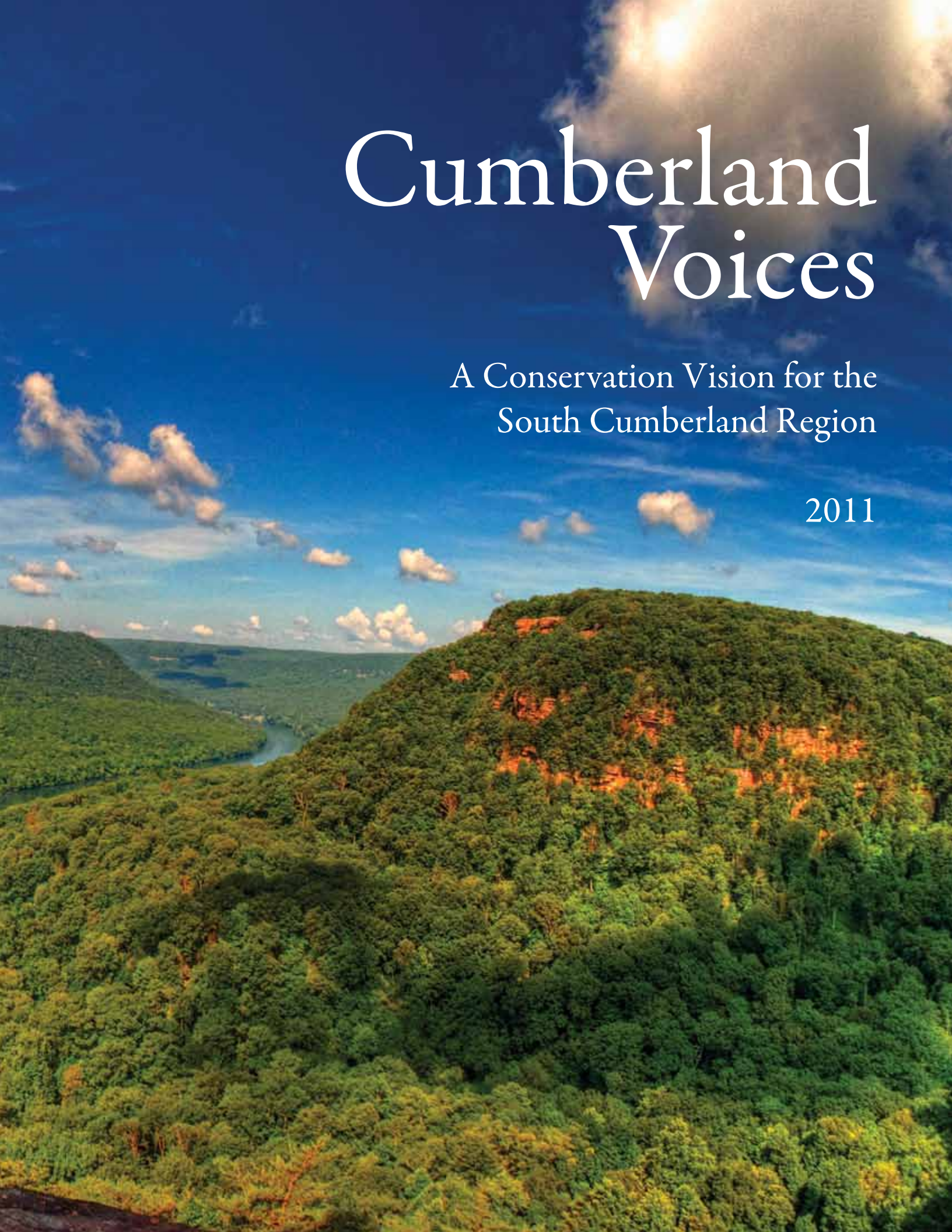

Cumberland Voices

A Conservation Vision for the South Cumberland Region

2011

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In the South Cumberland region, successful conservation of the natural and cultural heritage depends on the efforts of many individuals and organizations. A strong grassroots conservation community, and the continued interest of regional and national conservation organizations will reamin the driving force behind conservation in the region.

We thank the Lyndhurst Foundation for its enduring commitment to conservation in the South Cumberland region. The planning process described in this document would not have been possible without the foresight and support of the Lyndhurst Foundation.

We thank all of the organizations that participated in the planning process. Through a series of workshops and meetings held throughout the region in 2009 and 2010, these organizations committed their time and energy to make this process successful.

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The Land Trust for Tennessee is private nonprofit organization whose mission is to preserve the unique character of Tennessee's natural and historic landscapes and sites for future generations. The Land Trust for Tennessee has preserved over 60,000 acres across the state by working with landowners, communities, foundations, corporations and other partner organizations.

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The Sewanee Environmental Institute's mission is to facilitate interdisciplinary student-faculty research across disciplines and to enhance the academic programs at the University of the South. In 2008, the institute was formed with the strategic vision of promoting field teaching and research on the University's 13,000-acre landscape, one of the largest campuses in the United States. The Institute builds on nearly a decade of collaborative environmental research and conservation work in the South Cumberland region. The Sewanee Environmental Institute helps Sewanee faculty and undergraduate students connect with outside organizations on projects related to forest conservation, ecological restoration, land use policy, nonpoint source pollution and other issues relevant to our local region, the Cumberland Plateau, and beyond.

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Benwood Foundation
Conservation Fund
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Friends of Fall Creek Falls
Friends of South Cumberland State Park
Grundy County Historical Society
Land Trust for Tennessee
Land Trust of Huntsville and Northern Alabama
Lookout Mountain Conservancy
Lyndhurst Foundation
Mountain Goat Trail Alliance
North Chickamauga Creek Conservancy
Open Space Institute
Sewanee Environmental Institute
South Cumberland Regional Land Trust
Tennessee Department of Agriculture—Division of Forestry
Tennessee Department of Economic and Community Development
Tennessee Department of Environment and Conservation
Tennessee Parks and Greenways Foundation
Tennessee River Gorge Trust
Tennessee Wildlife Resources Agency
The Nature Conservancy of Alabama
The Nature Conservancy of Tennessee
The Nickajack Naturalist
The University of the South
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University of Tennessee—Chattanooga
US Fish and Wildlife Service

Contents

Acknowledgements 2
Lead Organizations 3
Participating Organizations 4
Preface 6
The South Cumberland Landscape 8
A Living Legacy: The Biological Heritage of the South Cumberlands 12
Plateau Past and Present: Preserving our Cultural Heritage 20
Conservation Areas 37
- Jackson Mountains 42
- Little Sequatchie Cove & Fiery Gizzard 44
- Savage Gulf 46
- Mid-Cumberland 48
- Cumberland Trail 50
- Walden Ridge 52
- Lookout Mountain 54

Ways Forward 56
- I. Define Long-Term Conservation Goals 57
- II. Establish Dedicated Funding Sources 59
- III. Engage Local Stakeholders 61

Resources 63
Photo Credits 65

Preface

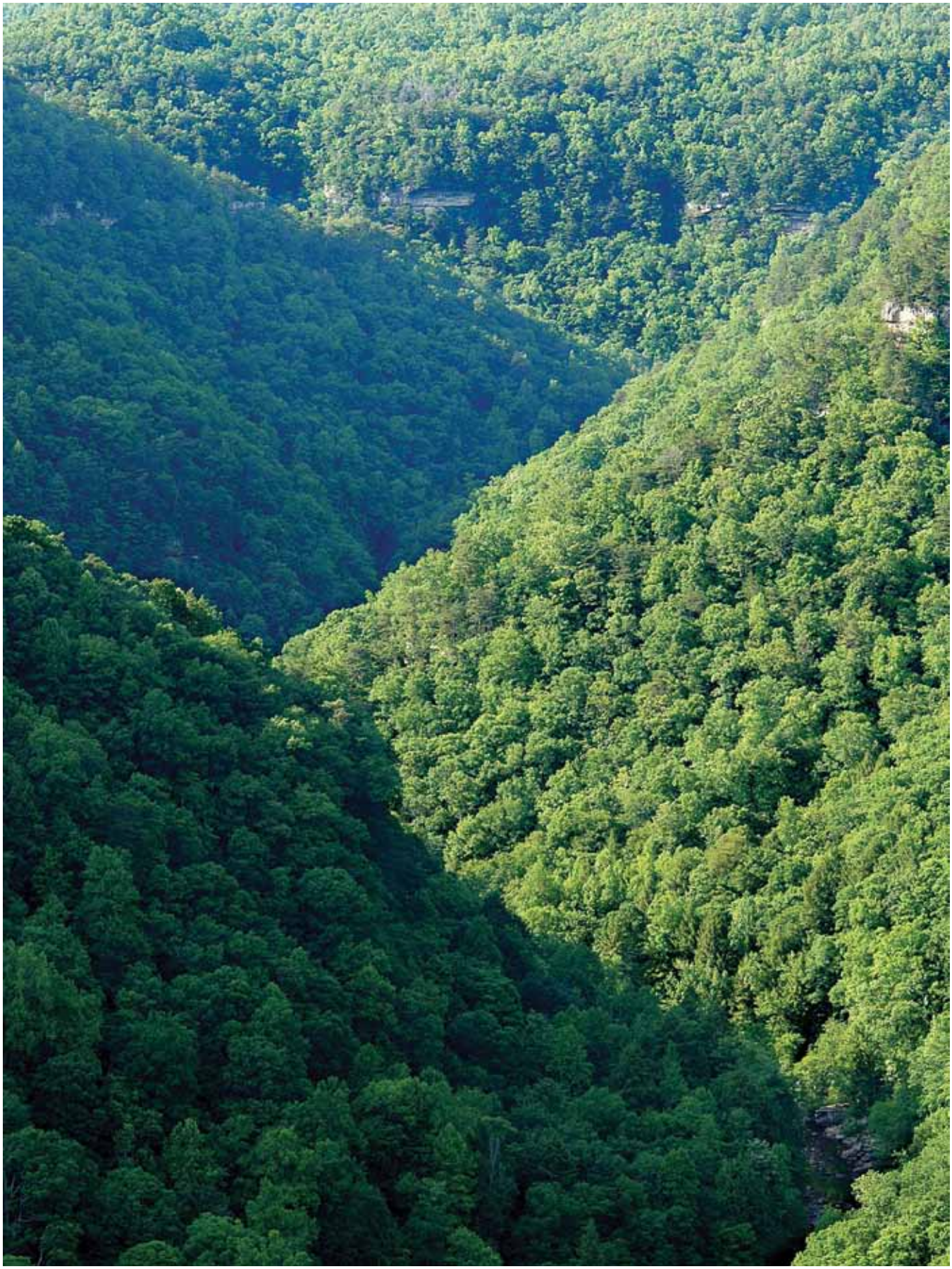
In 1921, a middle-aged forester submitted an article to the *Journal of the American Institute of Architects* that would forever change the face of recreation, conservation, and planning in the eastern United States.

The forester was Benton MacKaye, and the article was entitled: "An Appalachian Trail: A Project in Regional Planning." The concept of a long-distance foot trail, stretching from Georgia to Maine across fourteen states, was no doubt bold and novel, and caught on like wildfire; in a mere sixteen years from the release of the article, the core trail was essentially complete. But it was the larger vision that MacKaye outlined which was truly ingenious and perhaps more relevant today than ever.

MacKaye spent his formative years in the hamlet of Shirley Center, Massachusetts. Not unlike the towns of Sherwood, Estill Fork, and Beersheba Springs on the Cumberland Plateau, Shirley Center was rural in character and steeped in cultural and historical tradition. It was here that MacKaye developed his love for indigenous communities, wildlife, forests and rivers, and his zeal and commitment to protect these areas and natural resources for the remainder of his life. Concerned about the "deluge of the metropolitan invasion" into his beloved rural landscape, MacKaye conceived of the Appalachian Trail as the backbone of a larger network of landscape features, common public forests and parks, and private preserves to hold back and contain its flow. The essence of the plan and its author's life work was to make the world a more habitable and desirable place.

The pages that follow describe the wondrous and remarkable South Cumberland region and mirror to a large extent the vision set forth by Benton MacKaye almost a century ago. As a native of the Cumberland Plateau, it is my hope that this plan will resonate among a diverse audience, and that its call to action—aimed at conserving and enriching the human and natural communities which inhabit this unique place—will be embraced with passion and enthusiasm.

Benic M. "Bruz" Clark III
Lyndhurst Foundation
October 2011



The South Cumberland Landscape

When the first wave of European settlers encountered the Cumberland Plateau at the end of the 18th century, they found a wilderness. Dense forests and towering bluffs formed an impasse too difficult to traverse. At the time, the plateau was used as communal hunting grounds by several Native American tribes. Most settlers chose simply to navigate around the challenging terrain to reach the fertile prairies beyond. Today, the Cumberland Plateau looms as a verdant, imposing highland, in many ways unchanged since that time.

It is a sanctuary for both an outstanding diversity of wildlife and a cultural heritage firmly rooted in the rugged landscape that shaped it.

The Cumberland Plateau is a commanding feature of the southeastern United States landscape. A flat-topped mountain, deeply dissected by steep coves and underlain by a complex network of caves, it is the westernmost extension of the ancient Appalachian mountains. Atop the plateau surface and nestled in its coves are some of the largest, privately-owned, contiguous forests remaining in the eastern United States. The unique terrestrial and aquatic ecological habitats found here support a diversity of life that rivals that of the nearby Smoky Mountains.

The Cumberland Plateau supports an equally remarkable cultural landscape that provides important living examples of the distinct history of the region including places such as Gruetli-Laager, a community formed from a nineteenth century Swiss colony whose name means "a place of beginning," and Beersheba Springs, an antebellum resort that brought visitors from around the country to its rejuvenating chalybeate spring and moderate climate. The descen-

dents of many of the families that first settled this region remain today, maintaining both the history and the independent spirit of their ancestors.

The distinct Southern culture that developed in this region has been shaped and bounded by the land itself, which historically has not only played a central role in plateau traditions and folklore, but has also been the economic backbone of the region, whether for coal and timber extraction, or, more so today, recreation and tourism. The land and the forests are, therefore, the region's most important natural, cultural, and economic assets, and preservation of the cultural heritage is interwoven with ecological conservation and the sustainable use of these natural resources.

Conservation Opportunity

Today, the South Cumberland region and its communities are at a crossroads. Hundreds of thousands of acres of forestland are currently for sale or planned for sale in the next few years. These tracts are part of some of the largest privately-owned contiguous forest areas in the eastern United States. Poorly planned second-home developments are a leading contributor to the subdivision of these tracts, which is resulting in landscape-scale fragmentation and loss of natural habitat, increased spread of exotic species, and reduced recreation and hunting opportunities. Fewer working forests and impacts to tourism will have negative consequences for local economies. Despite these challenges, opportunities to sustain the many benefits the forests of the South Cumberland region remain, including:

- Water quality protection
- Soil erosion reduction
- Preservation of outdoor recreation opportunities
- Conservation of biological diversity
- Sustainability of an economic base for tourism
- Restoration of important native forest habitat and wildlife species populations
- Provision of a sustainable quality timber supply
- Creation of buffer zones around existing publicly-owned forest land
- Preservation of aesthetic beauty and rich cultural resources

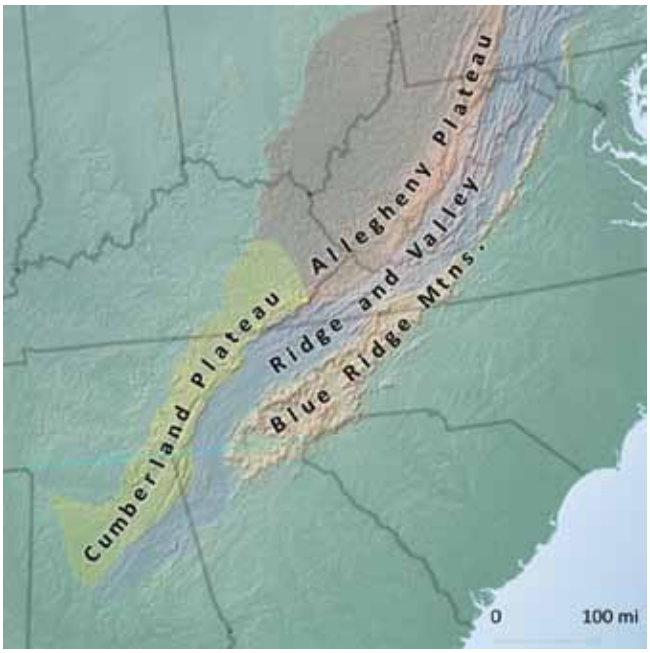


Figure 1. Geographic regions of the Appalachian physiographic division.

The result of over 80 years of land conservation in the South Cumberland region is a scattered collection of heavily used public landholdings and private conservation easements. Solely, these lands are not large enough to meet the increasing demands placed on today's forests and natural areas. In addition, many of these lands lack connectivity with other protected lands, which is critical for wildlife movement and other ecosystem processes. Therefore, expanding and linking existing protected lands in the South Cumberland region to create an ecologically functional landscape that simultaneously preserves important cultural and economic values is a goal of local, regional, and national interest.

To move us closer to this vision, new public acquisitions and strategic private conservation measures will be critical. Protection of lands with significant ecological values will also be important for preserving a cultural heritage that is firmly rooted in the rugged natural landscape. In many parts of the Southeast, urban and suburban areas are expanding as quickly and aggressively as anywhere in the United States. The South Cumberland region is surrounded by metropolitan areas including Huntsville, Nashville, At-

Regional Planning Efforts

This document represents a comprehensive conservation planning process specific to the South Cumberland region that builds on previous regional planning efforts.

Alabama	Conserving Alabama's Wildlife: A Comprehensive Strategy (2005) Alabama Statewide Comprehensive Outdoor Recreation Plan 2008–2012 (2008) The Forever Wild Land Trust: An interim report to the citizens of Alabama: 1992–2009 (2010) Forests at the Crossroads: Alabama's Forest Assessment and Resource Strategy (2010)
Georgia	A Comprehensive Wildlife Conservation Strategy for Georgia (2005) Georgia Statewide Comprehensive Outdoor Recreation Plan, 2008–2012 (2007) Georgia Statewide Forest Resources Assessment and Strategy (2010)
Tennessee	Cumberlands and Southern Ridge & Valley Ecoregion: A Plan for Biodiversity Conservation (2003) Tennessee's Comprehensive Wildlife Conservation Strategy (2005) Tennessee Heritage Conservation Trust Fund: A Preliminary Assessment of Needs (2006) The Cumberland Plateau National Heritage Corridor Feasibility Study (2006) Tennessee 2020: Vision for Parks, People, and Landscapes (2009) Tennessee Forest Resource Assessment and Strategy (2010)

lanta, Chattanooga, Knoxville, and Birmingham, all poised for substantial growth in the coming decades. Now is the time to come together and protect a way of life for the South Cumberland region.

