History

WILLIAM M. JURGELSKI

Burning Seasons, Burning Bans: Fire in the Southern Appalachian Mountains, 1750-2000

Bill Jurgelski is a North Carolina native who holds an M.A. in anthropology from the University of Arkansas and a Ph.D. in anthropology from the University of Georgia. He is currently conducting archaeological work in northern Alabama.

Introduction

From the 18th century until well into the 20th, forest fires were a pervasive presence in the Southern Appalachian Mountains. The fires, both accidentally ignited and intentionally set, could burn for days and singe hundreds of acres, as there were no practical means for extinguishing them. By the turn of the 20th century, woods fires were so frequent and so widespread in the mountains that in some locations as much as 80 percent of the land showed evidence of having been burned. Despite the damage they could cause, fires were viewed as a positive force by many residents of the Southern Appalachians. Like their contemporaries in other rural areas, mountain people recognized the value of fire for a multiplicity of purposes. Indeed, without fire many early mountaineers could not have wrested a living from the rugged land where they lived.

But the sweeping social and economic changes that wracked the Southern Appalachians in the early years of the 20th century led to a backlash against locally accepted fire use practices. National forests managed by scientifically trained foresters were established in the mountains. Laws against woods burning were strengthened and enforced, and means were developed to fight fires. Nonetheless, fires continued in the Appalachian woods. Frustrated foresters and fire victims often offered simple “cussedness” as the reason for mountain people’s stubborn refusal to stop setting fires, but the truth was a great deal more complex. Fire was a part of life for mountain residents, and suppressing fire required suppressing many traditional practices, an infringement borne hard by lifelong mountaineers.

By the end of the 20th century, anti-fire forces had prevailed. Fire has ceased to be a part of the day-to-day lives of most residents of the Southern Appalachians, and both natives and visitors are often unaware of the prominence of fire in the history of the region. This examination of how fire and life were
Figure 1. An experimental fire in the Bent Creek Experimental Forest, North Carolina, 1932. Most of the fires that occurred in the Appalachians in the 19th and early 20th century were ground fires such as this. Photograph courtesy of the USDA Forest Service, Southern Research Station.

interwined in the Southern mountains across more than two centuries seeks to address this void and contribute to a greater understanding of the way that fire has shaped the Southern Appalachian landscape.
Fire in the Southern Appalachian Mountains

Fires affected the Appalachians long before the first settlers of European descent arrived in the mountains. Although not as common as in more arid landscapes, lightning fires occur in the region. For thousands of years, Native Americans used fire to facilitate farming and hunting, and for a variety of other purposes.

The first white settlers to enter the mountains brought with them a complex of folk wisdom regarding fire that had been honed for generations in their homes to the East, and in some cases had been imported from Europe. Although fire was a tested and true tool in the hands of early Appalachian pioneers, it was a tool whose effect was distinctly shaped by the mountain environment.

During the chilly wet winters and warm humid summers, fires do not spread readily through the Appalachian woods even when intentionally set. Except in years of drought, mountain forests are vulnerable to fire only in the late autumn, after the leaves have fallen and the first frosts have blackened the grasses and weeds, and again in the spring when the sun has drawn close enough to warm the ground, but before the trees leaf out and shade the forest floor.

Fire in the mountains is also constrained by topography. South-facing slopes, which get the greatest exposure to the sun, are most prone to burning. North-facing slopes and the moist mountain coves burn much less frequently. Unlike fires in drier climates, fires in the Appalachians usually do not kill mature trees. Rather, the fires creep along the ground, consuming leaves, dead vegetation, smaller trees and shrubs.

While visiting Tallulah Gorge in northern Georgia before the Civil War, the journalist Charles Lanman encountered such a fire and left a stirring, almost lurid description of the experience in *Adventures in the Wilds of the United States* (1856):

But of all the scenes which I have been privileged to enjoy in the Tallulah chasm, the most glorious and superb was witnessed in the night time. For several days previous to my coming here the woods had been on fire, and I was constantly on the watch for a night picture of a burning forest. On one occasion, as I was about retiring, I saw a light in the direction of the Falls, and concluded that I would take a walk to the Devil’s Pulpit, which was a distance from my tarrying place some hundred and fifty yards. When I reached there I felt convinced that the fire would soon be in plain view, for I was on the western side of the gorge, and the wind was blowing from the eastward. In a very few moments my anticipations were realized, for I saw the flame licking up the dead leaves which covered the ground, and also stealing up the trunk of every dry tree in its path. A warm current of air was now wafted to my cheek by the breeze, and I discovered with intense satisfaction that an immense dead pine which hung over the opposite precipice (and whose dark form I had noticed distinctly pictured against the crimson background) had been reached by the flame, and in another moment it was entirely in a blaze. The excitement which now took possession of my mind was truly painful; and, as I threw my arms around a small
tree, and peered into the horrible chasm. my whole frame shook with an indescribable emotion. The magnificent torch directly in front of me did not seem to have any effect upon the surrounding darkness, but threw a ruddy and death-like glow upon every object in the bottom of the gorge. A flock of vultures which were roosting far down in the ravine were frightened out their sleep, and in their dismay, as they attempted to rise, flew against the cliffs and amongst the trees, until they finally disappeared; and a number of bats and other winged creatures were winnowing their way in every direction. The deep black pools beneath were enveloped in a more intense blackness, while the foam and spray of a neighboring fall were made a thousand fold more beautiful than before. The vines, lichens, and mosses seemed to cling more closely than usual to their parent rocks; and when an occasional ember fell from its great height far down, and still further down into the abyss below, it made me dizzy and I retreated from my commanding position. In less than twenty minutes from that time the fire was exhausted, and the pall of night had settled upon the lately so brilliant chasm, and no vestige of the marvelous scene remained but an occasional wreath of smoke fading away into the upper air."

