished on their trip here, falling to exhaustion over water or colliding with light houses, airport beacons, or transmission towers.

They arrive in the Smokies, a month or more after leaving their wintering grounds, having progressed 20-30 miles north each day. At dawn, during March and April, they alight upon the mountainsides of the Smokies in beautiful multi-colored waves—Scarlet Tanagers, Indigo Buntings, Yellow Warblers, Red-eyed Vireos, Black-throated-green Warblers, Common Yellowthroats, Black-throated-blue Warblers.

Many return to the same acre of forest they left in September. Their timing is impeccable. As the naturalist

Edwin Way Teale described the phenomenon, "Buds burst, new leaves unfurl, larvae hatch, and warblers appear."

Of the 238 species of birds which have been sighted in the Smokies, 74 are believed to migrate here for the summer, while 96 pass through the park on their way to breeding or wintering grounds to the north or south.

Usually it's the males, all decked out in their colorful breeding plumage, that arrive first. Their frequent singing serves to establish their territory. Females arrive a few days after the males, and the courtship, mating, and nest building which make spring famous quickly ensue.

## Birds That Migrate Up

WHILE MOST SMOKIES' migratory birds fly hundreds or thousands of miles during their spring and fall movements, some save time and energy by being "vertical" migrants.

The Carolina Junco is a good example. Two races of Juncos winter in the lowlands of the Smokies, *carolinensis* and *hyemalis*. In the spring, *carolinensis* heads "north" by flying up to the higher elevations of the park where the climate is significantly cooler. The other race, *hyemalis* migrates north "horizontally," hundreds of miles, perhaps all the way to Canada.

## SMOKIES' MIGRATORY BIRD CALENDAR

SPECIES	ARRIVES IN PARK	WINTER HOME
Louisiana Waterthrush	March 18-23	Mexico to n. South America
Blackburnian Warbler	March 25-30	n.w. South America
Black-and-white Warbler	March 30-April 4	Gulf states to n. South America
Broad-winged Hawk	April 2-14	South America
White-eyed Vireo	April 6-18	Gulf states to Honduras
Hooded Warbler	April 11-18	Mexico to Panama
Ovenbird	April 16-19	Gulf area to n. South America
Black-throated-blue Warbler	April 16-23	Gulf states, Greater Antilles
Parula Warbler	April 18-25	Florida, Mexico, Central America
Scarlet Tanager	April 18-25	Mexico
Chestnut-sided Warbler	April 23-29	Central America
Canada Warbler	April 26-May 3	n.w. South America





# GREAT OPPORTUNITIES



## NHA For Those Who Want to Know More About the Smokies

**M**EMBERSHIP IN Great Smoky Mountains Natural History Association is for people who care about the national park and want to know more about its natural and historic resources. The association is a nonprofit organization which is authorized by Congress to support the park's educational and scientific programs. It accomplishes these goals in a number of ways, including:

- Publishing and distributing books, maps, pamphlets, newsletters, newspapers, guides and other materials designed to enhance the park visitor's enjoyment and understanding of the park
- Funding visitor center exhibits and artifact collections
- Operating the environmental education program at Tremont, as well as special festivals, living history demonstrations, guided walks, and other programs
- Funding special educational opportunities like the park's Junior Ranger program
- Maintaining a reference library of scientific works
- Providing funds for scientific research.

Members of Great Smoky Mountains Natural History Association receive a number of benefits which help them learn more about the park and park resources and issues. These benefits include:

- A subscription to the association's newsletter, *The Bearpaw*
- A 15% discount on books, videos, cornmeal, and other sales items
- Discounts from most other park associations, including Yellowstone, Everglades, Grand Canyon, Shenandoah, and Yosemite
- A subscription to the quarterly park newspaper, *Smokies Guide*
- Our catalog of new books and other publications offered by the association
- Participation in the association's annual meeting (including guided walks, guest speakers, and entertainment)
- Participation in the association's annual guided dayhikes to exciting destinations in the national park
- The satisfaction of assisting the park's important educational and scientific programs.



Workshops are available on backpacking, wildflowers, nature photography, wildlife, and more.

## Outdoor Classrooms in the Smokies

### GREAT SMOKY MOUNTAINS INSTITUTE AT TREMONT

Nestled in the heart of Great Smoky Mountains National Park, Tremont provides a wonderful diversity of environmental education programs for everyone from elementary school children to Elderhostel groups.

Most programs last for at least three days, allowing participants the opportunity to become well acquainted with the park. Tuition, meals, and lodging are provided for a minimal fee. Tremont is a nonprofit organization operated by Great

Smoky Mountains Natural History Association.