Regional Conservation Plan

The South Cumberland region can be geographically defined in many different ways. However, the total area considered during this planning process was nearly four million acres and includes portions of Tennessee, Alabama, and Georgia. Meetings were held during 2009 and 2010 that included a wide range of stakeholder groups from the entire region. The first meeting was to solidify the planning area and the scope of the process. The second meeting was to discuss the results of landscape analyses completed by SEI. Several smaller meetings were held for each focal area to solicit input from experts on specific conservation priorities in each focal area. The third group meeting was to develop overarching strategies that the conservation community could implement together. In all, over 30 governmental and nongovernmental organizations, in addition to many concerned citizens, contributed to the process.

The primary goals of the planning effort were to:

1. Describe the global importance of the South Cumberland region's natural heritage and cultural significance;
2. Establish a set of locally developed conservation priorities and overarching strategies for achieving landscape scale conservation results; and
3. Produce a document that fosters improved communications between conservation organizations and local stakeholder groups to develop a shared vision for protecting a way of life in the South Cumberland region.

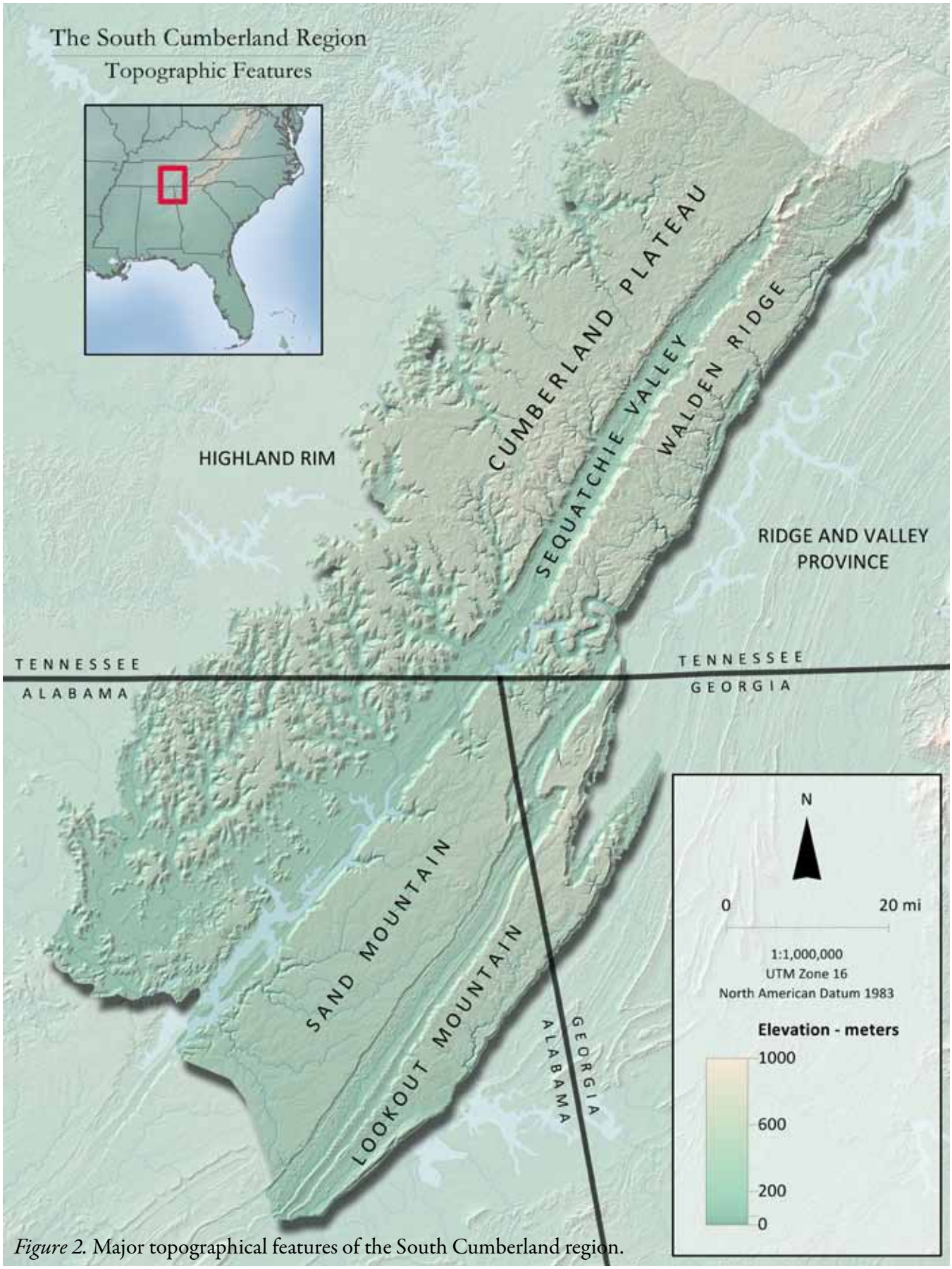


Figure 2. Major topographical features of the South Cumberland region.

A Living Legacy: The Biological Heritage of the South Cumberlands

The biologically rich hardwood forests of the Cumberland Plateau in Alabama, Georgia, and Tennessee are among the highest conservation-value forests remaining in North America today. Defining the western extent of the Southern Appalachian Mountain region, the Cumberland Plateau provides critical Neotropical migrant songbird habitat and supports one of the most biologically diverse freshwater systems found in North America. The region is also widely recognized as a global biodiversity hotspot for amphibians, land snails, cave fauna, and vascular plant communities.

For its remarkable ecological diversity, the Cumberland Plateau is often compared to its more well-known neighbor to the east, the Southern Blue Ridge Mountains. However, unlike the Southern Blue Ridge where vast areas are set aside as National Parks and National Forests, the extensive forests of the plateau are mostly privately owned. The South Cumberlands region is over 90% privately owned. Major changes in land ownership and land use patterns are on the verge of reshaping this largely unprotected landscape, presenting one of the greatest modern conservation challenges in North America.

In this section, we explore the unique characteristics of the Cumberland Plateau that have contributed to the extraordinary ecological richness that exists today. First, we consider the physical environment which provides the foundation for a wide range of ecological habitats. Then, we examine the natural and human-related processes that have shaped the plant and animal communities that occupy these habitats.

Sculpted by Water

Over millions of years, the sandstone cap of the Cumberland Plateau has been eroded by flowing water, creating deep cuts into the plateau surface known regionally as gulfs or coves. Of the nearly four million acres that comprise the South Cumberland region, approximately 30% of the land is cove topography and 50% is plateau surface, and the remainder includes low-lying areas such as the Sequatchie Valley. In some places the water cascades over the edge of the tabletop, forming spectacular waterfalls such as the magnificent Fall Creek Falls, which, at 256 feet, is the tallest waterfall in the eastern United States. In other places the water tumbles slowly over the edge of the plateau down through shaded coves. Sometimes the water disappears from a stream altogether

as it descends into the vast subterranean network of caves that underlies the plateau, eventually reemerging from springs at the base of the plateau.

Water plays a critical role in the creation and definition of the wide range of ecological habitats across the plateau. On the plateau surface and in the coves, variation in soil depth affects the water holding capacity of the ground. Shallow soils, especially those in and around rock outcrops, are the most drought-prone. Inhabiting these sites is a unique suite of species specially adapted to these harsh conditions. In the coves, differences in sunlight exposure and associated temperature variations affect soil moisture. South-facing slopes receive the greatest amount of sunlight and as a result are drier than north-facing slopes. Each supports very different plant communities.

The composition of the soil is also a critical factor determining water availability. The plateau is a

geological layer cake. The bottom of the cake consist of limestone and shale layers, whose chemical composition contribute to the nutrient rich, moisture-holding clay soils found in the coves. On top of the cake is a relatively thin layer of sandstone from which the nutrient poor, droughty, and very acidic sandy soils on the plateau surface are derived.

Reflecting these soil and moisture differences, the plateau and cove ecological communities are strikingly dissimilar despite being directly adjacent to one another. Less than 25% of the vascular plant species found on the plateau surface are also found in the coves, and yet both are equally biologically rich. It is the juxtaposition of these two contrasting environments that make the Cumberland Plateau such a hotspot of biodiversity.

Plateau Surface

Spread across the forest soil of the plateau surface is a thick carpet of roots. Trees concentrate their fine roots at the soil surface to intercept rainwater and nutrients filtering down through the decaying leaf cover. Some of the important nutrients in soil, such as calcium, enter the forest system only as a result of the slow accumulation from rainwater over many hundreds of years. Since the soil dries out from the top down, having roots close to the surface makes forest communities even more prone to water limita-

tion in the summer. The shallower the soil, the more extreme the conditions posed by drought.

In general, the forest canopy of the plateau surface is a mixture of oak and hickory species with chestnut oak common on ridges and bluff edges, and scarlet, black, and white oak more common on slopes and flats. Sourwood, sassafras, black gum, and red maple are also found in the canopy and subcanopy. The understory of the plateau forest is composed of a variety of woody shrubs including blueberries, wild azalea, and mountain laurel along with a large number of grasses, sedges, and fall blooming composites. Shortleaf pine, Virginia pine, and post oak are associated with shallow soil areas along south facing slopes, bluff edges, and surrounding sandstone outcrops.

A sandstone outcrop is perhaps the most extreme habitat found on the plateau surface. Open, glade-like conditions persist where the underlying sandstone is exposed and only a thin veneer of soil is present. Some the plateau's rarest species inhabit these sites. Here, an entire community of specialized annual plants goes through a complete life cycle during the winter and spring while spending the drier summer and fall in hibernation as seeds. Sandstone outcrops are also home to the primitive-looking fence lizards, scorpions, and reindeer lichen.

At the other end of the moisture spectrum, streams slowly meander across the surface of the plateau, cutting deep into the plateau soils. Hummingbird-pollinated cardinal flowers can be found growing in the stream channels, which also provide habitat for a wide variety of invertebrates such as crayfish, caddisflies, and stoneflies. Streambanks are often lined with sphagnum moss, violets, and thick patches of yellowroot, and serve as corridors for wildlife movement. At the headwaters of streams, one can often find dense swamp forest composed of red maple, black gum, and sweet gum trees with an understory populated by a variety of wetland shrubs and herbaceous species, including the tall cinnamon ferns, royal ferns and rare orchids.

Dotting the plateau surface in places of poor soil drainage are vernal pool wetlands, formed by the accumulation of rainwater in the late fall and winter. In the late spring and early summer, evapotranspiration associated with the surrounding forest causes the pools to dry up. These tear-drop shaped pools

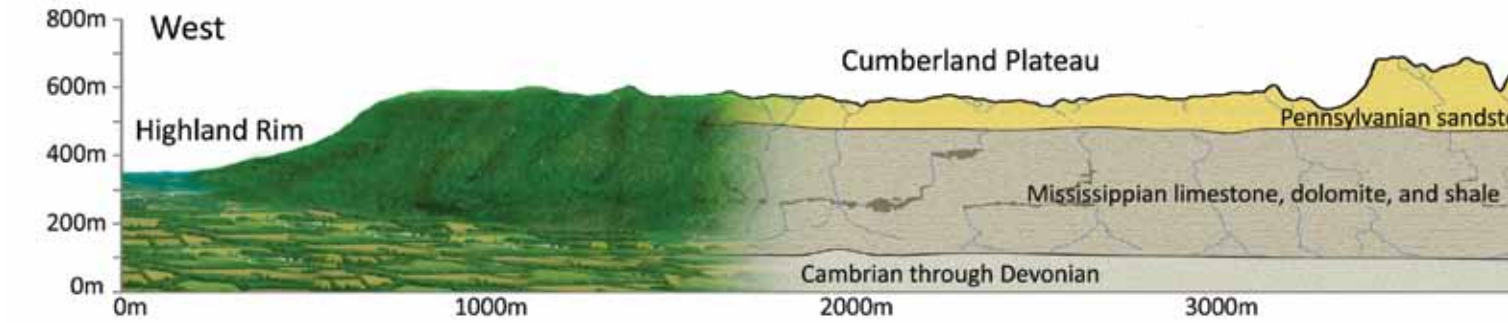
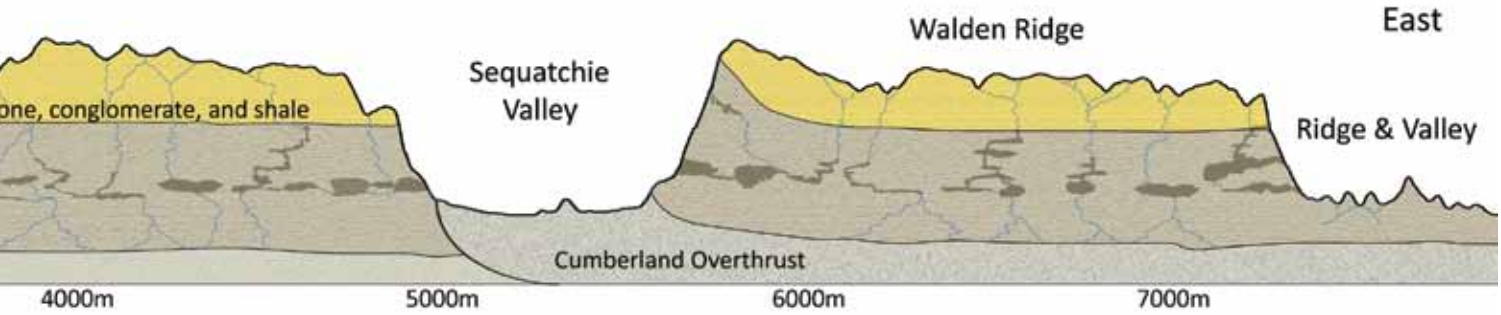


Figure 3. Cross-section and geology of the Cumberland Plateau.

are usually well under an acre in size and rarely more than a meter deep. Although vernal pools are too small to be included in the U.S. Fish and Wildlife Service's National Wetlands Inventory, they provide critical habitat for a variety of wetland-dependent plant and animal species.

In November, marbled salamanders make their pilgrimages to the dry pools to lay eggs under logs and newly fallen leaves. Females subsequently stay nestled with their bodies curled around their eggs until the water finally returns by December. On the first mild, rainy night in February, spotted salamanders make their way from the surrounding upland forest to the pools to lay eggs in large gelatinous masses in the water. Both marbled and spotted salamanders will travel hundreds of meters to return to their ancestral pools. Tree frogs, toads, and spring peepers also breed in these pools, creating pleasing amphibian music on late spring evenings.

It is the ephemeral nature of the pools that allows



them to serve as successful breeding areas for wetland species. The annual drying of the pools prevents the establishment of potential predator species such as fish and bullfrogs which require permanent water bodies to maintain populations.

Bluffs and Coves

When you descend over the plateau bluff and down into a cove you enter a completely different environment than on the plateau surface. The coves are shady, damp, and protected from wind. The soils are deeper and more fertile. The towering forest canopy, such as can be found in Shakerag Hollow in Sewanee, Tennessee, is a diverse assemblage of tree species including buckeye, tulip poplar, basswood, shagbark hickory, and sugar maple. Here the forest is structurally complex, with many layers of understory trees, shrubs, and vines.

The cool, north facing slopes harbor the rich spring wildflower flora for which the Southern Appalachians are famous. From March through May there is a spectacular display of trilliums, mayapples, bloodroots, larkspurs, and many other species in glorious succession. On the warm, sunny south-facing slopes, there are fewer herbaceous wildflowers and a variety of woody plants adapted to drier conditions.

Limestone outcrops found on these south facing slopes have an unusually rich plant community. With their characteristic jagged gray rocks festooned with massive clumps of resurrection ferns and ancient, gnarled red cedars with roots wrapped around and embedded among the limestone boulders, the limestone outcrops are unmistakable. The giant swallowtail butterfly, whose larvae feed exclusively on the leaves of the wafer ash, and a number of rare species, including the smoketree and the federally protected painted snake-coiled snail, inhabit these rocky sites.

Just below the plateau bluffs, layers of sandstone project horizontally, forming another noteworthy habitat called rockhouses. Before the arrival of European settlers, Native Americans used these overhangs as shelters while using the plateau surface as hunting

grounds. Living within the cracks of these shaded and well-protected rock walls is the rare green salamander, whose specially adapted feet allow it to complete its entire life cycle on this vertical habitat. This lichen-colored salamander emerges only twice each year to find a mate and migrate to new locations. Rockhouses also provide special habitat for a number of rare plants, including the filmy fern which can persist in the darkest location of any known plant.

As the sandstone cap on the Cumberland Plateau has weathered over many millennia, large sandstone boulders have broken free and tumbled into the coves, creating another plant community unique to the region. The tops of these boulders are inaccessible to browsing deer. In the spring, these boulder tops are carpeted with purple phacelia and later in the fall with the globally rare Tennessee leafcup.

Streams in the cove often start as waterfalls cascading over the bluff then continuing on through ravines sometimes to disappear abruptly into a sinkhole. Sinkholes serve as entrances to a vast system of caves that extend for hundreds of miles and underlie most of the plateau. Jackson County, Alabama, has the highest concentration of caves of any county in the United States. The biodiversity of these caves is extraordinary. Many rare species of crayfish, bats, cave salamanders, and insects are specially adapted to this subterranean lifestyle, and new species discoveries are still being made.

At the base of the plateau, the streams reemerge from their subterranean journey. In watersheds such as the Paint Rock River and Little Sequatchie River, the exceptionally clean water provides habitat for some of the highest concentrations of endangered land snails, freshwater fish, and mussel species in the world.

Diversity and Disturbance

It should be clear by now that one of the things that makes the Cumberland Plateau such a biologically diverse region is the wide variety of habitats that are distributed across the landscape. This is an ancient landscape, one that escaped the ebb and flow of glaciers during the ice ages and served as a refuge for northern plant and animal species that eventually recolonized New England and Canada. In the cool deep coves of the plateau, such as found in Fiery Gizzard, many of these northern plant species such as striped maple and yellow birch still persist.