In many parts of the mountains, fires such as the one Lanman witnessed, when repeated over the years, created distinct "fire landscapes." These landscapes consisted of open, park-like forests comprised of widely dispersed older trees with a grassy understory, or, in some cases, of areas that were completely devoid of larger trees. Glimpses of these "fire landscapes" can be found in the accounts of travelers both before and after Lanman's time. For instance, when traveling to the north of Knoxville, Tennessee, in 1802, the French botanist André Michaux passed through "a coppice, very thickly set with trees, the largest clumps being twenty or twenty-five feet across." When he asked the local people what had caused this unusual landscape feature, he was told that the area was "formerly part of a barren, or meadow, which had become naturally re-covered with wood within the last twelve or fifteen years, since the custom of setting fire to them, as is practised in all the Southern States, had been discontinued." While traveling in western North Carolina in 1795, near what is now the town of Asheville, a land speculator named John Brown recorded in his journal that the country through which he was passing was "very mountainous and abou'd with Grasey Barrens." While marking the North Carolina-Tennessee boundary near the New River in northwestern North Carolina in 1799, John Strother recorded in his Diary that he had been passing through mountains "very rich & covered with rich herbage." The situation had changed little almost a century later, when a physician named Henry O. Marcy noted that under the "broad arches" of the trees in the Appalachian forests, "one may ride on horseback almost anywhere, except along the streams."

The fires also altered the species composition of the forests. Forests that were burned repeatedly tended to include a high percentage of fire tolerant species such as black oak, red maple, and black gum. Writing in a federal report in 1901, a forester named Overton Price stated that young growth on
burned over lands in the Southern Appalachians was characterized by species such as dogwood, sourwood, black jack, and scrub oak, which offered "great resistance to fire." Price's contemporary, W.W. Ashe, emphasized that repeated fires meant "the gradual killing of the forest or the reduction of it to a few species, which are physically capable of withstanding scorching heat, which seed or reproduce themselves abundantly or at an early age, and whose young seedlings are exceedingly hardy." Ashe noted that forest fires selected tree species that sprout from the stump or the root, rather than from seedlings. He attributed the prevalence of chestnuts in the higher elevations of the mountains to the numerous vigorous sprouts that this species produced in the wake of fires.

Ridges and south-facing slopes, especially upper southern slopes, which had the greatest exposure to the sun and wind, showed the greatest effects from fires. By the early 20th century, many such locations were said to have lost a significant amount of their forest growth to repeated blazes and, as a consequence, were "very open" or were overgrown with light-loving shrubs such as mountain laurel and scrub oak. "Fire scalds," or barren areas caused by exceptionally hot fires, were also present on some of the south-facing slopes.

Except in locations such as fire scalds, mature trees were usually not killed outright by the fires. Early foresters reported, however, that the bases of these trees were often scorched, scarred, or hollowed out by the flames. These wounds made the trees more vulnerable to timber-damaging insects and fungal diseases, which in some cases caused their death.

**Fire and the Appalachian Livestock Industry**

Many of the "fire landscapes" that were so prevalent in the Southern Appalachians were a consequence of using fire to improve pasturage for domestic animals. Livestock production was an important part of the Southern Appalachian economy during the 18th, 19th, and early 20th centuries. Animals, principally hogs and cattle, were raised for home consumption and for sale outside the region. The animals were usually not confined, but were allowed to "free range" or forage for themselves in fallow fields and woodlands. Both law and custom dictated that livestock could graze unimpeded across property boundaries. Agricultural fields had to be fenced against the incursion of wandering animals, and the owner of the livestock suffered no liability if the animals damaged crops or other property that was not adequately protected.

Open range or commons systems were an efficient form of land use for regions such as the Appalachians, where a considerable area was unsuitable for agriculture and where population densities were low. Such systems prevailed in rural areas throughout the southern United States from the colonial period into the early 20th century. The custom of setting fire to these commons lands in order to increase their capacity to sustain livestock was widely practiced across the South and had European antecedents.

Burning the commons lands increased their value as animal pasture in a number of ways. Most importantly, the fires consumed dead leaves and vegetation so that the new growth of grass would be exposed and available to livestock earlier in the spring. Encouraging an early growth of grass was
important because it reduced the amount of time that animals had to be winter fed or had to sustain themselves on sparse winter vegetation. Burning the leaves and dead vegetation released nutrients into the soil in the form of ash and kept down young tree growth that would otherwise shade out grasses and herbage. As a result, the overall volume and nutritional content of the grass may have been increased.

Larger trees damaged by fires sent up numerous sprouts that cattle feasted on. Fires set in the autumn cleared away leaves and debris, exposing chestnuts and other mast for free-ranging hogs to eat. Burning the undergrowth created a more open forest that made it easier for farmers to locate stock wandering in the woods. Fires also encouraged or sustained the growth of river cane, which served as valuable winter fodder for cattle, especially in the early years of settlement in the Appalachians.