Below is a sampling of spring and summer programs at Tremont. If you would like more information about these and other programs, call (615) 448-6709 or check the Tremont box on the form below.

APRIL 24-26 Adult Spring Backpack  
APRIL 24-27 Spring Photo Workshop  
MAY 15-17 Naturalist Weekend  
JUNE 22-27 Naturalist & Educator Week I  
JUNE 29-JULY 4 Discovery Camp I (ages 9-12)  
JULY 6-12 Wilderness Adventure Camp (ages 13-16)  
JULY 13-18 Naturalist & Educator Week II  
AUG. 10-13 Adult Summer Backpack

**SMOKY MOUNTAIN FIELD SCHOOL**  
The Field School is a cooperative effort between the

University of Tennessee and Great Smoky Mountains National Park. Programs consist of intensive weekend and five-day field courses emphasizing outdoor exploration of the Smokies. All courses are limited to small numbers to assure individual attention. For more information, call 1-800-284-8885. Some highlights include:

APRIL 18 Botanical Photography  
APRIL 25 Wilderness Wildflowers Hiking Trip  
APRIL 25-26 Pandas, China, & Smokies Wildlife  
MAY 2 Smokies Geology  
MAY 2-3 LeConte Hike and Overnight in the Lodge  
MAY 23-24 Advanced Fly Fishing in the Smokies  
MAY 30-31 Owl Prowl & Birds of the Smokies  
MAY 31 Stream Life  
JUNE 13-14 Ferns  
JUNE 20-21 Wildlife Research in the Smokies  
JULY 11-12 Mosses Study  
AUGUST 1-2 Mushrooms  
SEPT. 11-13 Smokies' Spiders

- ☐ Annual Membership \$15
- ☐ Lifetime Membership \$200
- ☐ Annual Family Membership (Husband & Wife) \$25
- Do you wish to be a voting member? ☐ yes ☐ no
- ☐ Please send me your free brochure on Tremont's programs and workshops.



## Sign Me Up!

Name(s) \_\_\_\_\_

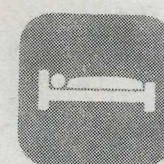
Address \_\_\_\_\_

Mail to Great Smoky Mountains Natural History Association,  
115 Park Headquarters Road, Gatlinburg, TN 37738 (615) 436-7318.  
Please enclose payment with this form.





# VISITOR SERVICES



## First Aid

Report all accidents or injuries to the nearest ranger station or visitor center. After-hours emergency services are available at these facilities:

### Sevier County Hospital

(615) 453-7111, Middle Creek Rd., Sevierville, TN. 15 miles from Gatlinburg.

**Blount Memorial** (615) 983-7211, U.S. 321, Maryville, TN 25 miles from Cades Cove.

### Swain County Hospital

(704) 488-2155, Bryson City, NC, 16 miles from Smokemont.

## Emergency Services

An emergency message service is available by contacting park headquarters, Gatlinburg, TN, daily from 7 a.m. to 11 p.m. (615) 436-1230. The names of visitors who have emergency messages are posted at park visitor centers. Listed below are some numbers to call for emergencies that arise after hours.

### Park Headquarters

(615) 436-1230

### Cherokee Police

(704) 497-4131

### Gatlinburg Police

(615) 436-5181

## Accommodations

Information on motels, restaurants, and other services available outside the national park may be obtained by calling these numbers.

### Bryson City, NC

(704) 488-3681

Cherokee, NC 800-438-1601

Fontana, NC 800-438-8080

Gatlinburg, TN 800-822-1998

Maggie Valley, NC

(704) 926-1686

Maryville, TN 800-525-6834

Pigeon Forge, TN

800-251-9100

Townsend, TN (615) 448-6134

## Tour Services

Commercial tour services offer guided trips in vans or small buses to various destinations in the national park.

### Mountain Tours:

(615) 453-0864

### Shamblee Tours:

800 962-0448

Sontag, Inc.: (704) 497-9711

## Recycling

Glass, aluminum, and plastic may be recycled in the green, specially marked recycling receptacles. Receptacles are located throughout the park.

## Park Lodging

LeConte Lodge, on top of Mt. LeConte, provides meals and lodging. Accessible only by foot or horse trail. Reservations required. (615) 436-4473. Wonderland Club Hotel provides rustic lodging and meals; located near Elkmont Campground. (615) 436-5490.

## Handicapped

Restrooms at Sugarlands, Cades Cove, and Oconaluftee visitor centers are handicapped accessible.