As with every ecosystem on Earth, there are natural and human-related disturbances that cause changes in forest ecosystems. Such changes result in the deaths of some organisms which in turn create opportunities for the establishment of

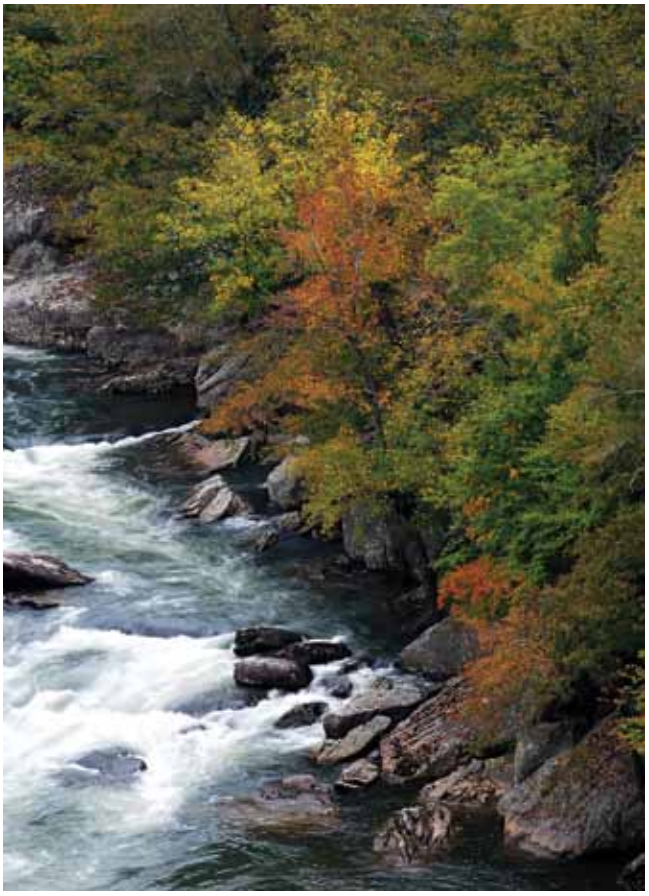
new organisms. Each type of disturbance varies in intensity, spatial extent, and frequency. Forest species throughout the world have evolved in response to disturbances such as wind and ice damage, flooding, insect outbreaks, and fire. For many forests, these different disturbance regimes are a defining feature, allowing characteristic species to flourish and the forest to regenerate. Some disturbances, including human alterations, can promote ecological diversity while others may decrease it. Accounting for and preparing for disturbance is an important consideration in landscape-level conservation.

Both prehistorically and historically, fire has been part of an important disturbance regime on the Cumberland Plateau. It is believed that both natural fires and anthropogenic fires started by Native

Americans were a continual part of the disturbance regime of the plateau landscape for thousands of years. Many of the woody plant species of the plateau surface manifest distinct adaptations associated with fire, such as root sprouts (sassafras, black locust) and root collar sprouts (oaks). With the arrival of European settlers and the railroad in the late 1800s, fire frequency actually increased across parts of the Plateau. From the mid-1900s to the present, with the widespread policy of fire suppression, fire frequency has dropped dramatically. This has contributed to a decrease in the native pine component of plateau forests and to changes in density for certain oak species.

The southern pine bark beetle and fire are part of a natural disturbance regime affecting pine forests on the plateau surface. On an approximate ten to 20 year cycle, this native beetle species infests native shortleaf and Virginia pine stands resulting in increased mortality of older pines. In the past, pine stands containing standing dead trees, such as those infested by the beetle, were more likely to succumb to fires caused by lightning. These fires, in turn, promoted the germination and establishment of young pines. Therefore, this natural cycle of pine beetle infestations and fire helped maintain pine as a natural component of plateau forests.

The extensive proliferation of non-native loblolly pine plantations on portions of the plateau surface along with global warming trends have contributed to epidemic pine beetle infestation levels in recent years, which in turn has dramatically increased mortality in native pine populations. This increased mor-



tality coupled with fire suppression has interrupted the age-old cycle of beetle infestation, fire, and pine regeneration, contributing to the widespread loss of native pine habitat across the plateau.

The Cumberland Plateau has been occupied by humans for thousands of years, first by Native American hunters, then by European settlers. Over time, human activities have directly and indirectly shaped the forest landscape of the plateau. Land use changes involving agriculture, forestry, and residential development have led to the fragmentation of forests and the reduction of habitat quality, particularly for the forests on the plateau surface. Predator removal, overbrowsing deer, exotic species introduction (such as the chestnut blight and hemlock woolly adelgid), and fire suppression all represent ways in which human activities have indirectly impacted forest composition and structure across the Cumberland Plateau landscape.

Forests naturally change over time and the plateau forests have demonstrated resilience to disturbances, both natural and human-related. However, when the spatial extent, intensity and frequency of human disturbances become too great, then forests are lost and species disappear. It is the slow accumulation of many such disturbances over time that eventually brings a region to a tipping point where the loss of natural heritage becomes irreversible. While this has happened in many places throughout the world, such is not yet the case for the Cumberland Plateau.

Across the plateau, much of the native flora and fauna is still intact. Unlike in New England and other temperate deciduous forested areas of the world, the forests of the plateau still possess their original soil structure, having never been fully converted for agriculture or other human land uses. A relatively large percentage of plateau forest is in a mature and healthy state, where tree species populations are experiencing natural cycles of births and deaths.

We are at a critical juncture in the history of the Cumberland Plateau for conservation of its natural heritage. The forest communities of the Plateau currently face an ever increasing array of human-related disturbances that will eventually lead us to an ecological tipping point. However, with deliberate measures taken now, we can avoid the ecological losses experienced in other parts of the country and safeguard the plateau's precious natural heritage for future generations to come.

Plateau Past and Present: Preserving our Cultural Heritage

The Cumberland Plateau is a remarkable place with a distinct landscape of coves and broad plateaus that provide unique microenvironments for an impressive number of diverse species. But we are hardly the first to realize this. The ancestors of Native Americans occupied the Cumberland Plateau region soon after they first arrived on this continent well over 13,000 years ago.

Hundreds of prehistoric archaeological sites throughout the South Cumberland region have uncovered artifacts such as stone tools, fragmented pottery, cave art, and petroglyphs. These artifacts and their distribution, both across the landscape and in the layers within the sites, allow archaeologists to understand how these cultures interacted with the land and environment. Evidence of short and long term habitation, stone quarrying, special plant processing areas, and places designated for rituals, bear witness to the long and dynamic history of human presence in the Cumberland Plateau region.

The earliest immigrants to the region were likely attracted to the rich resources including the mature oak-hickory forest, the high quality stone well-suited for tool making, and the abundant rivers and their resources. Groups hunted and foraged throughout the region, following seasonal changes in food and other essential resources. Around 4,000 years ago, some groups of people began to cultivate native plant species, ultimately domesticating many of them. This is also the time we see the first pottery in the region. The invention of pottery was likely linked to plant processing including cooking and storage.

By about 800 AD, maize introduced from Mesoamerica and the American Southwest significantly changed social organization and settlement patterns. Native peoples began living more sedentary lifestyles, congregating in population centers in the fertile river valleys. During this time the Cumberland Plateau likely became less populated. Use of the plateau was limited to forays to collect seasonal resources, primarily nuts, and specialized ritual practices that resulted in an unusually high concentration of prehistoric pictographs and petroglyphs along the bluffs and deep within caves.

Little is known about the earliest contact between Europeans and indigenous peoples in the South Cumberland region. However, by the latter portion of the 16th century, interactions are well documented. In the years leading up to European settlement, Creek and Cherokee societies used the plateau, which rested on the periphery of their lands. When Cherokee chiefs signed their Kentucky and Tennessee lowlands to land speculators in the 1775 Treaty of Sycamore Shoals, a resistant group of warriors led by the Cherokee Chief Dragging Canoe, withdrew to the region of the Cumberland Plateau around Lookout Mountain. They became known as the Chickamaugas. Using a complex system of trails connecting their five strongholds along the Tennessee River Gorge, the Chickamauga waged guerilla war on the increasing influx of colonists until 1794 when they were forced to disband into the obscurity of the plateau's backwoods.

Frontier: The Pioneer's Saga

Once the Cumberland Gap was first surveyed in 1750, the Cumberland Plateau embodied the American ideal of the "Southwest Territory"—the Frontier. The plateau was a final, 1,000-foot impasse to the fertile lowlands of Kentucky and Tennessee, and to the access roads to the Deep South. Between 1775 and 1800, 300,000 pioneers made the journey through the plateau's gaps and gorges, making it one of the largest migration sites in the nation's history. However, only a small number of settlers chose to go across the plateau rather than around it, and even fewer chose to carve out homesteads on the plateau itself. Much like the Cherokee they displaced, settlers burned forest underbrush to keep woods open for grazing, and used caves, rockhouses, and other unique features of the Cumberland landscape for shelter and containing livestock.

We are mountain people.
We are a boorish set, they tell us –
Hard-bitten, coarse of feature and of speech,
Shallow and brawling as the mountain streams,
With morale friable as our sandstone.

All my life I have wanted to tell them:
That we are mountain people,
That mountain streams have pools of deep quietness,
And that beneath the sandstone of our hills
There is granite.

—Leonard Tate

Mountain People

Euro-American settlement began on the Cumberland Plateau after 1806 and Dearborn's Treaty, in which the Cherokee nation was forced to relinquish its rights to a large region of Tennessee which included the Cumberland Plateau.

The poem here by Leonard Tate, once proclaimed as the Poet Laureate of Grundy County, Tennessee, captures the depth of character of the Euro-American mountaineer settlers of the Cumberland Plateau. They were an independent lot. They carefully sited their homes near the purest freestone spring they could find, and built their homes with logs hewn from the great forests around them. The settlers' lives were mostly spent outdoors, where they delighted in the wonders of nature and the wildlife they hunted and fished to sustain themselves and their families.

Mountaineers developed small sustainable farms. The crops grown were mostly for their own consumption. They often established small farming operations on the benches or shelves on the sides of coves. There, the soil was rich and far more fertile than on the top of the plateau. They almost always ran hogs, which could sustain themselves on acorns and other plants that abounded within the forests. Pork was a staple of the mountaineer's diet. It also provided the drippings of the women's cookery, such as gravy for biscuits, grits, and other grain products.

The cabins of the mountaineers were far apart. They developed friendships with one another, but they did not relate to each other in the sense of community. Their isolation fostered self reliance and independence. They tended to unite only in cases of dire emergency. As a result much of the economic enter-

prise on the Cumberland Plateau has been driven by outsiders.

The Era of Coal

Coal was discovered on the plateau circa 1845. The railroad industry was in early stages of development in the South. Indeed the line from Nashville to Chattanooga was under construction in 1850 when an Irish immigrant named Leslie Kennedy discovered outcrops of coal while hiking in the South Cumberland region. A group of investors from New York assembled by the venture capitalist Samuel Tracy purchased large tracts of land surrounding the location and formed the Sewanee Mining Company. The vision of the Sewanee Mining Company was to provide coal to markets from Nashville south to Chattanooga, Savannah, and Charleston.

A railroad spur from the main line of the Nashville and Chattanooga Railroad was one of the first tasks to complete. Among the initial investors was an engineer named A.E. Barney. He engineered a rail line at Cowan that climbed up the plateau for six miles at a grade of 112 feet per mile, the steepest of any railroad in the world at the time. It would come to be nicknamed "The Mountain Goat."

Mining began in 1856 in an area known as Coal Banks. There was little coal there and what was there was of poor quality. In 1857, after the land proved unprofitable for coal mining, the Sewanee Mining Company offered 5,000 acres of land to the trustees of the Southern Dioceses of the Episcopal Church for the establishment of a southern university, today known as the University of the South. The Sewanee Mining Company extended its line ten miles through forested land to the site of the original coal discovery near Tracy City where more suitable sources were found. The first coal was shipped from Tracy City on November 8, 1858.

The new industrialized South had its origin in the coal, coke, iron, and steel operations of the Cumberland Plateau. The success of this industry had a major

Sarah Sherwood
Professor of Anthropology
The University
of the South

Cumberland Voices: *Clues About Our Past*

I have been conducting archaeological surveys and excavations on the Cumberland Plateau for over ten years, and I never cease to be amazed by the evidence we find here and the potential for this record to allow us to explore both our past and our future.

As prehistoric Holocene climate changed so did cultural responses. While we have carefully documented these changes elsewhere, we know little about how climate shifts affected prehistoric populations on the Cumberland Plateau. What kind of changes occurred in their resource availability and how did innovation in settlement patterns, tool technology, and foodways help these communities adapt? Some of the earliest evidence for indigenous plant domestication in North America comes from the Plateau. Understanding the motivation to produce and process food has the potential to help reveal our own sustainability on this planet.

The potential for the archaeological record to provide answers seems limitless here on the Plateau. But we must be judicious as we seek to uncover the past for this is a finite record. And as we try to reconcile our need for more resources in our ever-expanding society we must also find a way to protect these important sites that are not only our past but potentially our future.

impact upon the people there. Strife and tension between Cumberland Plateau coal mine owners and miners was a chronic continuum.

Between 1870 and 1896, the State of Tennessee effectively subsidized the mining industry by leasing prisoners at low rates under the so-called "Zebra Law." The free miners of the plateau could not compete and were forced to suffer low wages. Miners were also paid in script, which required them to spend their wages in the company store, and were further required to sign contracts that prohibited strikes. Arthur St. Clair Colyar, president of Tennessee Coal and Iron Company, the successor to the Sewanee Mining Company, declared the convict leasing system to be "an effective club to hold over the heads of the free miners." The practice of convict leasing was finally abolished after many incidents of violence and conflict over the practice.

Suppression and exploitation of the free miner labor force by the mining companies created a fertile field for the organization of the United Mine Workers of America in 1890. A new culture was developed on the plateau where the formerly independent, self reliant and isolated subsistence farmers, hunters, and fishermen became united in the pursuit of their collective economic lot.

Labor strife, marked by violence and murder, continued for decades. In Tracy City, the Tennessee Consolidated Coal Company replaced TCI, but refused to enter into a contract with the organized miners, choosing instead to employ nonunion miners. Two nonunion miners cleaning an entrance to one of the mines in Tracy City were shot and killed. Thereafter the homes of both union and nonunion miners were fired upon and National Guard Troops were ordered into Tracy City. Not until July 1906 did the union miners and Tennessee Consolidated Coal Company enter into a contract.

In 1985, coal mining in the South Cumberland region ceased due to the inferior quality of the coal and persistent labor conflicts. The end of the coal mining era was marked by the closing of "The Mountain Goat" rail line. Today, the abandoned railroad right-of-way has become the focus of a conservation group called the Mountain Goat Trail Alliance, which is in the process of converting a seventeen-mile long section of the railroad right-of-way between Cowan and Palmer into a multi-use recreation corridor. The first phase from Sewanee to St. Andrew's preparatory school is complete and plans are now underway for the next two phases, connecting Sewanee to Monteagle, then Tracy City.

Coal's Indelible Mark

Mining operations left an indelible mark on the Cumberland landscape. The operations included not only subterranean mining, but also strip mining whereby the land surface was excavated open by machines to reach the coal. The productive forests that formerly grew on the land where the surface was altered did not return. Frequently, grasses were planted and the land was developed into pastures for the grazing of cattle. In some areas, pits had been created to extract the deepest coal reserves. Many pits filled with water and became lakes and reservoirs for public and private use.

Another reminder of the plateau's coal mining history is the presence of coke ovens. These beehive structures were built near the mines to burn coal into coke. Coke was used in blast furnaces to smelt iron ore into pig iron for the manufacture of iron products or for use in the manufacture of steel. These structures dot the South Cumberland landscape, and in some cases have been preserved by the state for public education and historical preservation.

The coal mining industry brought about a change in the traditional land ownership patterns on the Cumberland Plateau occasioned by the division of land ownership rights into two parts: the land surface and the minerals below. The rights of the land surface owner were subordinate to the mineral owner's rights to exploit the property. Thus, an owner of the surface could be subjected to the construction of roads to enable access to the minerals, or even the partial removal of the surface through strip mining.

The division of the fee simple ownership of the land has allowed investors and speculators to purchase partial property rights and force a legal partition among the multiple owners. This process has often forced a judicial sale of the whole land parcel, driving the original owners off the land. This can have significant effects on preservation of the cultural heritage of a region when family ties to the land through generational ownership are broken.

The Forest as Bounty

The Euro-American pioneers on the Cumberland Plateau, as well as their Native American predecessors, were dependent on the forest. The forest provided them with building materials for their homes, fuel for heat and cooking, game for hunting, and shelters for their livestock. The forest was the most important part of their environment, and supplied the isolation that supported their independence.

The upland soils, the early settlers quickly discovered, were too sensitive for aggressive forestry and too infertile for intensive agriculture. Winter burning of the forest, possibly a continuation of a Cherokee practice, kept the woods open for grazing animals and stimulated greater springtime growth of browse. In the fall, swine were fattened on the abundant hardwood forest mast. This grazing and the anthropogenic fires that accompanied it, affected the forest canopy structure and species composition.

The timber industry first became a major driver of economic and land use change on the Cumberland Plateau during the period from 1880 to 1920 known as the "Big Cut." During this time period, large tracts of land were acquired by timber interests. Most of the large or virgin timber was cut, and only timber in the most remote areas was spared. Lumber mills were established and provided employment for people who began clustering in community centers. Isolation of the people began to disappear but their independent spirit remained.

Samuel H. Werner, Sr.

While it is likely that some of the timber harvests were clear-cuts, particularly those that accompanied coal mining, much of the harvesting selected only the commercially desirable trees from the forest, leaving the less valuable trees and tree species to generate the next stand. The most pronounced effects were seen on top of the plateau, where nutrient poor soils and lack of water made forest recovery slower. By the 1960s, the plateau forests had likely endured two or more periods of selective cutting. With reduced economic value, the remaining forest stands were left to recover, becoming more dense and unbroken, harboring the diversity of natural habitats we see today.