Range improvement fires were usually set annually or semi-annually in the late autumn, late winter, or early spring in areas that were intended to serve as pasture for livestock during the growing season. These areas included land in the vicinity of settlements where animals roamed freely through most of the year as well as ridge tops where livestock were pastured during the summer. In some remote areas, trees on intended pastures were killed by girdling (removing a strip of bark around the circumference of a tree, which killed it), and the land was subsequently burned over to destroy the dead trees and undergrowth. This process was colloquially known as “hacking,” a practice dating to the years prior to the Civil War.

Fires set to improve the range were allowed to burn through the woods until they were extinguished by rain or snow or encountered some topographic barrier that prevented their further spread. Unless they threatened houses, outbuildings, fences, or other property, no attempt was usually made to contain the fires. Because they were allowed to spread unchecked and because they were set in unpopulated areas as well as in the vicinity of...
settlements, range improvement fires touched vast portions of the Southern Appalachians. One account dating to 1912 stated that the number of livestock roughly equaled the number of people in the Southern Appalachians—estimated in this same publication at about 350,000. Multiplying this figure by 15, the low end of a scholar’s estimate of the amount of land, 15–25 acres, required for each head of cattle, suggests that by the early years of the 20th century as many as 5,250,000 mountain acres may have been regularly burned to improve woodland pasture. Since the 15-acre-per-head estimate is for cattle only, not other forms of livestock, and does not take into account the vagaries of the Appalachian landscape, the actual figure may be significantly different. However, other accounts confirm that the acreage subjected to range improvement fires in the mountains was considerable. J.S. Holmes, an early 20th century forester, cited an estimate that in one of the mountain counties of western North Carolina 67 acres of woods were burned for every head of free range cattle. Another, perhaps more fanciful estimate, was that one person with 20 hogs, 20 sheep, and 10 cows would affect 10,000 acres, implying that each animal affected an average of 200 acres.

Hunting, Gathering, and Prospecting

Although burning the range to improve forage for livestock accounted for the greatest portion of woodland burned in the mountains, residents of the Southern Appalachians intentionally set fire to the woods for other purposes. Hunters would sometimes set fires in order to create grassy areas that were attractive to deer or other animals. Burning off the undergrowth also allowed the hunters to move about freely and provided them with clear lines of sight so that they could locate and shoot game more easily.

In some cases, especially in the early years of settlement, hunters would deliberately set fire to the woods in order to stir up or drive game animals such

Figure 3. Hunters in the Appalachians, 1924. Photograph courtesy of the D.H. Ramsey Library Special Collections, University of North Carolina at Asheville
as deer and bears. The Virginia aristocrat William Byrd was a somewhat reluctant beneficiary of this sort of hunting while surveying in the foothills of the Appalachians in 1728:

In a Deart of Provisions our Chaplain pronouc'd it lawful to make bold with the Sabbath, and send a Party out a-Hunting. They fired the Dry Leaves in a Ring of five Miles' circumference, which, burning inwards, drove all the Game to the Centre, where they were easily killed.

It is really a pitiful Sight to see the extreme Distress the poor deer are in, when they find themselves Surrounded with this Circle of Fire; they weep and Groan like a Human Creature, yet can't move and [sic] compasion of those hard-hearted People, who are about to murder them. This unmerciful Sport is called Fire Hunting, and is much practic'd by the Indians and Frontier Inhabitants, who sometimes, in the Eagerness of their Diversion, are Punish't for their cruelty, and are hurt by one another when they Shoot across at the Deer which are in the Middle.  

Appalachian residents set fire to the woods in order to facilitate the gathering of wild foods, medicinal herbs, or other commodities. Fires were set in the fall in order to make it easier to locate and gather chestnuts or in the winter and spring so that the leaves of ginseng or other valuable herbs could be spotted when the plants first sprouted. Fires were set to encourage the growth of wild blueberries and strawberries. And prospectors sometimes burned the woods in order to clear the leaves and debris off the forest floor so that rock outcrops could be seen more easily.

People sometimes set fires for the simple purpose of making it easier to travel through the woods. Southern Appalachian residents entered the forest for a variety of reasons—to hunt, gather nuts or wild plants, locate stray livestock, collect firewood, or harvest wood for buildings and fences. Regularly set fires reduced the amount of underbrush and debris on the forest floor and facilitated these activities.

**Pest and Disease Prevention**

A common justification for setting fire to the woods was to lessen the populations of harmful pests, most notably ticks, chiggers, and snakes. Many residents of the Southern Appalachians and of other parts of the South believed that burning the woods was conducive to general good health. Burning the woods was said to diminish "fever germs" and to destroy the "germs" of pellagra, tuberculosis, infantile paralysis, and malaria. Burning the dead leaves in the woods was also said to help prevent the occurrence of a condition known as milk sickness, which occurred when humans consumed the milk of cows that had eaten a forest plant known as white snakeroot which contains the poisonous substance tremetol. The condition was often fatal.

**Revenge, Entertainment, and Custom**

Mountain people sometimes set fires to take revenge on an enemy. Setting fires on a rival’s land could destroy fences and woodlots and threaten houses
and outbuildings. An account of life in rural western Virginia penned by a visitor in the early 1930s noted the many acres of burned land in the region and asserted that some of these fires were “instigated by jealousies and minor feuds.”

According to this account, “half-grown boys” were responsible for most of these fires. J.S. Holmes remarked that blazes “started with the idea of getting even for some real or fancied grievance” probably accounted for an outbreak of forest fires that occurred in 1913 in Transylvania and Polk counties in southwestern North Carolina. But outbreaks of revenge fires may have been anomalies. According to Overton Price, the author of a 1901 study of forest fires in the Appalachians, the number of fires set maliciously in the region was not very large.

Some fires were set “without much object, to see it burn, etc.” Fires could provide a burst of excitement that was a welcome break from the mundane doings of day-to-day life in the Southern Appalachians. Many residents of the Southern mountains likely shared feelings attributed to the residents of rural Minnesota, who were described in the last decade of the 19th century as regarding “fire running wild [as] a congenial spectacle” and for whom “the weird sight of the fires in a clearing often fully satisfied the longing to see the fireworks described in the country paper about the 10th of July.” Indeed, a psychologist employed by the Forest Service in the late 1930s to study the phenomenon of deliberately set woods fires in the Appalachians concluded that simple boredom was a major cause of these fires.

In other cases, the woods were set on fire simply because the practice was customary. People who had grown to adulthood watching their parents and neighbors burn the forest continued the practice with only the most general idea of why they were doing it. Burning the woods also perpetuated a customary landscape. For people used to the open, grassy forests created by fire, an unburned forest crowded with saplings and covered with leaves would have looked odd and unkempt. Setting fire to such areas was seen as a way of making the woods “clean.”

Fire Out of Bounds

By no means were all woodland fires in the Southern Appalachians started with the goal of burning the woods. Because mountain people used fire for many different purposes, it was inevitable that in some cases flames would spread out of the intended bounds and scorch the surrounding forest.

Farmers were responsible for many accidental fires. Clearing land for agricultural use was an ongoing process for mountain farmers, who seldom used fertilizer until early in the 20th century. In the absence of fertilizer, fields were cultivated until their fertility declined and then abandoned to serve as animal pasture and eventually to revert to forest. As old fields were abandoned, new fields were cleared nearby. The length of time that a field could be cultivated before being abandoned depended on its location. Lands in the river valleys that were replenished periodically by flooding or slope wash might be farmed for a considerable period of time, while fields cleared on hillsides—an increasingly common practice as the population of the region increased—could be farmed productively for only a few years.
Farmers typically cleared agricultural fields in two stages. In the first stage, they cut down and burned the undergrowth and small trees; the larger trees were girdled and left standing. Such clearings were known as "deadenings" or deadenings. In subsequent years, the large trees would topple or be cut down and rolled into piles and burned. In some cases, however, the fertility of the fields would be depleted, and the fields would be abandoned before the larger trees fell or were removed.65

Like the custom of free ranging livestock, the form of "slash and burn" agriculture practiced by Appalachian settlers was used elsewhere in the South and had European as well as Native American antecedents.66 As long as enough land was available, the practice represented an efficient means of extracting a return from marginal lands. Ashes from burning the small trees and underbrush during the initial phase of clearing fields provided nutrients for the first years' agricultural crops and killed weeds or pests. Burning the larger trees at a later date served a similar function. Leaving the large trees standing in the fields, in addition to conserving labor, helped curtail erosion, especially when the fields were situated on slopes.67

Clearings "of dead, girdled trees, with brush fires blazing here and there among the white, standing trunks" were a familiar sight in pre-industrial Appalachia.68 Once started, the brush piles in the fields could burn for several
In the words of Arie Carpenter, an elderly North Carolina woman whose memories of early 20th century Appalachian farm life were recorded in the 1970s, the log heaps would "burn two'r three days." They would "just keep a'burnin' and keep a'burnin'. We'd have t'get up at night and look whether they was a fire had got out, and set anything else a fire." Although farmers such as the Carpenters took precautions to make sure that fire did not spread from their fields, many land clearing fires did spread.\(^\text{19}\)

Accidental fires associated with agricultural work destroyed more timber and caused more damage per acre than fires that arose from any other cause, according to forester J.S. Holmes. The fires usually occurred in the spring when dry, windy conditions prevailed. Trees were said to be more vulnerable to fire damage after the sap began to rise in the spring. And land clearing fires often spread into woodlands adjacent to populated areas where they posed a danger to fences and buildings and where there was frequently a buildup of flammable debris. Holmes asserted that many brush fires were caused by renters or others who did not have a vested interest in preserving the property that they were occupying.\(^\text{21}\)

The use of fire was not limited to clearing new fields. Farmers used fire to remove brush from established fields, too. Tobacco beds were burned before planting in order to eliminate weeds and insects, and farmers burned the edges of fields and orchards in an attempt to control pests.\(^\text{22}\)

Crop-destroying insects were a major concern in the era before chemical pesticides, and mountain farmers believed that burning in and around fields was an effective remedy to this problem. Arie Carpenter, the elderly North Carolina woman quoted previously, attributed the proliferation of harmful insects that she witnessed in her later years to a lack of fire: "We use t'never be bothered with beetles and bugs like we are now. I don't know how come them t'be in this country now like

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Figure 5. A "Buck" fence, 1912. Wooden fences such as these were vulnerable to destruction by woods fires. Photograph courtesy of the Forest History Society, Durham, N.C.
they is. Never use to t’have a bug when we kept th’fields burned off. I reckon that fire kept’em killed out.”

Farmers used fire to clear brush and weeds from around fences and farm buildings. Keeping wooden structures free of debris was particularly important in areas where woods fires were frequent. As a correspondent from eastern North Carolina put it, landowners needed to protect themselves with fire at the proper time “for fear of fire at an improper time much fiercer.” The split rail fences that protected agricultural fields from free ranging livestock in the years prior to the adoption of barbed wire were especially vulnerable to fire, and controlled fires were often set in an attempt to clear the area around these fences. However, these fires sometimes burned out of control and became woods fires in their own right.