One of the largest lumber mills in Tennessee during this period was the Sam Werner Lumber Company in Tracy City. Established by a Swiss immigrant in 1885, the Sam Werner Lumber Company owned thousands of acres on the Cumberland Plateau, including 3,400 acres in Savage Gulf at the height of operations. In 1974 heirs of the Sam Werner Lumber Company sold their holdings in Savage Gulf, which included a 500-acre old growth forest, to the State of Tennessee as part of the newly created South Cumberland State Recreation Area. This helped launch a new era of land conservation in the South Cumberland region aimed at preserving important areas for recreation and protection of the region's unique natural beauty.

Several paper companies established pulp mills in the region during the 1970s, and subsequently industrial

Jess Wilson
InTown Organics

Cumberland Voices: *A Place for Small Farms*

Agriculture on the Cumberland Plateau exists, as I imagine it always has, on a subsistence scale. The soil quality is variable and water is less plentiful than it is in the adjoining valley. There are no large tracts of arable land that can feed masses of people. Rather, agriculture exists as hundreds of very small farms and backyard gardens where people interact with the soil, care for plants and animals, feed themselves, and share their excesses with their neighbors.

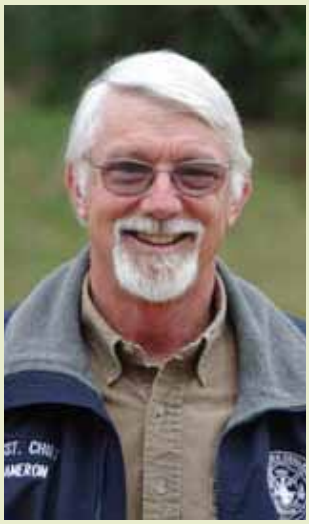
These very small farms are an important part of the landscape and of an emerging local food economy. While product quantities from individual farms remain low, the quality is often very high, allowing farmers to sell their excess for a reasonable return. I don't know anyone on the plateau who is making a living by farming but I do know many people who are able to enjoy farming as a part of their life.

forestry companies acquired vast landholdings on the plateau. On the surface of the plateau, clearcutting of large tracts of predominantly native hardwood forest was followed by planting faster growing non-native pine monocultures to supply the paper mills. Due to the relatively low productivity of the forests on the plateau surface, industrial landowners turned to pine plantations to increase their return while many private landowners continued hardwood logging practices that had already proved detrimental to sustained quality timber harvests.

In the past decade, most of the large industrial forestry companies have sold their landholdings, substantially shifting regional land ownership patterns. The majority of their lands were purchased by timber investment management operations, development interests, and land speculators. The State of Tennessee acquired several tracts near state parks and intends to restore most of the pine monocultures to native habitat types.

Many of the private landowners who purchased land formerly managed for industrial forestry operations have working forest conservation easements on their land. A conservation easement is a legal agreement between a willing landowner and a nonprofit land trust or governmental entity that permanently limits development of the land in order to protect specified conservation values. The property remains with a private landowner, who may continue to live on it, sell it or pass it on to heirs, which allows local families control over the future of their land.

Not only do conservation easements protect open space values, such as wildlife habitat, ecological diversity, and forest beauty, but they can also provide economic and community benefits including water quality protection and the production of sustainable forest products. The Land Trust for Tennessee currently holds over 15,000 acres of working forest conservation easements in the South Cumberland region.



Doug Cameron
Commissioner
Sewanee Utility Disrict

Cumberland Voices: *Water and Growth*

Throughout the plateau's modern history, water was supplied mostly by wells, both private individual and community, which had a bad tendency to go dry during the occasional droughts. From the 1950s through the 1990s, regional utility districts were formed and reservoirs were constructed to provide more dependable water sources. During this period, many regional governments encouraged population growth as a way to solve the region's chronic economic depression. The population growth did not seem to challenge the area's water systems, and at the dedication of the University of the South's Lake O'Donnell reservoir, the Vice-Chancellor said, "It looks as if our water supply problem is solved for all times."

Then came the drought of 2007. Tracy City and Sewanee were supplying Monteagle, and Monteagle laid a temporary above-ground pipe to a reservoir on a new 1,300-lot development. Before the rains finally returned, Tracy City and Sewanee had each reached 60 days of remaining water and had cut off the supply to Monteagle in order to guarantee availability for their own customers.

Proposed solutions to the water availability problem are expensive both financially and environmentally. We have always believed that there was plenty of water for everyone and that it was the responsibility of the cities and utility districts to manage that resource responsibly. Perhaps it is tiime to consider that there is simply a limit to growth here on the Mountain.

The Plateau as Refuge

With the official closing of the frontier in 1890, the public reaction against the cold efficiency of the Industrial Revolution, and the wave of Romantic poetry exalting America's rugged landscapes, the Cumberland Plateau acquired a lofty mystique and became a new "Arcadia." It was, in many ways, the most immediate and mysterious "wilderness" beyond the Appalachian gaps. The plateau was exalted as a spiritual and intellectual escape for the eastern seaboard's stifled urban populations. The South's poets and literary elite congregated here, in such places as the University of the South in Sewanee and the Monteagle Chautauqua Assembly.

In the latter half of the 19th century, Switzerland and other European nations chose the plateau as the site for new settlements to relieve their own domestic economic problems. Facing chronic economic depression and overpopulation, the Swiss Emigration Society sent emissaries to the United States in 1867 to locate suitable locations for colonies. Eugen Plumacher, one such emissary, came to Tennessee upon recommendation from President Andrew Jackson. The forests and rolling hills of the plateau were reminiscent of Switzerland and inspired him to choose a site on the plateau near Savage Gulf.

The first Swiss families arrived in 1869. The Swiss were farmers. They cleared the heavily forested land and enriched the thin plateau soil with lime brought from the base of the plateau, and made it surprisingly productive. They established an agricultural society and developed extensive records that are today housed at the Tennessee State Library and Archives. The immigrants flowed from Switzerland until about 1920. Today, many of the descendants of the first Swiss settlers have remained in Grundy County and become business professionals and community leaders. The Swiss Historical Society of Grundy County maintains a working Swiss farm of about 30 acres from which it conducts an annual celebration supported by the Swiss embassy in Atlanta.

In 1880, a utopian community envisioned by British author and social reformer, Thomas Hughes, was established at Rugby in Morgan County. Concerned for the younger sons of British families where the eldest son usually inherited everything leaving the younger sons with few acceptable occupations, Hughes believed the younger son's energies and talents could be channeled toward community building through agriculture. While it flourished for a few years, the British colony suffered financial hardship, land title problems, and unusually severe winter weather. By 1900 many of the original colonists had left. Individuals have since struggled to keep the colony alive. Following a revival in interest in the colony in the 1960s, Rugby has been added to the National Register of Historic Places and today operates as a historic district, attracting visitors year round.

Preserving Our Cultural Heritage

Today, cultural preservation efforts in the South Cumberland region provide us with glimpses of the historic plateau environment and elements that molded the character its people. The Grundy County Historical Society has developed a Heritage Center located in Tracy City, providing a central location for gathering plateau history and cultural heritage. The Beersheba Springs Historical Society, Chikamaka Cultural Preservation Organization, Monteagle Sun-

day School Assembly, and Swiss Historical Society of Grundy County, to name a few, are also active partners in preserving the cultural heritage of the South Cumberland region.

The people of the Cumberland Plateau are no longer physically isolated. First the railroads and more recently the interstate highway system have exposed the plateau to the outside world. People are drawn to the plateau for its solitude, spectacular natural beauty, and strong sense of history. Today, the plateau and its people struggle with a new influx of immigrants, including retirees and second home owners. Balancing the preservation of the South Cumberland region's cultural heritage with desires and pressures of economic growth is an important challenge for the communities of the South Cumberland region in the coming decades.

Today's Plateau

As much as it has been shaped by human activity, the Cumberland Plateau today remains a mostly wild and rugged landscape. It serves as a refuge not only for diverse natural communities, but also as a refuge for a culture firmly rooted in the experiences of the region's earliest settlers. It is a place for recreation and spiritual renewal, an escape from the stresses and pace of our modern lifestyles. The notion of the plateau as a frontier or wilderness still captures the imagination of people today.

The Cumberland Plateau has long been a "working landscape," a land upon which humans have relied for food, wood, and other natural resources for thousands of years. Native American tribes used the Cumberland Plateau as a common hunting ground. European settlers and the communities that they formed depended on the forests for timber and game.

Robin Gottfried
Director of Center for Religion and the Environment & Professor of Economics at The University of the South

Cumberland Voices: *What Do Our Forests Mean to Us?*

They link us to our past and to who we are. We hunt, hike, ATV, ride horses, camp, gather ginseng, and marvel at the life we see and the sight of looming bluffs. We remember who lived 'here' and whose mama and papa lived 'there.' They have helped make us who we are. They also shape who we will be. For the most part, factories and industry won't locate atop the plateau because of transportation difficulties. Our jobs of the future depend, therefore, on what we and our forests offer. Our children probably will rely on sustainable forestry and the amenities (the hiking, views, recreational opportunities) our forests provide. These amenities attract retirees, vacation home residents, telecommuters, hikers, tourists, birdwatchers, and campers, all of whom can provide a local market for goods and services.

If we're not careful, we will lose the very things that make our land attractive and productive. Sustainable forest management, conservation subdivisions, ecotourism and heritage tourism all offer ways to grow economically while maintaining many of the forest values we cherish. Our forests speak to us of the next life. Many of us feel closer to God in the out-of-doors than almost any place else. The saints talk about the Book of Creation, which speaks to us of God and God's ways. It's our cathedral. We need our forests to sustain our spirits and to inspire us to reflect in the way we live the goodness of the God who made us.

Today this notion of a working landscape lives on through the small family farms and working forests throughout the region. Hunting has also remained as an important cultural experience reminding the local people of their dependence on the forests. The landscape itself remains as an integral part of the cultural heritage of the people.

Economic and social changes that we have seen throughout the United States seem to be imminent threats to the continued existence of a culture that continues to embody the uniquely American notions of the frontier and wilderness. Historically, communities depended on the forestry, mining, and agricultural sectors for their primary sources of employment. Between 1990 and 2000, employment in farming and forestry declined 72.5% . Today's economy is driven by the manufacturing, transportation, construction, and service industries. The transition has challenged the region's families and communities. Many local residents now commute to larger towns and metropolitan areas, such as Chattanooga, while preferring to live and recreate in their hometowns where they were born and raised.

In part, the demands of the landscape itself, its challenging topography and limited water resources, have been factors that have shielded the culture from such outside influences. The question remains whether pressures today are in some way different than those of the past.

Limitations to Growth

One of the greatest environmental and economic crises facing the South Cumberland Plateau today is the increasing demand for water resources. In 2007, Tennessee suffered a drought of record in many parts of the state, with some of most severe occurrences in the South Cumberland region. The region managed through those extreme conditions by establishing temporary sources and purchasing water from adjacent utilities; however, there was a desire to be better prepared for this kind of resource scarcity, as well as the stress that growth and development are placing on water resources in some communities.

In 2008, the Tennessee Department of Environment and Conservation partnered with the U.S. Army Corps of Engineers—Nashville District, U.S. Geological Survey, The Nature Conservancy, the Tennessee Advisory Commission on Intergovernmental Relations, other state and federal agencies and regional planning experts, including the Land Trust for Tennessee, to initiate a water resources planning pilot in the South Cumberland region. The goals of the pilot study included:

- Ensuring the ability of water resources in the region to sustain all uses;
- Recommending source, conservation, and efficiency alternatives to meet water supply needs of pilot areas for at least the next 20 years;
- Providing information for capital financing and management planning;
- Providing information for development and growth decisions; and
- Serving as model for regional water resource planning statewide.

Possible solutions were explored and evaluated by utility districts, political leaders, and the community

during the course of the pilot study, which confirmed the need for additional water source development to meet the regional demand projected for 2030. Ultimately, the decisions made about water resources will have direct impacts on local economies and land use patterns throughout the region. These decisions will also influence strategies needed to protect the natural and cultural heritage of the region.

The Forests Today

A 2010 study by the Sewanee Environmental Institute indicates that in the nearly 4 million acre South Cumberland region, an estimated 2.83 million acres (71%) are forested today. Large expanses of forest on the surface of the plateau are primarily found on the main section of the plateau in Tennessee and on Walden Ridge where 800,000 acres (67%) of natural hardwood and mixed hardwood/evergreen forest exist. The surfaces of the disjunct Cumberland Plateau sections to the south called Sand Mountain and Lookout Mountain, with soils and topography better suited for crop and pasture, have 370,000 acres of forest (47%) on the tableland. Ill-suited for agriculture, residential use or intensive forestry, the steep and rugged coves remain a remarkable 95% forested.

Forest fragmentation, the process by which large, contiguous areas of forest are broken into smaller areas by the introduction of human-related disturbances, is considered one of the most significant challenges to biological conservation today. The forest interior, the deep woodland area most secluded from the effects of human development, typically provides critical habitat for the most rare and unique species in a region. For purposes here, the forest interior is defined as the forest area at least 100 meters from incompatible land uses such as major roads and developed areas. The extent and configuration of these unfragmented, roadless forest areas is a commonly used indicator of ecosystem health and the ability of the landscape to sustain populations of plant and animal species.

In the South Cumberland region, we find some of the largest areas of interior forest on privately owned land in the eastern United States. The region has 1.26 million acres of interior forest. Larger interior forest areas are better able to protect ecological communities that rely on those characteristics of interior forest. Large forested areas over 500 acres account for nearly half of forest area in the region. The existence

of these large forest areas presents a great opportunity for ecological conservation.

A Wilderness Sanctuary

For generations, the plateau's wilderness has served as a spiritual retreat for residents and visitors. Weighing the spiritual importance of this landscape against more tangible economic and biological assets is a challenging, though necessary, valuation. One certainty, however, is that this region's spiritual and cultural lifeblood flows directly from the plateau land itself.

The aesthetic value of the landscape matters most to residents of the plateau. Once taken for granted in southern rural communities, a childhood spent outdoors are increasingly absent as neighborhood forests disappear and youth spend less time outdoors. Not surprisingly, future growth in the South Cumberland region is intimately tied to its dedication to sustainability and open space protection. Often, the aesthetic values of landscapes are only appreciated after access is lost and few places remain for residents to get outdoors.

The Cumberland Plateau has a rich history of working class families and communities nestled in the coves and on top of the plateau. Like many rural areas of the South, these residents take pride in their hometown schools and local churches. It is the scenic beauty and access to the outdoors that is the heart and soul of the local people. Whether fishing in farm ponds, streams, rivers, and lakes or hunting the large forested tracts on the plateau, most plateau residents engage in some type of outdoor recreational activity, even if it's just sitting on the back porch and soaking up the sounds of nature.

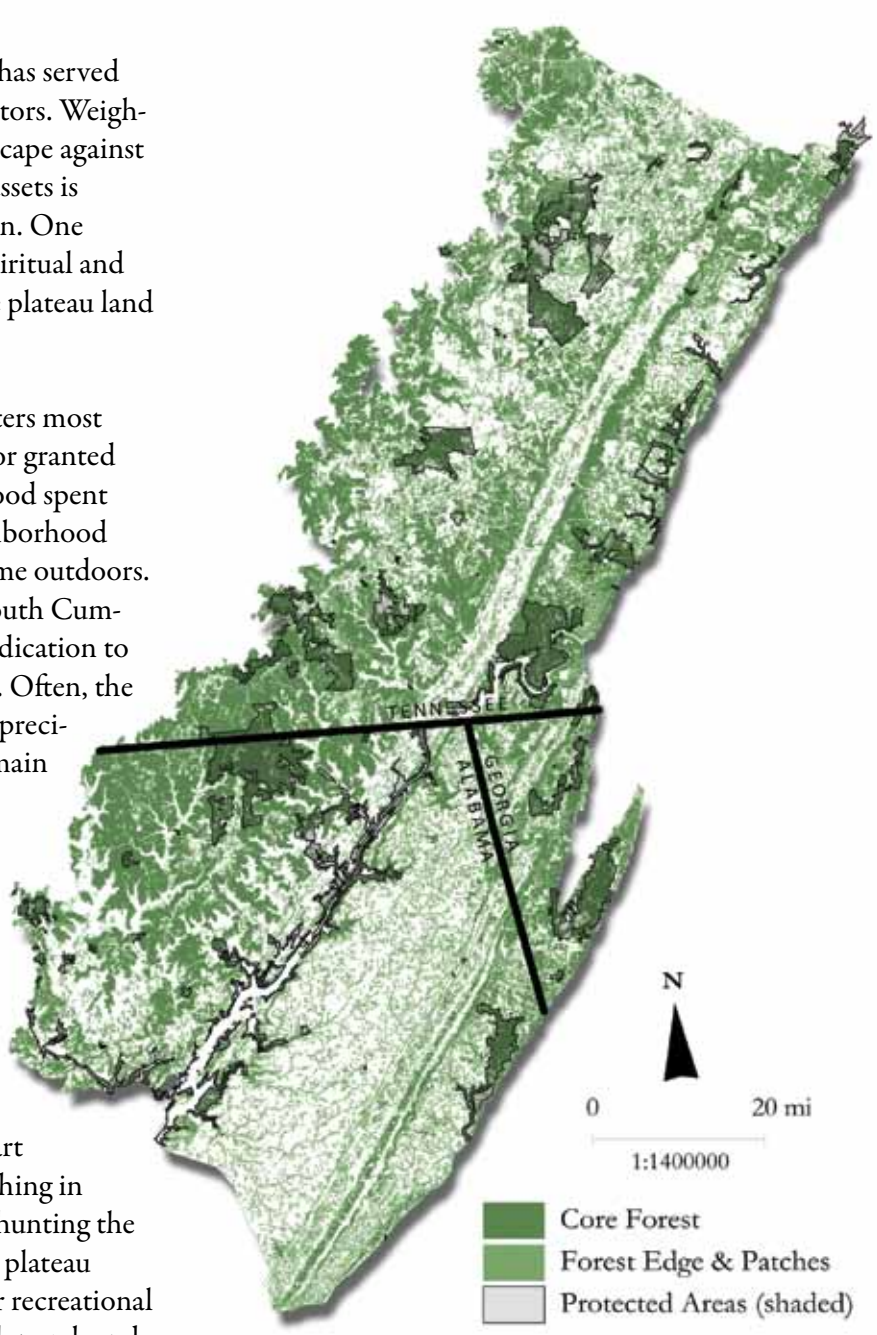


Figure 4. Extent of core forest areas in the South Cumberland region.