Other Causes of Accidental Fires

Forest fires were accidentally started in the course of pursuing various other activities on farms and around homes. Fires used to heat kettles of water for clothes washing, for example, were a common source of forest fires. According to J.S. Holmes, clothes were usually washed on a certain day of the week, regardless of weather conditions, and when wash day fell on a dry, windy day, the small fire used to heat the wash water all too often escaped into the woods.

Farther afield, hunters sometimes set fires to smoke squirrels, opossums, or other animals out of trees, or simply to provide warmth or to cook food. Some fires were caused by people attempting to smoke wild bees out of trees. Other fires were caused by the practice of hunting at night using lighted torches, by matches discarded by hunters, or by the burning wads ejected from muzzle loading rifles. Hunting fires are said to have decreased around the turn of the 20th century as game populations diminished in the Appalachians.

Figure 6. Wash day in the mountains, 1927. Photograph courtesy of the USDA Forest Service, Pisdah National Forest, Cradle of Forestry in America Historic Site.
burned as to kill the greater portion of the timber." This area was dwarfed, however, by the amount of land that had been scorched by surface or leaf fires such as those set by farmers to improve grazing conditions. In their 1905 report, *Southern Appalachian Forests*, Ayers and Ashe estimated that 4,500,000 acres, or 80 percent of the entire area that they had examined, had been touched by these fires.85

Other studies conducted around the turn of the 20th century provide additional estimates of the amount of land in the mountains that was regularly subjected to fire. In a 1910 report on forest fires in North Carolina, J.S. Holmes estimated that 166,000 acres had burned in the mountain counties during the previous year. Holmes calculated that this constituted about five percent of the total forested area of the region.86 In the more remote portions of the mountains, the percentage of land burned each year was much higher. Writing in 1895, W.W. Ashe reported that about one-fourth of the southwestern North Carolina mountain lands in Graham, Swain, and Cherokee counties had been burned during the previous year. He attributed the numerous fires in these counties in part to the large Cherokee Indian population that still resided there.87 Ashe stated that burning the woods had "nearly ceased" in more thickly settled Buncombe County, North Carolina, but that it was "still to some extent practiced in the mountain districts, where cattle grazed in the woods."88 In nearby Jackson County, Ashe found that "the outside mountain lands, or wild lands [were] yearly burned over to supply grazing." He estimated that at least a third of the acreage of these lands had been burned in 1894.89

Writing in 1911, J.S. Holmes stated that in the less developed parts of Clay County, in southwestern North Carolina, fully 50 percent of the land was burned each year. In the same study, Holmes reported that local residents of Swain County, North Carolina, estimated that "from 30 to 50 percent of the land [had] been burned over every year for a long period."90

**Early Opposition to Fire**

The authors of the turn-of-the-20th century government reports cited in the previous section were members of the first generation of professional foresters in the United States. These men viewed forests and forest fires in a distinctly different light from most of the long-time residents of the Southern Appalachians. For farmers and stock raisers, the widely dispersed trees, few saplings, and thick carpet of grass that characterized a fire-formed landscape foretold fat hogs and cattle. But for foresters bent on growing trees for eventual sale as lumber, this same carpet of grass was "annual weeds ... nature using their humble efforts to cover the nakedness of the misused land," and the widely dispersed trees constituted "a sparse, unhealthy forest, entirely insufficient to protect from sun and wind the hardened and impoverished soil beneath it."91 In lieu of grass, the early foresters declared that an ideal forest should have "a thick mat of decayed leaves and twigs which are forming vegetable mould." And instead of widely dispersed trees and little undergrowth, the foresters decreed that "the saplings should be somewhat crowded during their early growth so as
to force them up very tall and straight and to cause the side branches to die so that the timber will not be knotty."

In short, professional foresters viewed the fires that helped to sustain the lives of mountain people as anathema, a scourge to be stamped out, a universal negative that impeded the growth of valuable timber trees, facilitated erosion, and disfigured the landscape. If Southern mountain forests were to be preserved, fire must be suppressed.

Fire suppression, however, would have to occur in the face of firmly entrenched customs. Referring to the Southern Appalachians, a turn-of-the-20th century author wrote, "the general feeling among the natives [toward fire] is one of somewhat placid resignation to an evil which is not fully realized and which is considered almost inevitable."

Laws had long been on the books that regulated or prohibited setting fire to the woods, but these laws were widely disregarded. For instance, a North Carolina law dating to 1777 made it unlawful for people to set fire to the woods except on their own land and required property owners to provide their neighbors with two days' advance notice if they planned to set such blazes. Nonetheless, more than a century later Carl Alwin Schenck, the founder of the Biltmore School of Forestry in western North Carolina, was moved to complain that enforcement of fire laws in that part of the state was "a mere farce."

According to Schenck,

...the Asheville bar is witness to the fact that not a single case has ever come to their notice in which an owner or the State was suing or prosecuting under the old forest fire act. Nevertheless, we all know that millions and millions of acres have been run over by fires in the past years to the absolute destruction of the young growth thereon.

The Rise of the Conservation Movement

The force that would eventually extinguish the fires that ran over "millions and millions of acres" in the Southern Appalachians can be traced to several points of origin. During the waning years of the 19th century, a movement began to take shape in the United States that called for the preservation, conservation, or rational use of the nation's natural resources. The movement arose partly in reaction to the closing of the Western frontier and rapid industrial expansion in the decades following the Civil War. Accompanying this expansion was a wave of railroad building that opened up previously remote areas to lumbering and other extractive industries. As a result, many pristine places were radically altered or destroyed.