Hunting

Hunting is a popular pastime of local residents and visitors to the plateau, where habitat for game animals including deer, turkey, rabbit, squirrel, and raccoon, is abundant. For families that have lived in the region for generations, hunting is an essential

connection to the land, the forest, and the past. It is not the hunt itself, but the more intimate moments shared between fathers, sons, and friends while scouting the woods for signs of game, waiting quietly on a crisp autumn morning, or telling stories around camp fires, that are the most cherished.

Deer season on the plateau lasts from September to January. Before the season begins, when the September air becomes a bit drier, fathers and sons start their annual scouting expeditions, looking for signs of deer, such as buck rubs, scrapes, and deer trails. During deer hunting season, thousands of hunters spend time and money preparing their gear, hanging tree stands, and communicating with fellow hunters about what they have seen while scouting. Hunting is very much a social pastime in the South Cumberland region.

Turkey season comes around each spring to the plateau. As with deer hunting, it is important to get into the woods before daylight and sit quietly. Most hunters would agree that you become distinctly aware of your senses when in the woods on a crisp April morning as the sun starts to come over the mountains. Listening intently for hours at a time, there is nothing like the feeling of hearing a wild turkey suddenly "cut loose." Turkey hunting is also a shared experience, as most people like to hunt in pairs.

Where streams have eroded the plateau surface and created cuts into the otherwise steep bluffs, wildlife travel between the cove and the plateau surface forests. These "draws," as they are known locally, not only serve as corridors for wildlife movement, but also provide exceptional views into the gulfs and coves below and are favored locations of hunters. Hunting in the plateau forests is a different experience than hunting in other regions where hunters sit on the edges of large fields and can see thousands of yards. Hunting on the plateau requires experience and skills more similar to what the earliest settlers must have needed.

Todd Crabtree
Botanist
TDEC

Cumberland Voices: *Discovering Nature*

Since I was a small boy I have been visiting the South Cumberland region. Hiking down into the gorges provided me with a multitude of opportunities for discovering the wonder and variety of nature. Initially, these trips were just fun times with my cousins to swim and explore the streams. We caught crawdads and saw other interesting animals but only the most obvious plants caught our attention. The trail was, for the most part, only a way to get to the swimming hole.

In the decades that followed, a more detailed view has been revealed through seemingly idle hours of relaxing walks and careful study. Many others have experienced the same gradual revelation. The first joy at discovering a beautiful place to enjoy the outdoors is replaced with an appreciation for the sanctity of a natural wonder that needs no improvement. Those who have grown up without any significant contact with nature can have a more sudden and overwhelming experience. They soak all that beauty in at once and it cracks open a part of themselves that they didn't know was there. Some will be inspired to delve deeper and rejoice in the amazing biological diversity of this area.

As more people make their own discoveries, the places that they discover and learn to love become frayed and worn as many feet tread the same path. For this reason there will always be a need for more special places that are reserved just for appreciation and individual enlightenment.

In the South Cumberland region, there are 164,000 acres of heavily used public land available for hunting. These lands are managed by agencies such as the Tennessee Wildlife Resource Agency, Tennessee Division of Forestry, Alabama Department of Conservation and Natural Resources, and Georgia Department of Natural Resources.

The South Cumberland region also has a substantial amount of private hunting land. In the Tennessee section of the South Cumberland region, private hunting lands mapped for this conservation planning effort total over 278,000 acres. Land management activities and access to hunting are usually managed by the numerous hunting clubs in the region. In recent years, the subdivision of many large tracts for development has reduced the amount of land available for hunting. A common complaint among most hunters these days is that they have no place to go and feel safe in the woods. The loss of access to hunting in the Cumberland Plateau is a loss of cultural identity and cultural heritage.

Tourism and Outdoor Recreation

Despite an abundance of natural resources, the extraction of these resources from the landscape has had limited economic benefit to the local people. Beyond such conventional resource management, however, there is another form of land use that has grown into a thriving economic staple of many local economies worldwide: eco- and heritage-based tourism. The State of Tennessee and local communities in the region are beginning to explore ways to capitalize on the unique cultural and natural heritage of the plateau that are both economically and environmentally sustainable.

Eco- and heritage-based tourism mirrors the historic link between local businesses and land stewardship in a new business model that is sustainable, profitable, and culturally critical. Beyond its direct economic benefits, visiting natural and cultural heritage areas improves the physical and mental health of its citizens.

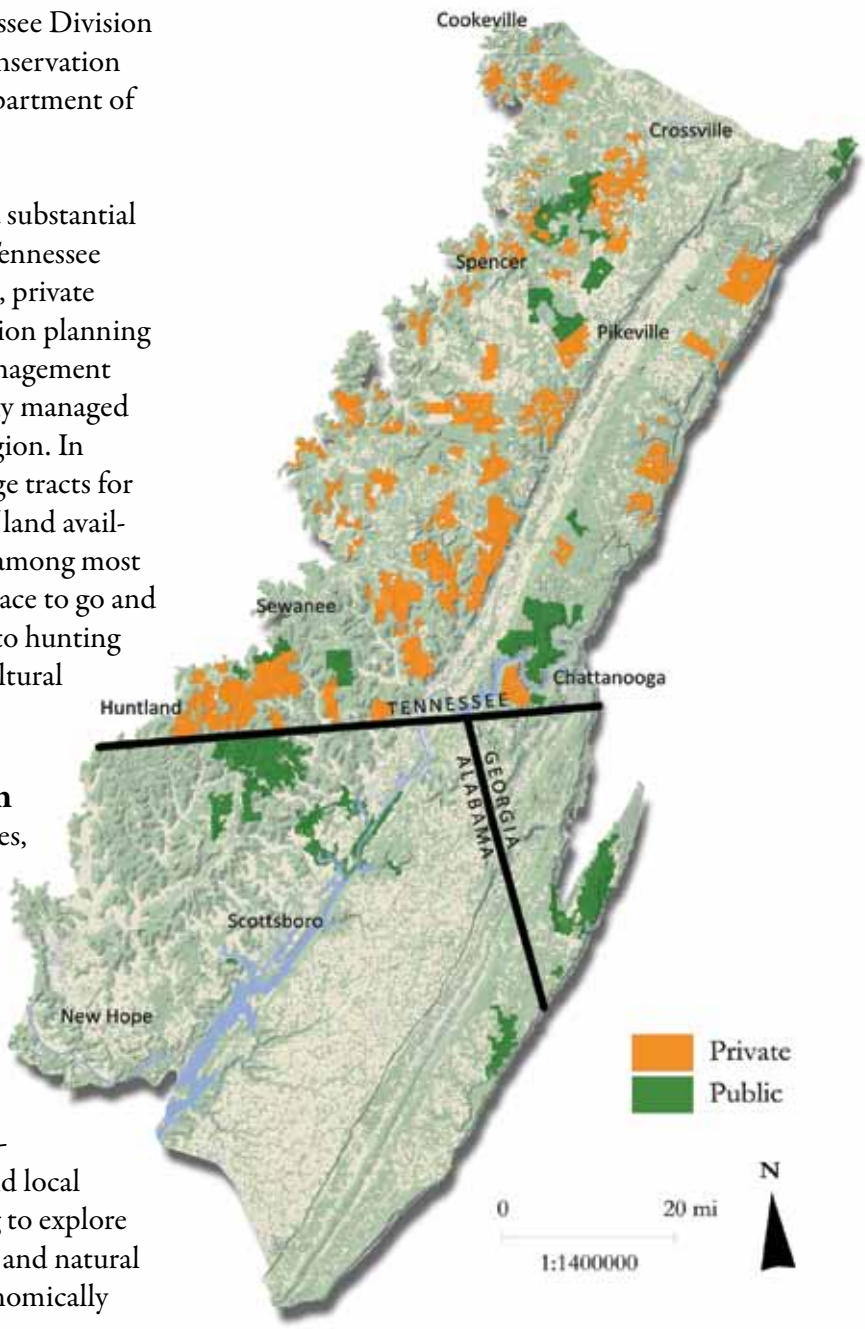


Figure 5. Public and private hunting land. Note that extent of data for private hunting land is limited to the Tennessee portion of the South Cumberland region

A recent study by the University of Tennessee Institute for Agriculture highlights the significant economic benefits that eco- and heritage based tourism have for local communities and the state. In the 2008-2009 fiscal year, an estimated 16.9 people visited Tennessee's 53 State Parks. Considering both direct and indirect expenditures, it was estimated that these visitors contributed $1.5 billion to the state's economy, supporting over 18,600 jobs. Given that the State of Tennessee budgets $41 million for State Parks operations and maintenance, for every dollar expended by the State, over $17 in direct visitor expenditures and over $37 in total economic impacts are generated. The tourism industry is the second largest employer in the United States today. Given the abundant opportunities for recreation and tourism, the South Cumberland region is poised to serve this growing market.

The topography of the South Cumberland Plateau provides a wealth of hiking experiences, ranging from gently rolling trails on top of the plateau and along the gulf rims to challenging climbs through the rugged gorges themselves. Hikers can find sandstone-capped pinnacles, natural bridges, boulder fields, mountain streams, swimming holes, and numerous waterfalls that tumble into the coves and gorges. Savage Gulf, Fiery Gizzard, the Walls of Jericho, Fall Creek Falls, and Cumberland Mountain State Park are just a few of the many state-owned natural areas renowned for their hiking and camping areas. The Cumberland Trail, a work in progress, will follow the length of the Cumberland Plateau along Walden Ridge, passing through eleven Tennessee counties. Over 180 miles of the trail, planned to be approximately 300 miles in total length, are already complete and accessible to the public.

The biological diversity of the Cumberland Plateau makes the region particularly attractive to ecotourists. For example, the forests on the Plateau host one of the more diverse communities of breeding birds in the United States, with a particularly rich array of neotropical migrant birds such as warblers, tanagers, and vireos. Because the Plateau forms a relatively continuous North-South corridor of forested habitat from Alabama up to Kentucky, bird-watching during the spring and fall migration is particularly spectacular and annually attract many visitors to the region.

The rivers and reservoirs surrounding the plateau are recreational hotspots, with amenities such as marinas, guest lodges, campgrounds, and docks. The South Cumberland region serves as the headwaters for the Elk River, Sequatchie River, Paint Rock River, Caney Fork River, and the Collins River. The many creeks and rivers of these watersheds provide ample opportunities for whitewater recreation.

The roads of the plateau, with their low speed limits and low traffic volume are ideal for road cycling. The plateau itself has become a destination for mountain bikers all over the Southeast. Many cycling clubs use these roads and trails for training, charity fundraisers and officially-sanctioned race events.

The Cumberland Plateau is also a nationally renowned region for rock-climbing. An outstanding array of both steep sport climbs and traditional crack climbing are found high on the rims of the plateau's spectacular gorges. Savage Gulf, Foster Falls, Tennessee Wall, Suck Creek Canyon, Sunset Park, Buzzard Point, and Laurel Falls, to name a few, are all well known rock-climbing areas in the region.

Two state scenic byways cross the South Cumberland region: the Sequatchie Valley Scenic Byway and the Southern Cumberland Plateau Scenic Byway. These serve as routes on Tennessee's Cumberland

Plateau Nature Trail, a self-guided motor tour of the Cumberland Plateau's best nature and scenic viewing opportunities (www.cpnaturetrail.com).

History of Land Conservation

Interest in land conservation in the South Cumberland region has remained vibrant since the 1930s. From the early to mid-20th century, state governmental agencies in Alabama and Tennessee initiated conservation efforts by establishing several new public landholdings, including such iconic places as Fall Creek Falls State Park, Prentice Cooper State Forest, and James D. Martin—Skyline Wildlife Management Area. Beginning in the late 1970s, a second wave of new public landholdings was initiated which included the establishment of Savage Gulf State Park. During this period, newly formed partnerships between nonprofit conservation organizations and state governmental agencies were a key part of the conservation movement. Nonprofits were instrumental in linking the interests of state agencies to private landowners considering the sale of their land, and to raising private funds necessary to leverage public funding for conservation.

These partnerships remain strong today and are still the primary means for achieving landscape scale conservation goals in the region. Newer public landholdings like the Cumberland Trail State Scenic Trail, Bridgestone Firestone Centennial Wilderness, and Bear Hollow Mountain Wildlife Management Area are a direct result of state governmental agencies working closely with nonprofit conservation organizations. In addition, several well established state landholdings have expanded in recent years. Places like Savage Gulf State Park, Skyline Wildlife Management Area, Fall Creek Falls, and Grundy Forest State Natural Area have recently added tens of thousands of acres of high conservation value forestland through effective public-private partnerships.

The result of over 80 years of land conservation in the region is a sizeable network of public landholdings and private conservation easements. Solely, these lands are not large enough to meet the increasing demands placed on today's forests. In addition, many of these lands lack connectivity to other protected lands, which is important to maintaining wildlife and ecosystem function. Therefore, a great deal of interest remains locally, regionally, and nationally on expanding and linking existing protected lands in the region into a functional landscape that maintains both ecosystem function while providing important cultural and economic values. The South Cumberland region remains as one of the last remaining opportunities to conserve an intact forested landscape in the southeastern U.S.

Conservation Areas

The South Cumberland region is remarkable for both its ecological diversity and its enduring cultural heritage. In the cool, deep gorges and extensive forestlands, visitors discover a place of recreation and renewal. The numerous small communities of the South Cumberland region cherish their way of life, value their connections with the past, and rely on the region's natural resources. Careful planning and collaboration between the many individuals and organizations that comprise the conservation community will be essential to the preservation of the diversity of values embodied by the South Cumberland region.

The conservation community has taken the first steps in a new comprehensive regional conservation planning process, as evidenced by this document. Over 30 partner organizations have come together through a series of meetings and workshops held across the South Cumberland region to share their visions and ideas for regional conservation. Each organization brought its own unique experience, expertise, and values to the table. A goal of this planning process is to identify areas of common ground and find new opportunities for collaboration.

To that end, this initial planning effort has led to the creation of seven unique Conservation Areas in order to focus attention on those portions of the South Cumberland region where conservation needs and conservation opportunities are greatest. The Conservation Areas were delineated based on a regional analysis of environmental and public benefit values combined with expert knowledge of the landscape. Each area represents unique ecological habitats, cultural sites, and environmental services.

The Conservation Areas serve as distinct geographic units for organizing members of the conservation community. The designation of Conservation Areas suggests opportunities for collaboration and coordination, and places where the conservation community can build on past successes. Furthermore, the Conservation Areas also provide logical boundaries for future intensive sub-regional analyses to identify and prioritize conservation opportunities.

Although these areas will provide focus for the conservation community, the boundaries are not absolute or exclusive. Many sites exist outside of the conservation areas which may be important for

enhancing ecological diversity or cultural heritage preservation. Creating connections between Conservation Areas to support an ecologically functional landscape is particularly important. The ultimate goal of the regional planning process is conservation at the landscape scale. While working towards this goal, it is important to address the unique needs of different areas of the plateau. At nearly four million acres, the South Cumberlands is a region too large, too complex, and too diverse to be treated as a single indivisible unit.

Building Blocks for Conservation

Like many areas of the eastern United States, the South Cumberland region is over 90% privately owned. Protection of ecological systems and cultural sites often requires careful coordination among multiple landowners to achieve conservation goals. Today, approximately 340,000 acres of land are considered to be protected. These lands include, among others, state parks, wildlife management areas, and land with private conservation easements. Many of these protected areas in the South Cumberland region are becoming more isolated from one another due to fragmentation of the landscape. Fragmentation is caused by a variety of human-related activities and not only directly reduces habitat extent, but impairs ecological functions across the remaining natural habitat areas. In the South Cumberland region, it is not possible to create a single contiguous preserve that is large enough to protect the diversity of landscape values.

The vision for conservation in the South Cumberland region is a network of sites that includes large core areas and corridors or linkages that provide connections between the core areas like spokes on a wheel. The large core areas serve as refugia for the diversity of natural communities of the region, while the linkages provide critical ecological functions, such as wildlife movement, and even shifting species distributions in response to climate change. Simultaneously, these core areas and linkages can maintain their ecological functions while supporting compatible uses, including recreation and historical preservation.

The building blocks for this network already exist in the South Cumberland region. The larger public lands in the region created through past conservation efforts, such as Fall Creek Falls State Park and the South Cumberland State Park, can serve as core areas. These core habitat areas need to be large enough to protect wildlife populations and complex ecological processes, and withstand natural and human-related disturbances. The conservation community is working today to expand these core areas through the protection of adjacent lands, which provide a sort of buffer from natural and human-related disturbances.

Identifying Conservation Areas

A fundamental tool of modern conservation planning, particularly for a landscape as large, complex, and diverse as the South Cumberland region, is the geographic information system (GIS). A GIS not only provides a means for visualizing and stor-

ing large quantities of data, it also serves as a tool for complex spatial analysis and modeling to aid in resource management and planning. The first step towards identifying and delineating conservation areas was the development of a GIS to describe and quantify the diversity of landscape values in the South Cumberland region.

The Sewanee Environmental Institute created such a GIS for the South Cumberland region to inventory the natural, cultural, economic, and other values represented by the land and forests of the region. Many geospatial data resources were provided by organizations participating in the planning effort. Data resources were combined to create useful geospatial data sets, such as the location and extent of lands managed by state or nonprofit organizations. Efforts were made to fill critical knowledge gaps through the creation of novel geospatial datasets, such as the locations of private hunting lands, and the extent of forest interior areas.

The geospatial data resources created were then used to identify large public landholdings or large roadless forest areas that could serve as cores for the Conservation Areas. Using these areas as focal points, the Conservation Areas were expanded to encompass nearby areas including: 1) existing protected natural areas; 2) unprotected large core forest areas; 3) important cultural and heritage sites; 4) state wildlife action plan (SWAP) priority watersheds and terrestrial zones; and 5) watersheds important for water quality and aquatic habitat protection. Major natural and man-made barriers, such as topographic boundaries and interstate highways were also identified.