The rapid improvement in transportation that made remote areas accessible to industrial interests also made these same areas accessible to city dwellers, some of whom began to view and value such places as refuges from urban life or as locations where relief might be found for conditions such as tuberculosis. As scenic and rural areas began to be valued for their intrinsic qualities rather than merely as sources of minerals or timber, a call arose to preserve some of these places in their unaltered states.
Some government and business leaders echoed the concern of the general public about the fate of scenic and rural areas. A few of these leaders saw opportunity for profit in the growth of the tourist industry that they sensed would accompany the preservation of especially picturesque places. Others were concerned that if lumbering and other industries were not regulated, acute shortages of raw materials such as wood for houses and furniture would arise. Still others were concerned that the rapid defoliation of the hinterlands would result in erosion and increased flooding that would interrupt river transportation and disrupt the generation of the hydroelectric power that was beginning to be employed to run factories, power trolleys, and provide lighting for homes.100

Public interest in conservation accelerated during the first decade of the 20th century, in part because of the influence and support of then president Theodore Roosevelt, an ardent conservationist, and the dynamic leadership of Gifford Pinchot, a prominent forester. Public attention was also drawn to conservation issues by violent floods such as the one that devastated the Monongahela River basin in West Virginia and Pennsylvania in 1907, and by a series of cataclysmic fires that occurred in the northeastern United States in 1908 and in the Pacific Northwest in 1910.101

**The Conservation Movement in the Southern Appalachians**

In the Southern Appalachian Mountains, a regional conservation movement began to coalesce in the 1880s. This decade was a time of reawakening in the region after the ravages of the Civil War, and of rapid industrial expansion.102 As railroads and timber companies moved deeper into the mountains, public attention began to be drawn to the damage that had already been done to parts of the Southern uplands. An article published in *Garden and Forest* magazine in 1888 painted a lurid picture of a landscape in disarray:
The hardwood forests of the more or less broken uplands in connection with farms have in great measure lost the character of the high forest. Deprived of their large timber, opened to the trampling and browsing of cattle and the visitations of fire, the remainder of the tree growth presents an unpromising appearance in many localities, the second growth is supplemented by Coniferous trees. Immense damage has been done by clearing the steeper and more broken lands and the ranges of the hills. Deprived of its protective crust, the bare subsoil of these hill lands, torn into deep ravines, presents a repulsive site suggestive of barrenness and neglect. Raging torrents after every rain rush unchecked down the declivities, eating deeply into them, carrying soil down the valleys, obstructing the beds of the rivers and their estuaries.  

To stem the tide of destruction that was spreading toward the Southern Appalachians, concerned citizens began to call for a portion of the region to be set aside as a national park or forest reserve. The movement to preserve some portion of the Southern mountain forests became formalized with the creation of the Appalachian National Park Association in 1899. The association was based in Asheville, North Carolina, but recruited supporters from throughout the Southern states and elsewhere.  

The movement received added impetus and a model on which to base its designs from the managed forestry practiced on the Biltmore Estate, a massive tract near Asheville that had been assembled by George W. Vanderbilt, the wealthy grandson of shipping and railroad magnate Cornelius Vanderbilt. Two of the men employed by Vanderbilt to oversee his lands, Gifford Pinchot and Carl Alwin Schenck, became prominent figures in the nascent field of forestry in the United States, and many early foresters were trained at the Biltmore Forest School, established by Schenck on Vanderbilt's land in 1898.  

Despite widespread support, the movement to create an Appalachian National Park was unsuccessful in its first incarnation. It did, however, focus attention on the mountain forests and set the stage for the passage, in subsequent years, of legislation that would preserve a significant portion of those forests.  

New Sources of Fire  

While conservationists battled to protect the Southern Appalachian forests, new and lethal sources of fire in the form of railroads and industrial timber-cutting operations were rapidly spreading through the region.  

Railroad development had lagged in the Southern Appalachians due to the ruggedness of the terrain. However, by 1880 trunk lines stretched into the larger valleys, and in the years that followed, spur lines were constructed connecting these main lines to less accessible areas.  

As was the case elsewhere in the United States, wood- or coal-burning steam locomotives were used to pull trains on the early Appalachian railways. Many forest fires were attributed to sparks or burning embers emitted from the smoke stacks of these locomotives, or to ashes containing live coals discarded by train crews. Other fires were started when maintenance workers burned brush or debris along railroad right-of-ways.
Railroad companies attempted to curtail fires by keeping the right-of-way clear of flammable materials, patrolling rail lines in times of extreme fire danger, and installing a device known as a spark arrester in their locomotives to prevent the emission of sparks from the smokestacks. However, these fire-prevention efforts were often half-hearted. Some railroad officials found it preferable to pay the costs of lawsuits over fires caused by their operations rather than to absorb the expense of installing up-to-date equipment on their locomotives or taking other fire prevention measures. And locomotive crews sometimes damaged or disabled the spark-arresting devices because they curbed the power of the engines.108

Figure 9. A steam locomotive hauling logs, early 20th century. Recently timbered areas such as the terrain that this train is passing through were particularly vulnerable to being set on fire by locomotive sparks. Photograph courtesy of the D.H. Ramsey Library Special Collections, University of North Carolina at Asheville.