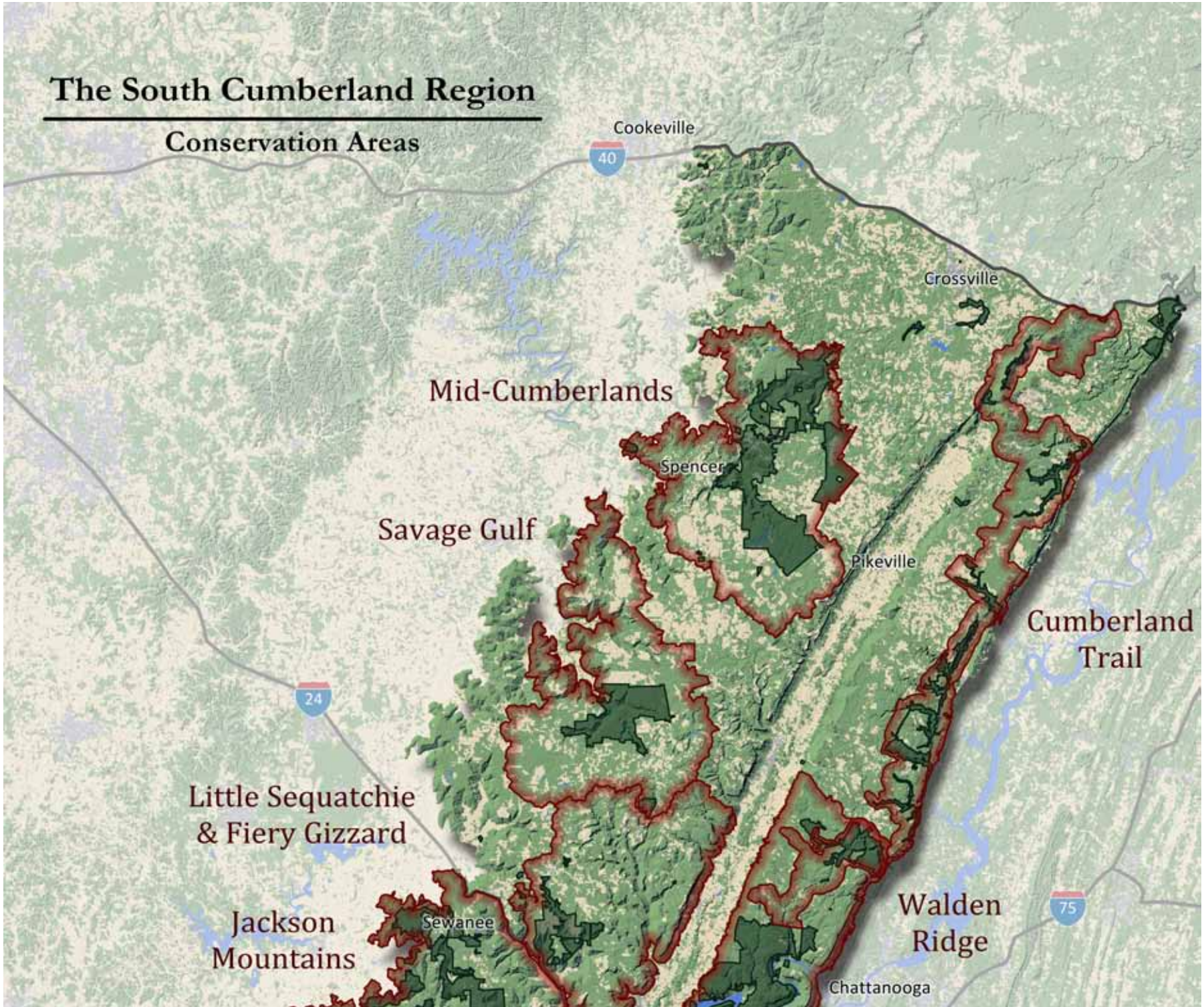
This initial analysis resulted in a draft set of Conservation Areas for the region. These Conservation Areas were further refined through a series of meetings for each individual Conservation Area in which experts from participating organizations could provide further guidance. The boundaries were then revised to reflect their input.

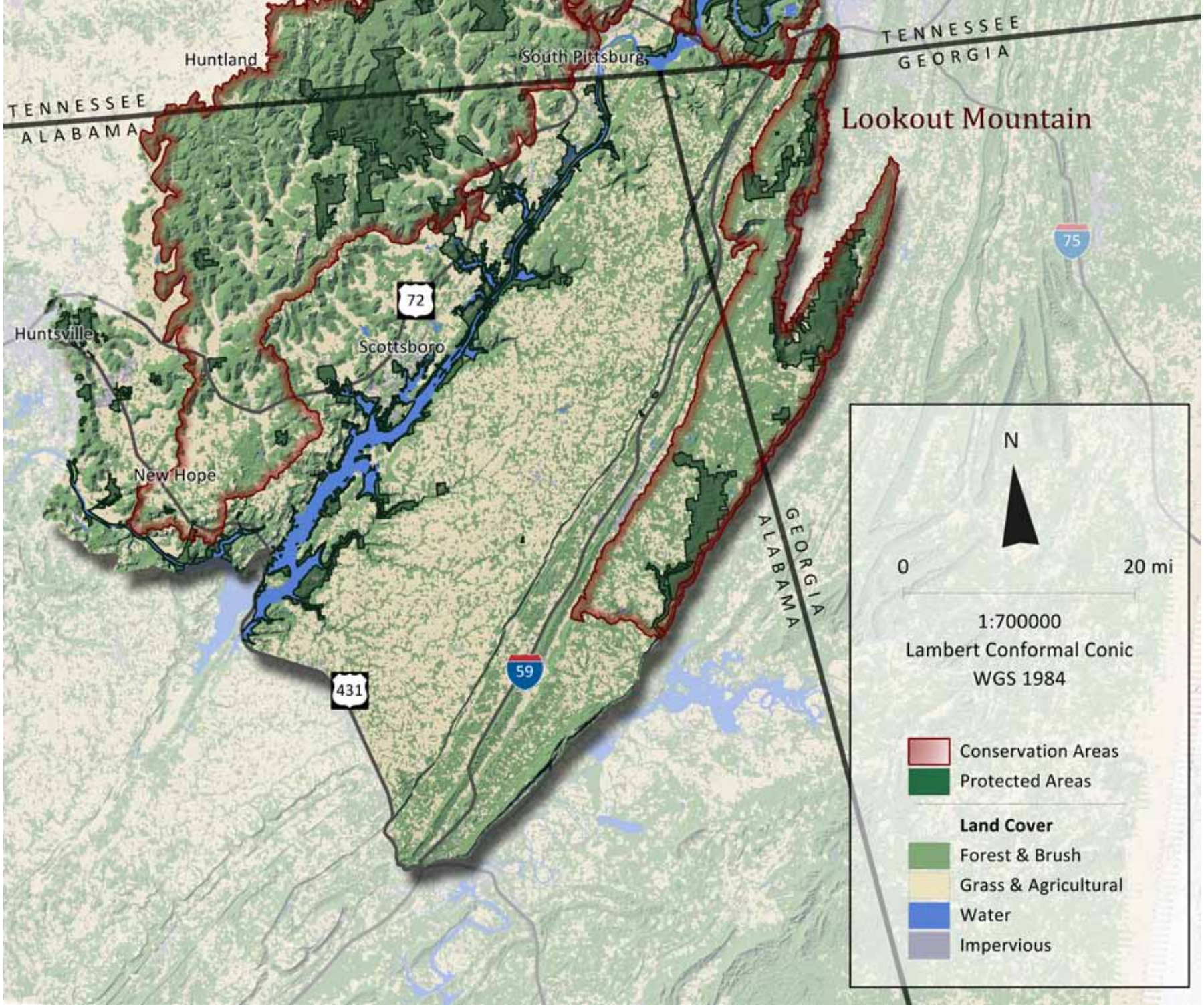
In the end, seven distinct Conservation Areas were created. These conservation areas do not reflect the end of a process, but the beginning. The assessment

of landscape values is not complete and must continue in order to provide the conservation community with the information resources necessary to best direct their attention. In the future, the GIS for the South Cumberland region will be expanded to account for other important landscape values and will provide a basis for quantitatively assessing conservation opportunities and planning options.

In the following pages, we describe the individual Conservation Areas in more detail based on contributions from the partner organizations working in those areas, including public land managers, leaders of conservation organizations, and local citizen leaders. These descriptions are not intended to be comprehensive, but provide a brief snapshot of the diversity of values that are represented within each Conservation Area and the region in general.

Figure 6. (Following page) Conservation areas of the South Cumberland Region.


The South Cumberland Region
Conservation Areas
Cookeville
40
Crossville
Mid-Cumberlands
Spencer
Savage Gulf
Pikeville
Cumberland Trail
24
Little Sequatchie & Fiery Gizzard
Jackson Mountains
Sewanee
Walden Ridge
75
Chattanooga


TENNESSEE
GEORGIA
TENNESSEE
ALABAMA
Huntland
South Pittsburg
Lookout Mountain
75
72
Huntsville
Scottsboro
New Hope
GEORGIA
ALABAMA
59
431
N
0
20 mi
1:700000
Lambert Conformal Conic
WGS 1984
Conservation Areas
Protected Areas
Land Cover
Forest & Brush
Grass & Agricultural
Water
Impervious

Jackson Mountains

Covering over 600,000 acres, the Jackson Mountains Conservation Area is one of the most biologically rich regions in North America for aquatic and subterranean organisms, and encompasses one of the largest privately-owned roadless forest areas in the eastern United States. It is here that the Cumberland Plateau nears its southern terminus and the sandstone cap of plateau has nearly completely dissolved and crumbled into a complex network of gorges and ridges. With tumbling streams and waterfalls, steep bluffs, dense forests, and parch sandstone outcroppings, the highly dissected landscape yields an exceptional diversity of ecological habitats that have remained mostly intact since the region was first settled.

The Jackson Mountains Conservation Area includes the remarkable Paint Rock River watershed. The Paint Rock River watershed is a breathtaking example of the rich biological diversity found in the Southern Appalachian region. Jackson County, Alabama,also has the highest concentration of caves of any county in the United States, totaling more than 1,500 known caves, and has the highest concentration of paleoindian archaeological sites in the United States.

The Jackson Mountains Conservation Area is also a recreational paradise. Public hunting and horseback riding opportunities are available at Franklin State Forest, Bear Hollow Mountain Wildlife Management Area, and James D. Martin Skyline Wildlife Management Area. The Paint Rock River is a frequent destination for canoeing and rafting enthusiasts. Rock climbing and bird watching are also popular throughout the region. Revenue from tourism-based activities is vital to the economy of local communities near the Jackson Mountains Conservation Area.

Key Protected Lands

The Jackson Mountains Conservation Area has great potential for linking a number of existing protected lands into a functional conservation network. There are approximately 100,000 acres of protected lands in the Jackson Mountains Conservation Area, including Carter Cave State Natural Area, Fern Cave National Wildlife Refuge, Franklin State Forest, Hawkins Cove State Natural Area, Bear Hollow Mountain Wildlife Management Area, James D. Martin Skyline Wildlife Management Area, portions of the University of the South landholdings, and

several private tracts protected through conservation easements with The Land Trust for Tennessee. A significant number of extensive, privately-owned forested tracts that adjoin publicly managed lands remain throughout the conservation area.

Ecological Importance

According to the State Wildlife Action Plans completed by Tennessee and Alabama (2005), an unusually high number of rare terrestrial, aquatic, and subterranean species can be found here. All together, 26 rare plant species can be found in the Jackson Mountains Conservation Area. Due to the karst topography created by the dissolution of limestone rock layers underground, a complex network of thousands of caves supports one of the most diverse assemblages of cave obligate species in the world.

With over 100 species of fish and 45 mussel species, the Paint Rock River has long been considered by aquatic biologists to be a critical conservation area.

Several of the fish and mussel species found in the Paint Rock River and its tributaries are exceptionally rare. Two mussel species, the pale lilliput and Alabama lampshell, are found nowhere else in the world. Three rare fish species, the sawfin shiner, the blotchside logperch, and the snail darter, are found here. Another fish species, the palezone shiner, is confined solely to two—the Paint Rock River and a single stream in Kentucky.

Due to the Paint Rock River's exceptional aquatic species diversity, the U.S. Fish and Wildlife Service, The Nature Conservancy, and other partners began aquatic restoration and protection efforts in the watershed over a decade ago. To date, several dozen restoration projects have been completed on privately-owned lands and several more are in progress.

Conservation Priorities

1. Connect existing public lands and private protected lands in an ecologically functional network through strategic conservation easements and fee acquisitions.
2. Protect forestland to maintain water quality for rare fish and mussel species assemblages, and to preserve Neotropical migrant songbird habitat.
3. Protect important cave habitats.
4. Restore degraded riparian and wetland habitats throughout the Paint Rock River watershed.
5. Promote the local economic benefits of maintaining intact natural areas and recreational sites, including The Walls of Jericho State Natural Area and James D. Martin Skyline Wildlife Management Area.
6. Promote more sustainable agricultural practices in the Paint Rock River watershed.

Little Sequatchie Cove and Fiery Gizzard

The Little Sequatchie Cove—Fiery Gizzard Conservation Area contains some of the most spectacular views and diverse recreational opportunities in Tennessee. Several of the largest privately-owned forested areas remaining in the South Cumberland region are also here. Visitors to Little Sequatchie Cove can find numerous hidden treasures like Pocket Gorge, where nearby recreational opportunities include off-highway vehicle use, rock climbing, and whitewater rafting. TWRA also stocks trout in the Little Sequatchie River which flows through Little Sequatchie Cove and eventually into the Sequatchie River.

The Fiery Gizzard trail system has been the centerpiece of recent conservation efforts in the area. This seventeen mile trail system features cascading streams, numerous waterfalls, panoramic overlooks, rocky gorges, and lush woodlands. The trail itself is one of the most diverse and beautiful in the state, and has been ranked as one of the top 25 backpacking trails in the U. S. by *Backpacker* magazine. Along the trail are four campgrounds managed by TDEC as part of the South Cumberland State Park system. Today, nearly half of the Fiery Gizzard trail and as-

sociated viewing areas have been placed into public ownership. Protecting the remaining sections of the trail and surrounding views of the gorge remains an important goal of the conservation community.

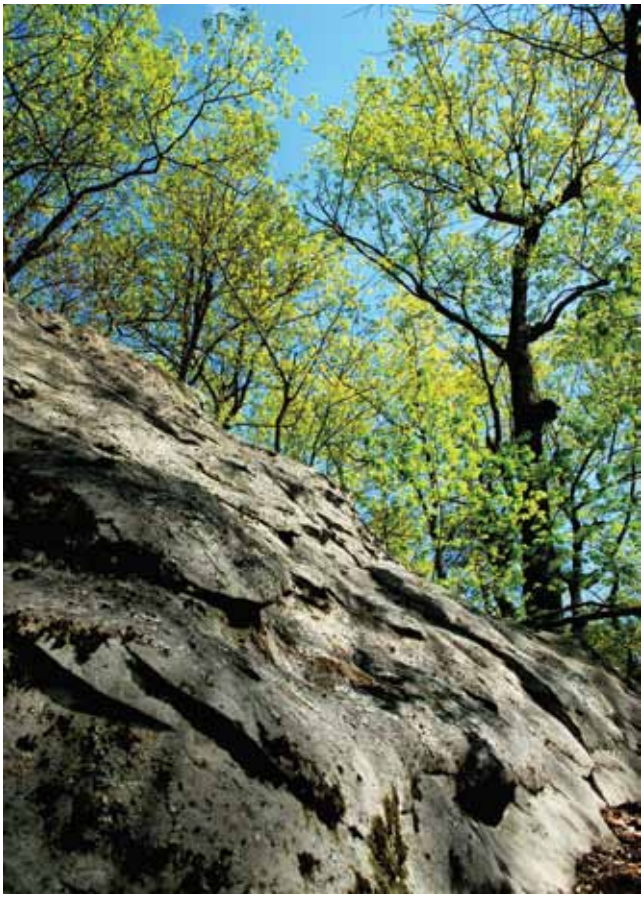
At the southern terminus of the Fiery Gizzard trail system is TVA's Foster Falls Wild Area. Foster Falls, the largest waterfall by volume on the Cumberland Plateau, has become a world class destination for sport rock climbing, and attracts tens of thousands of visitors to Marion County annually. Just north of Foster Falls is Grundy Lakes State Park in Tracy City. Grundy Lakes is a popular day use area which provides swimming, fishing, and canoeing, and is one of South Cumberland regions' most cherished historic areas.

Key Protected Lands

Despite having some of the largest contiguous tracts of forestland and important cultural sites, there is relatively little protected land in the Little Sequatchie Cove—Fiery Gizzard Conservation Area. Approximately 10,000 acres, just 6% of the 160,000 acre conservation area, are protected between Grundy Forest and State Natural Area, Grundy Lakes State Park, TVA's Foster Falls Wild Area, and several lands privately protected through conservation easements by The Land Trust for Tennessee.

Ecological Importance

A high diversity of plant and animal habitats exists in the Little Sequatchie Cove—Fiery Gizzard Conservation Area. The Tennessee State Wildlife Action Plan (2005) identified the conservation area as a "high" priority for the protection of cave habitats and



as a "very high" priority for the protection of terrestrial habitats. There are 20 species of rare plants and animals in the conservation area, including several rare invertebrates.

Conservation Priorities

1. Protect the views from the Fiery Gizzard trail system and the remaining private lands adjoining the trail.
2. Establish a larger protected land base in Little Sequatchie Cove, which includes working forests.
3. Protect important cave and karst resources in Little Sequatchie Cove.
4. Determine and help promote local economic benefits of maintaining intact natural areas and cultural sites, such as Fiery Gizzard and Grundy Lakes.
5. Complete the Mountain Goat Trail, which will link communities including Sewanee, Monteagle, Tracy City, and Palmer.
6. Develop a management response to exotic pests and disease including the hemlock woolly adelgid and white nose syndrome.

Savage Gulf

Savage Gulf State Park, the centerpiece of conservation efforts in the 175,000-acre Savage Gulf Conservation Area, protects one of the last stands of virgin forest in the Eastern United States. Known locally as the "Werner Big Timber" tract, this 500 acre area has never been logged, giving a rare glimpse of what the cove forest of the Cumberland Plateau may have looked like before European settlement. On the surface of the plateau above the gulf is an outstanding old-growth shortleaf pine forest, which has also yielded important insights into forest ecosystem dynamics of the Cumberland Plateau.

The geomorphology of the Savage Gulf Conservation Area has set the stage for its rugged beauty and lush inaccessible canyons. Like a giant crowfoot, the three forks of the scenic Collins River come together within the boundary of the park just south of the old resort village of Beersheba Springs. At a length of approximately five miles each, Collins, Savage, and Big Creek tumble down over 800 feet in elevation through narrow coves known locally as gulfs. Rimmed by sheer sandstone cliffs, these rugged canyons offer the hardy visitor a fine glimpse of the true wilderness still present in the South Cumberland region.

Surrounding Savage Gulf State Park is an equally remarkable cultural landscape that provides important living examples of the distinct history of the South Cumberland region. The most well-known sites include Gruetli-Laager, a community begun as a 19th-century Swiss colony, and Beersheba Springs, an antebellum resort that brought visitors from around the country to its rejuvenating chalybeate spring and moderate climate. The descendents of many of the families that first settled this region are still here today, maintaining both the history and the independent spirit of the people who settled here.

Savage Gulf State Park also contains several features of historical significance, including the Stagecoach Historic Trail in Collins Gulf, Cator Savage cabin, the old Savage schoolhouse site in the Big Creek gorge, Laurel Mill site near Great Stone Door ranger station, Greeter home place, and Long's Mill site near Greeter Falls. Both the Stagecoach Historic Trail and the Beersheba Springs community are included in the National Register of Historic Places.

Key Protected Lands

Although Savage Gulf State Park is more than 20,000 acres, it is the only publicly managed property in the Savage Gulf Conservation Area. The park offers approximately 80 miles of hiking trails and has several campgrounds, popular swimming holes, and two well-renowned rock climbing areas. There are many accessible overlooks, such as Laurel Gorge Overlook and Rattlesnake Point, which offer visitors panoramic views of the deep gulfs. The numerous waterfalls within the park, including Greeter Falls and Savage Falls, are popular hiking destinations. There are also several privately protected properties with conservation easements held by The Land Trust for Tennessee within the conservation area. The Friends of South Cumberland State Park also own property in the Conservation Area.

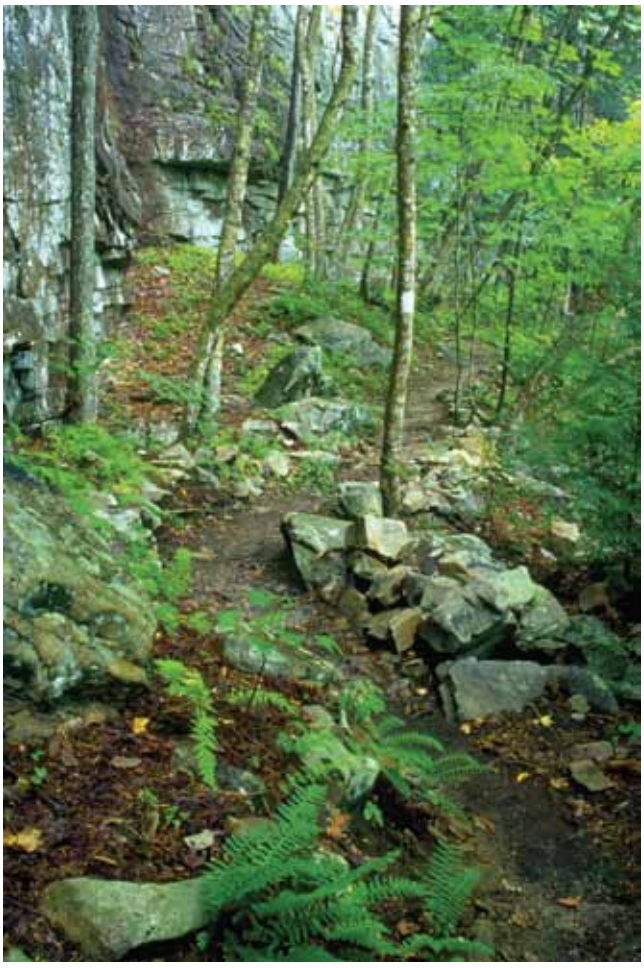
Ecological Importance

The Savage Gulf Conservation Area contains a wide range of ecological habitats, including rock ledges, overhangs, bogs, gravel bars, and limestone flats, old growth and mature second growth forests, as well as a variety of aquatic ecosystems. The Tennessee State Wildlife Action Plan (2005) identified the Savage Gulf conservation area as a "very high" priority area for the protection of terrestrial habitats. There are 32 species of rare plants and animals known to exist in the conservation area, including four federally endangered species. Within Savage Gulf State Park alone, a total of 716 vascular plant species have been cataloged.

Conservation Priorities

1. Protecting scenic overlook views and views from hiking trails in and around Savage Gulf State Park.
2. Place more working forest lands buffering Savage Gulf State Park under conservation easement to maintain the integrity of the park.
3. Work with timber companies, which own much of the land surrounding the park, to protect the boundary of the park from non-compatible land use changes.
4. Develop a management response to exotic pests and disease including the hemlock woolly adelgid and white nose syndrome.
5. Ecological restoration of former industrial pine plantation land now part of the state park.

Mid-Cumberland



The Mid-Cumberland Conservation Area hosts an amazing array of natural and cultural resources. It hosts numerous specialized terrestrial and subterranean habitats, and supports abundant aquatic life. With extensive trail systems and areas designated for hunting and other forms of recreation, the extensive public land areas offer residents and visitors a range of opportunities to find peace and rediscover nature.

A cornerstone of the Mid-Cumberland Conservation Area is the 25,500-acre Fall Creek Falls State Park. Established in 1935, the park consistently ranks as one of the top Tennessee state parks and family destinations in the southeastern U.S. Fall Creek Falls State Park offers just about every kind of recreational activity, from golf, mountain biking, hiking, and paddling to rock climbing. The park also hosts a first class hotel and conference center with 30 cabins. Adjacent Bledsoe State Forest has long been traditionally used for hunting, fishing, and horseback riding. Bridgestone Firestone Centennial Wilderness offers seasonal hiking, hunting, fishing, and primitive camping.

Key Protected Lands

The Mid-Cumberland Conservation Area consists of an incredibly diverse assemblage of protected lands linking together more than 52,000 acres, approximately 25% of the 202,000 acre area. Among the protected areas are Fall Creek Falls State Park, Bledsoe State Forest, Virgin Falls State Natural Area, Bridgestone-Firestone Centennial Wilderness, and several private lands protected with conservation easements by The Land Trust for Tennessee. Ongoing conservation efforts have helped to create physical links between the largest public land areas managed by the Tennessee Division of Forestry, Department of Environment and Conservation, and Wildlife Resources Agency. Developing ecological connectivity between the management areas will require significant planning and coordination between all agencies and organizations involved. Despite extensive areas of residential development near these public lands, several large contiguous tracts of native hardwood forest exist.

Ecological Importance

The Tennessee State Wildlife Action Plan (2005) identified several portions of the Mid-Cumberland Conservation Area as a "very high" priority for the protection of cave habitats and a "very high" priority for the protection of terrestrial habitats. There are 76 species of rare plants and animals in the conservation area, including six federally listed species. The cave species diversity alone would probably qualify the Mid-Cumberland Conservation Area to be recognized as a biological hotspot. Even though it is not identified as a Tennessee priority area for aquatic habitat conservation, there are several rare fish and mussel species in Cane Creek.

Conservation Priorities

1. Protect the key views and watershed areas adjoining public lands throughout the conservation area to maintain the integrity of existing public lands, improve management capabilities, enhance the working forest land base, improve wildlife corridors, reduce the possibility of isolation of native species populations, and maintain water quality.
2. Increase communications between the various state agencies that own and manage land in the conservation area to develop and accomplish mutual land management objectives.
3. Restore native upland forest habitat on approximately 3,000 acres of land recently added to Fall Creek Falls State Park and currently planted with non-native pine species.
4. Develop a management response to exotic pests and disease including the hemlock woolly adelgid and white nose syndrome.

Cumberland Trail

The Cumberland Trail State Scenic Trail stretches from the Cumberland Gap to the Tennessee River Gorge, a span of 300 miles from the northern to the southern border of Tennessee. Meandering through deep gorges and following the high ridgelines on the eastern escarpment of Walden Ridge, the trail passes through a great diversity of ecological habitats, including deciduous and mesophytic slopes, floodplains and riparian areas, rock outcrops and cliff bluffs, sandstone glades and barrens, seepage slopes and upland areas.

The Cumberland Trail represents a forward-thinking approach to conservation by incorporating both natural and cultural resources. Since its beginnings in 1965, the Cumberland Trail has been a citizen-led movement inspired by the rugged natural beauty of the plateau and the character of its people.

Today, the Cumberland Trail is a cooperative effort between various state agencies including the Tennessee State Parks, TDEC Recreation Educational Services, TDEC Natural Heritage Program, the Department of Tourism, Tennessee Department of Transportation, Tennessee Wildlife Resources Agency. The main nonprofit organizations involved include the Cumberland Trail Conference, Tennessee Trails Association, The Land Trust for Tennessee, and Friends of the Cumberland Trail. With over 175 miles of trail completed, local and state support for the trail system has never been stronger.

Historic communities along the trail, such as Ozone and Signal Mountain are physically and culturally connected through folklore and a unique regional musical style that still thrives today. Recreational opportunities, including nationally recognized rock climbing sites, whitewater paddling, fishing, hunting, caving, swimming, and site-seeing invite a range of outdoor enthusiasts and amateur naturalists to explore the region. With 2.4 million residents within 35 miles of at least one existing or planned trailhead, when completed the Cumberland Trail may become Tennessee's largest and most visited state park.

Key Protected Lands

Currently, the Cumberland Trail consists of 26,000 acres owned by the State of Tennessee and 907 acres under conservation easement. The goal is to create a corridor with a minimum 200-foot width for the entire 300 mile distance by connecting existing protected lands. In addition to providing

a unique recreational opportunity, the network of protected areas will provide an exceptionally long wildlife corridor stretching across the entire state of Tennessee. When completed, the Cumberland Trail will connect over 300,000 acres of public lands, including seven designated National Park Service units, seven State Natural Areas, five State Wildlife Management Areas, three State Parks, two National Historic Districts, one State Forest, and areas adjoining seven State Scenic Parkways and one State Scenic Highway.

Ecological Importance

According the Tennessee State Wildlife Action Plan (2005), the Cumberland Trail traverses several "very high priority" areas for protecting terrestrial habitats and one "high priority" area for protecting aquatic habitat, the upper Piney River. Deep gorges entrenched into the southern end of Walden Ridge shelter glorious thickets of Catawba rhododendron, a species isolated to cool canyons following the Pleistocene. The North Chickamauga Creek Gorge State Natural Area and Rock-Possum-Soddy Resource Management Area protect the great majority of the known populations of large flowered skullcap, and the creek banks support Virginia spirea and whiteleaf sunflower.

The Cumberland Trail crosses nine river gorges in Rhea and Hamilton counties alone. The aquatic resources in these river gorges contribute significantly to groundwater resources for local communities, and harbor a number of rare species, such as the laurel dace, the Cumberland rosemary, and the American bald eagle.

Among the unique natural features protected by the Cumberland Trail is Devilstep Hollow Cave in Cumberland County which contains a magnificent spring from which the Sequatchie River emerges. The spring is fed by Cove Creek, which drains all of Grassy Cove, a five-mile long bowl surrounded by plateau tableland which attracted some of the earliest settlers of the region due to its unusually fertile soils.

Conservation Priorities

1. Secure state and federal funds to acquire the remaining sections of the trail, including the Soak Creek gorge corridor, portions of the upper North Chickamauga Creek watershed, the northern and southern connections to Laurel-Snow State Natural Area, North Suck Creek Gorge, Soddy Creek, Audubon Mountain, Hart Gulf, Roaring Creek, and Hinch Mountain.
2. Raise private funds necessary to match state and federal funds to acquire the remaining sections of the trail.
3. Secure state and private funding to build the trail and associated amenities.
4. Acquire key buffering properties, such as lands around the Head of Sequatchie Resource Management Area in Cumberland County, to protect the integrity of resources of the trail.
5. Provide several additional staff necessary to manage, administer, and protect the significant natural, cultural, and recreational resources of Cumberland Trail State Scenic Trail.

Walden Ridge

At approximately 122,000 acres, the Walden Ridge Conservation Area contains considerable natural, historic, and cultural resources, and is in close proximity to the city of Chattanooga. Near the conservation area are the communities of Soddy-Daisy and Hixson, some of the fastest growing areas in Tennessee. As the city of Chattanooga has grown, the rural uplands have become more desirable for both commuters and second homes. Large tracts of land that have historically been managed for timber production are now under increasing pressure for conversion to development.

North Chickamauga Creek cuts a spectacularly scenic, deep central gorge through the sandstone of Walden Ridge atop the Cumberland Plateau. The creek is known for its difficult whitewater paddling and is regularly stocked with trout by the Tennessee Wildlife Resources Agency. The Tennessee River and its associated River Gorge wind for nearly 20 miles through the conservation area. The Gorge is one of the most unique natural treasures in the Southeast and is the fourth largest river canyon east of the Mississippi. The scenic terrain of the Tennessee River Gorge creates a unique diversity of land forms.

Ecological Importance

A high diversity of plant and animal habitats exists in the Walden Ridge Conservation Area, especially in the Tennessee River Gorge and North Chickamauga Creek Gorge. Riverside shoals and stream cobble bars provide habitat for several rare plant species. The Tennessee State Wildlife Action Plan (2005) identified the Walden Ridge Conservation

Area as a "very high" priority area for the protection of terrestrial habitats. There are 42 species of rare plants and animals in the conservation area, including the federally listed large-flowered skullcap and Virginia spiraea.

Key Protected Lands

The Walden Ridge Conservation Area includes approximately 34,000 acres of protected land. North Chickamauga Creek Gorge State Natural Area is a favorite destination for outdoor enthusiasts of all kinds and is one of the largest and most heavily visited natural areas in the state. The Cumberland Trail State Scenic Trail, which passes through the natural area, reaches its southern terminus in the nearby Prentice Cooper State Forest.

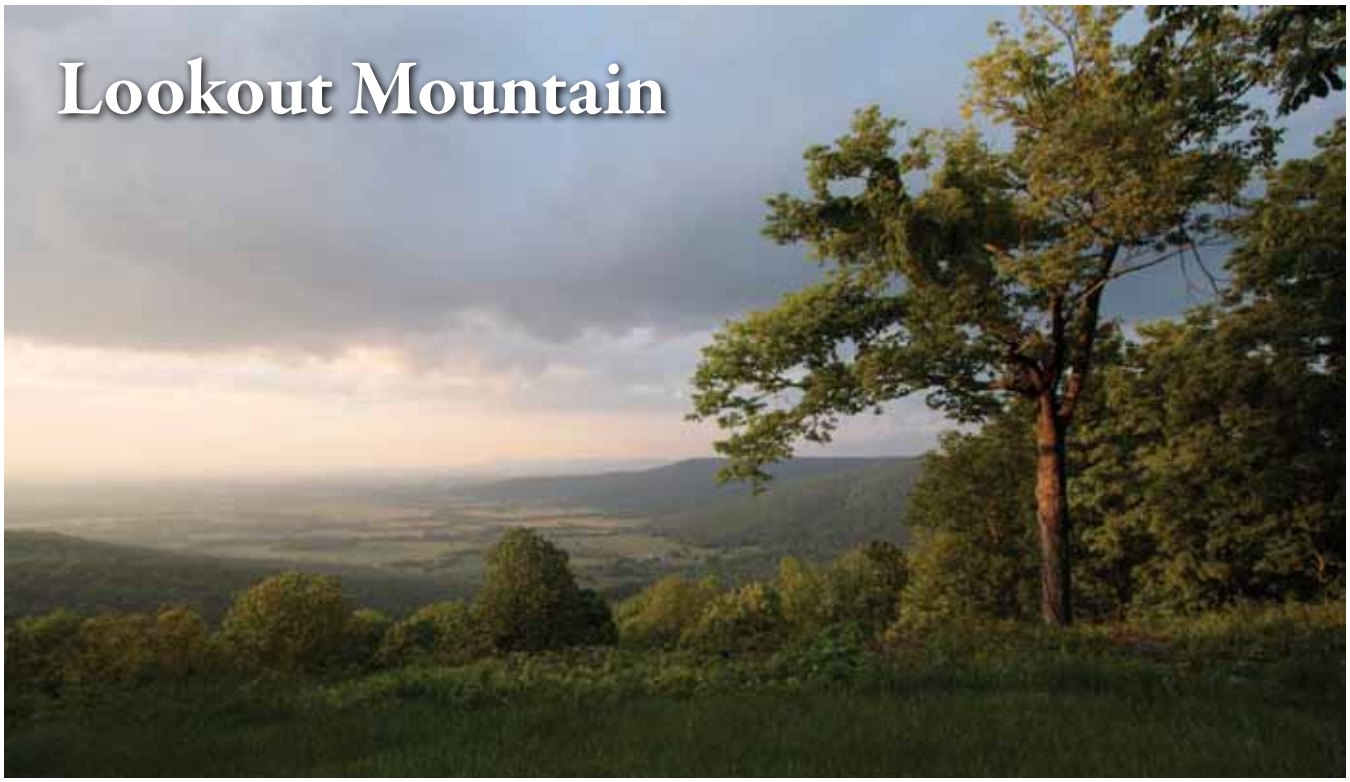
Situated above the scenic Tennessee River Gorge, Prentice Cooper State Forest is home to some of the most breathtaking vistas in Tennessee. Land management of the state forest is focused on sustainable timber management and recreation. With 35 miles of hiking trails and designated areas for camping, off-highway vehicle use, hunting, rock climbing, mountain biking, and horseback riding, Prentice Cooper State Forest serves the population of Chattanooga, just minutes from the city, with an abundance of recreational opportunities.

In addition to the large public land areas, there are numerous areas protected through conservation easements held by The Land Trust for Tennessee, North Chickamauga Creek Conservancy, State of Tennessee, and Tennessee River Gorge Trust.

Conservation Priorities

1. Acquire key landholdings along the unfinished portions of the Cumberland Trail State Scenic Trail.
2. Protect the remaining large forested tracts at the headwaters of the North Chickamauga Creek watershed, especially those in the Cumberland Trail State Scenic Trail corridor.
3. Improve riparian habitat and mitigate water quality impairments resulting from acid mine drainage in headwaters region of North Chickamauga Creek.
4. Extend the North Chickamauga Greenway Trail linking downtown Chattanooga to the scenic North Chickamauga Creek Gorge.
5. Develop a management response to the occurrence of such invasive exotics as hemlock wooly adelgid.