The logging industry did not constitute a serious fire threat at first. Commercial loggers began to drift into the Southern Appalachians in the 1880s. These early loggers limited their operations to harvesting species such as walnut and cherry that were sufficiently valuable to justify the expense of transporting them out of the mountains, or to harvesting timber in locations where the logs could be floated down rivers and streams to mills and markets. Although this phase of logging resulted in a significant reduction in the selected species, its overall impact was limited, and serious fires did not often follow in the wake of such cutting.109

As railroad lines pushed farther into the mountains, the scale of logging operations increased dramatically. Technological improvements coupled with
accelerated demand made less selective harvesting over wider areas cost effective. First, less valuable species such as mountain birch, locust, and tulip poplar were harvested. Then the pace quickened further, and any timber that could be sold was cut.¹⁰

The timber harvesting practices during this first great wave of logging to wash over the Southern Appalachians were often extremely destructive. Trees were cut so that they fell along the path of least resistance, without regard for the preservation of saplings or smaller trees. On the steeper slopes, logs were often rolled down the sides of mountains, crushing everything in their path. In other cases, heavy rains widened the grooves caused by dragging and skidding logs out of the woods into deep erosional gullies. Most significantly, branches, tree tops, and inferior logs were left strewn across the cut over areas. As this debris dried, it became a serious fire hazard, and severe, intensely hot fires often followed in the wake of logging operations.¹¹

Logging in the Appalachians peaked about 1909; in 1910, almost 40 percent of all the timber cut in the United States came from the region. Logging continued at a declining pace in subsequent years, until by 1930 about 90 percent of mountain lands had been stripped of their salable timber.¹²

The tannin extraction industry that cropped up in the Southern Appalachians at the same time as the logging industry also resulted in a large amount of debris being left in the forests. Trees that had high levels of tannic acid, most notably chestnut oaks and hemlocks, were frequently harvested for their bark alone. The bark was stripped from the trees and hauled to extract plants, where it was rendered into tannin. The finished product was used to treat or tan leather. When chestnut oaks and hemlocks became scarce, tannin was extracted from the wood of chestnut trees.¹³ An early 20th century observer decried the destructiveness of the industry:

In the case of the bark gatherers the wastefulness is particularly deplorable. These men fell the trees—chiefly chestnut-oak and hemlock—for the
bark, and after stripping them make no attempt to use the timber. Every year hundreds of cords of bark are hauled from these mountains, and each load means some giant of the forest lies useless on its native soil. Near the railroads it is profitable to saw the timber and haul it to the station, but the natives find that they can strip the trees and haul the bark much farther than they can afford to haul the timber. It is a mournful site to see these immense trees lying where felled, of no use to anybody, simply marking the wanton wastefulness of man.\textsuperscript{114}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image11.png}
\caption{A spruce-fir forest devastated by logging and fire, Mt. Mitchell, North Carolina. Photograph courtesy of the D.H. Ramsey Library Special Collections, University of North Carolina at Asheville}
\end{figure}

Fires that ignited on the debris left by the tannin extraction industry were very hard to control, a circumstance emphasized by a correspondent from Buncombe County in western North Carolina, who, in the aftermath of fighting a fire, complained that “the difficulty of subduing or even checking the fire was enormously increased by the tremendous amount of lap and brush left on the ground by the chestnut wood men.”\textsuperscript{115}

\textbf{The Assault on Appalachian Fire}

The new sources of fire, coupled with the old, brought added attention to the need for fire prevention in the mountains. Although the initial effort to preserve a large amount of mountain acreage as a national park had failed, conservationists continued to push for legislation that would allow some portion of the mountain forests to be placed under government protection. The result of this pressure was the passage, on March 1, 1911, of Weeks Law, which allowed the federal government to acquire privately held land for inclusion in national forest reserves.

The federal government had been authorized to set aside land for national forest reserves by a congressional act passed in 1891. Until the passage of
Weeks Law, however, forest reserves could only be created by withdrawing unclaimed land from the public domain. No authority existed for the government to actually purchase land for the reserves, and opponents of the reserves asserted that such purchases would represent unconstitutional infringements on state's rights. For this reason no forest reserves were created in the Eastern seaboard states, where no public domain lands existed. Weeks Law changed this by authorizing the federal government to purchase land for forest reserves in the headwaters of navigable rivers in order to protect the navigability of these rivers. By aligning the creation of forest reserves with the constitutionally ordained duty of the federal government to regulate and protect interstate commerce, the framers of Weeks Law were thus able to sidestep legal objections to the purchase of land in the East.

Although Weeks Law was applicable to any state whose legislature consented to its terms, the law made the acquisition of land in the Appalachian Mountains a particular priority. In addition to providing for the acquisition of land, the law appropriated $200,000 for forest fire protection, to be spent in cooperation with individual states or groups of states.116

With the passage of Weeks Law, a practical mechanism was established to combat forest fires in the Southern Appalachians. Not only was the federal government empowered to purchase land in the region and suppress fire on that land, but also individual states were provided with matching funds that might be used to suppress fires on state and private properties.