Lookout Mountain



The Lookout Mountain Conservation Area is approximately 266,000 acres and can be found at the eastern limits of the Cumberland Plateau in Alabama, Georgia, and Tennessee. Lookout Mountain boasts incredible biological diversity, recreational opportunities, history, and extensive green space close to Chattanooga.

Lookout Mountain is an area of significant historical relevance. Cherokee Indian activity dating back several centuries has been documented here. A series of battles that became a major turning point in the Civil War were fought on and around Lookout Mountain. Today, the oldest national military park, in the United States, Chickamauga and Chattanooga National Military Park, is located here. Other important historical sites include Stephens Gap and Davis Crossroads in Walker County, Georgia.

For recreation opportunities Lookout Mountain is a nationally renowned destination, particularly for kayaking and rock climbing. It is popular with hikers, bicyclists, horseback riding, bird watching, wildflower viewing, photography, hang gliding, and spelunking. Areas such as Chickamauga and Chattanooga National Military Park, Cloudland Canyon State Park, Crockford-Pigeon Mountain Wildlife Management Area, Zahnd Natural Area, Otting Wildlife Management Area, Little River Canyon National Preserve, and Desoto State Park stretch across the mountain, providing public areas for recreational activities across three states.

Ecological Importance

Lookout Mountain sits at the convergence of three major eco-regions: the Southern Ridge and Valley, Cumberland Plateau, and Southern Blue Ridge Mountains. Lookout Mountain's habitats are home to black bear, Neotropical migrant songbirds, and

several rare plants such as the federally listed large-flowered skullcap and Virginia spiraea.

The karst geology has developed numerous cave systems that are home to such rare animals as the gray bat and Tennessee cave salamander. Ellison's Cave, on the section of Lookout Mountain known as Pigeon Mountain, is the deepest cave east of the Mississippi River. Extensive boulder field forests provide unique habitat for rare amphibian species, including the green salamander and endemic Pigeon Mountain salamander.

The Coosa River Basin, into which over half the mountain drains, is recognized as one of the five most biologically diverse river systems in the United States. The Little River, in the Georgia and Alabama sections of Lookout Mountain, is the longest river in North America that runs its course entirely on top of a mountain. The river has cut a deep canyon into the top of Lookout Mountain, creating the deepest gorge east of the Mississippi. High energy streams carrying exceptionally clean water flow off the mountain, providing important habitat for diverse fish and mussel populations.

Key Protected Lands

The Lookout Mountain Conservation Area includes approximately 50,000 acres of protected land that are ecologically and historically significant, including Chickamauga and Chattanooga National Military Park, Lula Lake and Rock Creek, Cloudland Canyon Sate Park, Crockford-Pigeon Mountain Wildlife Management Area, Zahnd Natural Area, Little River Canyon National Preserve, Cherokee Rock Village, and several conservation easements held by nonprofit organizations.

Conservation Priorities

1. Connect existing public lands such as Pigeon Mountain Wildlife Management Area, Zahnd Natural Area, and Little River Canyon into a functional network of protected forestland.
2. Create a recreational trail system connecting downtown Chattanooga and Lookout Mountain communities.

Ways Forward

The South Cumberland landscape has experienced considerable challenges in recent years. Yet the region remains as one of the largest, most intact privately owned forested landscapes in the eastern United States. The exceptional biodiversity coupled with rich cultural history make the South Cumberland region one of the most unique and treasured landscapes in the United States.

Despite the resilience of the Cumberland Plateau's natural habitats and local communities, protecting the regions ecological health and preserving its culture will require sustained collaboration from many groups and many individuals. The work completed during the past several decades to set aside high conservation value forestland through both government and private initiatives has been commendable. The forests that have been protected are highly valued by local residents for recreation, for their economic resources, and for preserving a rural way of life. To ensure the viability of the region's forests and resource-based economy for future generations, traditional approaches to conservation will need to be supplemented or replaced with novel strategies.

Today, hundreds of thousands of acres of privately owned forestland are currently available for purchase or will become available in the next few years. Coupled with the suppressed real estate market, there is now a unique opportunity to work with stakeholders and landowners to protect the South Cumberland region's forests and associated natural and cultural values. Initiatives embarked on today will have sustained benefits for future generations.

The gathering of the conservation community from the South Cumberland region through a series of workshops in 2009 and 2010 led to the development of a suite of strategies to advance conservation efforts in the region. While strategies in each conservation area may be somewhat unique, three overarching strategies for the entire region emerged as the most important for the conservation community:

1. Define long-term goals for regional conservation;
2. Increase national attention on the region to attract more funding for conservation; and
3. Collaborate with local communities to better incorporate their concerns and needs into future conservation planning efforts.

I. Define Long-Term Conservation Goals

GOAL

Develop a suite of desired future conditions that will help guide conservation objectives in the South Cumberland region.

LEAD ORGANIZATIONS

The Land Trust for Tennessee and the Sewanee Environmental Institute

SUMMARY

Many novel data resources describing the South Cumberland region were developed through the conservation action plan process. However, many gaps in our knowledge of the region were also identified. Substantial additional geospatial data development supported by biological data and cultural information will be necessary to better describe the region. The synthesis of these datasets will help the conservation community and stakeholders work together to answer the most challenging questions, such as:

- Given recent development patterns, what could the South Cumberland region look like in 20 years?
- How much natural area needs to be protected to adequately represent all native ecosystems and provide resilience in the face of short-term and long-term environmental changes?
- How do we maintain working forest landscapes and how well do they buffer important natural areas?
- Is ecological restoration a feasible option for meeting our long-term conservation goals?
- Where should connections be made between core natural areas to assure biological connectivity across the region?
- How can land conservation funds be spent most efficiently?

The South Cumberland region benefits from an impressive grassroots conservation movement. The region has been regionally and nationally recognized for its exceptional ecological and cultural values, and numerous governmental and nongovernmental organizations are involved in land conservation efforts. These organizations have unique missions, goals, and strategies. However, no single comprehensive strategy or long term vision for the region has ever been defined. Building on the success of the South Cumberland Conservation Action Plan process, The Land Trust for Tennessee, and Sewanee Environmental Institute will lead efforts to develop a suite of desired future conditions that will help define specific conservation objectives throughout the South Cumberland region.

Desired future conditions are specific goals for conservation that are measurable, spatially explicit, attainable in a set timeframe, and based on the best available scientific knowledge. They form the basis for developing strategies, prioritizing actions, and allocating resources. Progress towards this set of goals is measured by a set of indicators, quantitative or qualitative measures associated with each desired future condition. The selection of these desired future conditions would be based on a collaborative process, such as a series of meetings, involving experts and key stakeholders in the region.

Researchers at the Sewanee Environmental Institute have been using geographic information science to study ecological and environmental change in the Cumberland Plateau region for over a decade. With the capacity to integrate large volumes of data about the ecological, cultural, recreational, and other conservation values, the geographic information system (GIS) is the modern tool for comprehensive

conservation planning. The Sewanee Environmental Institute is capable of providing the expert knowledge and technical resources required to conduct the research to support the desired future condition planning process.

Desired future conditions and associated indicators will be defined for the entire South Cumberland region and for each individual conservation area. Each conservation area encompasses unique ecological and cultural values, and has its own challenges and opportunities for protecting these natural and cultural resources. An important outcome of this process is the identification of specific suite of strategies to achieve conservation goals at both the regional and conservation area scales.

A GIS will be created to describe the current and potential ecological values, natural resources, and cultural information of the South Cumberland region. The GIS would not only serve as an information resource for the conservation community in their effort to define desired future conditions, but as a decision support system to aid them in the selection of conservation strategies. Providing training for conservation practitioners will be an important component of this work. Defining desired future conditions is not meant to be a perfect science, but a means to make more informed decisions when developing landscape scale conservation strategies.

The Land Trust for Tennessee and the University of the South's Sewanee Environmental Institute are committed to continue their support of the broader conservation community, and will provide leadership, technical expertise, and resources needed to follow through with the desired future conditions planning process.

KEY ACTION STEPS

1. Develop a comprehensive GIS for the South Cumberland region.
2. Hold a series of expert meetings to develop criteria for desired future conditions in each focal area.
3. Collect and analyze supporting biological and cultural information to further refine desired future conditions.
4. Provide training and support to conservation professionals and local stakeholders for application of information and tools.

II. Establish Dedicated Funding Sources

GOAL

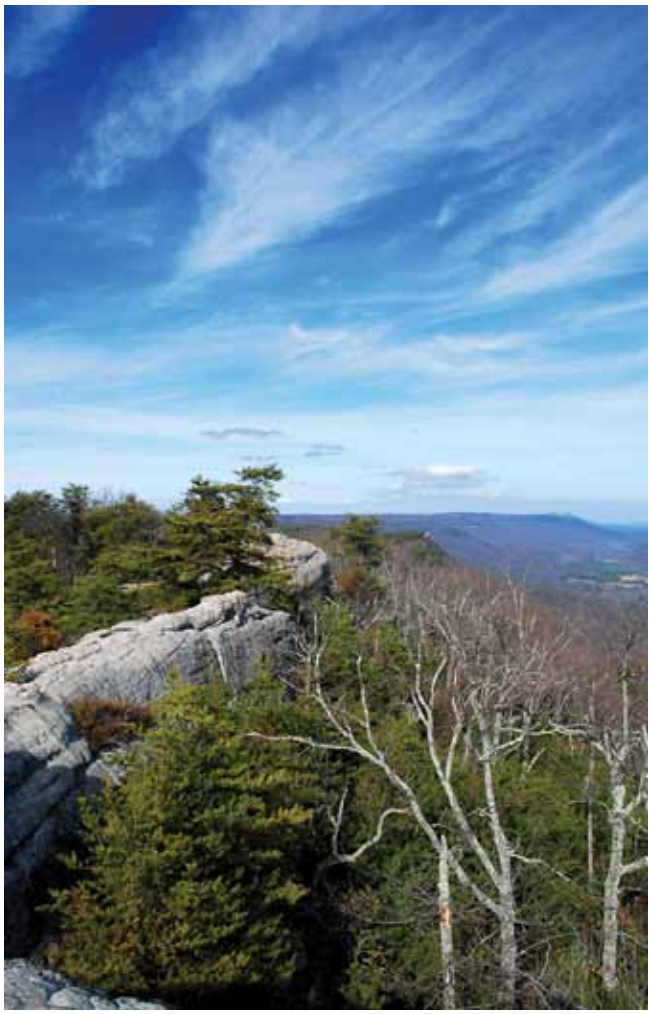
Establish an increased and more strategically reliable flow of land conservation capital from diverse private and public sources for the South Cumberland region.

LEAD ORGANIZATIONS

Open Space Institute
The Land Trust for Tennessee and nonprofit allies

SUMMARY

In comparison to other regions of the United States, both public and private financial support for land protection in the southeastern United States has been relatively deficient and unsteady, despite the remarkable biodiversity and deep cultural heritage of the region. Regional private philanthropic sources have remained modest. State funded programs in Tennessee have historically been affected by political and economic change, and have been inconsistent. However, Alabama, through the Forever Wild program has provided a consistent and reliable source of funding. Federal programs have not fulfilled promises of investment, primarily due to inadequate funding for programs such as the Land and Water Conservation Fund.



To achieve long-term landscape conservation goals for the South Cumberland region, increased and consistent funding will be essential. A multi-pronged strategy should be implemented.

Private Sector Funding. Building on the model currently being developed by the Open Space Institute, private funding from regional foundations that have traditionally supported land conservation should be leveraged to attract new funding from regional philanthropies as well as from national-scale funders, with the appeal reinforced by the science-based prioritization identified in this document. These funds need to be supplemented with additional private funds raised by the nonprofit conservation community on a project-by-project basis.

State Funding. In Alabama, renewal of the Forever Wild Program in 2011 by the Alabama legislature is critical. In Tennessee, the conservation community must sustain efforts to ensure that real estate transfer tax dollars are used for conservation purposes in 2011 and beyond. In addition, an effort should be made to have more funding put into the Tennessee Heritage Conservation Trust Fund.

Federal Funding. Under President Obama's America's Great Outdoors Initiative, the Land and Water Conservation Fund could provide $900 million annually if fully funded. The conservation community must reach out to congressional delegates for Alabama and Tennessee to generate support for this program and other programs such as the Forest Legacy Program. The goals of this effort will be to achieve full program funding and generate support for the proportional allocation of the funds to the South Cumberland region given its nationally significant protection opportunities.

It is not just because individual funding sources like those discussed above generally support only a portion of any project's costs, but funders are attracted to areas and projects where complementary sources are already firmly committed. It is thus doubly important that efforts be sustained on various fronts to assure stable and adequate funding sources for land conservation in the region.

KEY ACTION STEPS

1. Engage local, regional, and national foundations to develop collaborative land protection funding strategies for the South Cumberland region.
2. Positively influence establishment/continuation/improvement of permanent state-level sources of funding for Alabama, Georgia, and Tennessee.
3. Positively influence full funding for federal Land and Water Conservation Fund, and assure strong allocation of LWCF and other federal funds to key regional projects.

III. Engage Local Stakeholders

GOAL

Develop a grassroots outreach program that engages locally elected officials and other community leaders in the South Cumberland region to discuss ways of working toward a common vision for open space in the region.

LEAD ORGANIZATION

Alliance for the Cumberlands

SUMMARY

The South Cumberland region's open spaces are the centerpiece of a way of life for its residents. A survey sponsored by the Nature Conservancy in 2003 indicated that 96.5% of residents in the South Cumberland region expressed that we have an obligation to protect our natural resources as a legacy to our children and grandchildren.

Many of the elected officials in the South Cumberland region that were in office at the beginning of the South Cumberland planning process are no longer in office. With so many new leaders, 2011 represents an opportunity to engage each of them in a conversation about the importance of open space in their community, and to find common ground on conservation priorities. This community-based approach to conservation is also a priority under the America's Great Outdoors Initiative.

A series of meetings will be held to discuss a realistic assessment of current growth trends and projections in each county, and encourage discussion about what community leaders would like their county to look like. These discussions will be supported with conservation priorities outlined in this document, in addition to state recreation plans, state forest resource assessments, state wildlife action plans, and recent studies of the economic impacts of Tennessee Parks completed by TDEC and the University of Tennessee—Institute for Agriculture.

In the past, the conservation community did not do an adequate job of engaging local elected officials in the importance of conservation or making conservation issues relevant. The end goal of this effort is to have locally elected officials be more engaged and supportive of efforts to conserve the natural and cultural resources in their jurisdiction.

KEY ACTION STEPS

1. Set up meetings with locally elected officials and other community leaders to discuss the future of open space in their respective areas.
2. Conduct in person mapping sessions with traditional local leadership to identify the county's special open lands.
3. Complete a report that summarizes conservation priorities by county.

Conclusion

Despite considerable changes in recent land use patterns coupled with decades of incompatible land management practices, the opportunity to conserve the rich landscape of the South Cumberland region remains. However, this opportunity will not last indefinitely. This document serves as an appeal to all citizens of the South Cumberland region and interested parties to move quickly and in an organized way to respond to this once-in-a-lifetime opportunity to secure the natural and cultural resource base that will support the region's economy, environmental health, and quality of life in years to come.

The strategies put forth in this document seek to build on the great conservation work that has been done in recent decades by creating a functional network of conservation areas that sustain a way of life for the South Cumberland region and all its inhabitants. An average of 5,000 acres per year has been conserved in the South Cumberland region in recent years. By completing these strategies, a significant increase in conservation impact can be accomplished, perhaps doubling the pace of conservation to 10,000 acres per year over the next five years.

The critical task at hand is making sure all stakeholders work together, and be prepared to develop new strategies as the need arises. The Land Trust for Tennessee and the University of the South remain committed to bringing stakeholders together beyond this effort, and to moving a conservation agenda forward for the South Cumberland region. This document reflects the thoughts of individuals from very different walks of life including sportsmen, foresters, and scientists to name a few. We hope it will inform others of the amazing resources of the South Cumberland region and a vision for how everyone can get involved to conserve them. It is a vision that will take years to realize fully but there are no underlying barriers to its progress. It would be easy to sidestep the need to implement these strategies because they seem too difficult, too expensive or politically unrealistic. In the end, the success of conservation efforts in the South Cumberland region will come down to an ethical decision. If we do not act now, we stand to lose a not just an exceptional natural resource but a way of life for future generations.

Photo Credits

Stephen Alvarez	North Chickamauga Gorge (9), Riding on the Mountain Goat Trail (24)
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Woodrow Blettel	Green's View (54)
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Laura Candler	Red and White (12)
Ron Castle	Trilliums (13), Buggy Top (14), Flower (18), Small Stream (38), Mountain Laurel (45), Bluff (47), Plateau from Above (48), Path (48), Over Trees in Savage Gulf (60)
Will Cowan	Spring Peeper (13)
Eric Dempsey	Rock Shelter Hike (50)
Paul Dixon	Solomon's Temple (43), Shakerag Hollow Near Green's View (57)
Jonathan Evans	Ephemeral Pond at Piney Point (15), Spotted Salamander (43)
Mark Gage	Rocks in Snow (27)
Robert Goodgame	Piney Point at Sunset (51)
Scott Hardage	Shakerag Bouldertop (17), Salamander (18), Old Barn (20), Rock Climbing in Spring (35)
David Haskell	Gulf Fritillaryon Gill (38), Mesomphix (60)
Nicholas Hollingshead	Cove in Fall (30), Birdwatching (35), Fiery Gizzard (44), Savage Gulf (49)
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Timothy Priest	Savage Gulf (10), Lower Greeter Falls (46)
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Nate Thomas	Little River Canyon (19), Kayaks on the Little River (29), Zahnd Natural Area (45), Point Park Cannon (52), Mountain East (59), McLemore Cove (61)
Ralph Thompson	Grundy Lake Coke Ovens (24)

Additional photographs also provided by:

The North Chickamauga Creek Conservancy
Sewanee Conglomerate emerges among Fall Colors (42), Shale Layers (53), Large Blocks from Upper Layers (55), North Rim Cliff Line (58)

The Grundy County Historical Society
Miners (23), Mountain Goat over Tunnel (23), Sam H. Werner (26), Observatory (54)

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