The first national forest to be created under Weeks Law was the Pisgah National Forest, which was established in western North Carolina in 1916. By 1929 a total of eight national forests had been created in the Southern Appalachians, encompassing a total of almost 2,000,000 acres. These acquisitions represented about three percent of the total area of actual or potential forest lands in the region.117

The Closing of the Appalachian Commons

The forest reserves established under Weeks Law struck at the heart of the old Appalachian economy—an economy that was based in part on free access to unfenced, or commons lands. Under this system, small land holders, or even individuals who owned no land at all, could still augment their incomes or eke out a living by grazing livestock in the mountain forests and by hunting, fishing, and gathering nuts and other wild foods from vacant land.118 As a contributor to an early 20th century timber industry journal put it:

For a century they [residents of the Appalachians] have been accustomed to regard the entire mountain country as their own. They have herded their cattle there; they have hunted, trapped, and fished to their hearts content; they have stripped the bark off a poplar tree worth a hundred dollars to make a shelter for the night; they have chopped a slab out of a curly ash or figured walnut for a gun stock. In their minds the mountain forests were nobody's property and belonged to them as much as anyone.119
However, with the creation of national forest reserves and the increasing development of the mountains as a resort destination, lands that were formerly valued by the residents of the region for hunting, fishing, or range for free roaming livestock began to be valued by outside interests as sustainable sources of lumber or hydroelectric power, or as health retreats, private estates, or hunting preserves. Lands that had formerly been “nobody’s property” were suddenly placed off limits, and if mountain residents hunted, fished, or cut firewood on vacant lands, as they had been accustomed to do for generations, they might find themselves regarded as thieves and robbers.120

**Fighting Back with Fire**

The fire prevention efforts of state and federal officials and private land owners met with determined resistance from some Appalachian residents, for whom restrictions on their use of fire were an affront added to the burden already placed on them by the social and economic changes that engulfed the mountains during the first three decades of the 20th century. According to a report issued by the United States Bureau of Agricultural Economics in 1935, the population of the Southern Appalachians increased 55 percent between 1900 and 1930. Some of the population pressure was relieved by an extensive out-migration that occurred during this same period. Other mountain residents stayed in the region but abandoned farming and went to work for sawmills, railroads, or one of the other new industrial occupations. Those who continued to farm had to sustain themselves on a gradually shrinking land base.121

The deteriorating economic conditions struck Appalachia’s poorest residents the hardest, and they struck back, often using fire as a weapon. As early as 1895, the forester W.W. Ashe asserted that many of the forest fires that occurred in North Carolina were “started by indigent persons who are amenable to no law, who regard all property as open to destruction and forests as communal property; persons whose parents were hunters and who themselves are scarcely yet seriously affected by the civilization which defines property and allows to the individual its possession.”122

When large amounts of Appalachian land began to be acquired by government agencies and private owners at the turn of the 20th century, Appalachian residents began to set “revenge fires” to strike out at these often faceless entities, in much the same fashion that they sometimes set revenge fires to settle a score with a neighbor. National Forest, and later National Park Service lands were burned by mountain residents who had been displaced from or lost the use of those lands, or simply had some generic grievance against the government.123 Timber company lands were burned out of resentment against the company for denying the arsonist access to its lands, or as revenge against the company for not employing the arsonist.124

Private owners of large tracts of mountain land also found their holdings set ablaze when they attempted to deny access to their property and protect their forests from fires.125 George Smathers, a Waynesville, North Carolina, attorney, complained that he had “suffered a lot of damage from parties maliciously or carelessly setting fire to the woods,” on his land. “Most of these
people are disposed to do the right thing,” Smathers added in a letter to the
forester J.S. Holmes, “but some of them are mean....”126 The Biltmore Estate,
George Vanderbilt’s massive private manor near Asheville, North Carolina, was a
frequent target of arsonists.127 “We have suffered from fire during the last winter
more than in any other year since Vanderbilt’s forestry scheme has been
established—approximately 4,000 acres of land were burned over,” wrote
Vanderbilt’s chief forester, Carl Alwin Schenck, in March, 1909.128 Schenck
asserted that the fires were “entirely of incendiary origin.”129 Like Smathers, he
blamed the fires principally on a few malcontents, asserting that “While the
Biltmore Estate enjoys the support of all well-meaning people, it is naturally
opposed by some of the degenerates—one degenerate can do more harm than
can be offset by the balance of the community.”130 Elsewhere in the
Appalachians, private hunting preserves were said to be particular targets of the
mountaineers, who resented the wealthy city dwellers who prohibited them from
hunting on their lands.131

Not all protest or arson fires were set as a blind assault on the new order of
things. As the fire historian Stephen Pyne noted, such fires sometimes served
multiple purposes. In one strike of a match, the setters of incendiary fires could
both register their displeasure with the unwanted changes foisted upon them : from outside and set back the pace of those changes by preserving old familiar
fire landscapes. Setting woods fires became a way of affirming traditional values.
And to the extent that the arsonists retained any access to former commons
lands, they derived the same benefits they had gained from firing the forest in
previous years. Even if they did not retain any rights to a piece of land, setting
fire to the woods might benefit them. For instance, setting fire to a private
hunting preserve might drive deer and other game outside the boundaries of the
preserve, where the animals could be legally dispatched by the mountain
people.132

Practical Measures to Prevent Fires

To achieve their vision of forests free from fire, government officials,
foresters, and large land owners began to take steps to prevent blazes on the
properties they controlled. In the early 20th century, fire towers began to be
erected on high points in the mountains from which fires could be seen over a
wide area. In the national forest reserves, fire lines were cut to prevent the
spread of fires. Trails were cut or improved and telephone lines installed to
facilitate communication and movement within the forests, and tools were
cached at strategic locations to assist fire fighters in their work. Rangers, forest
guards, and temporary fire crews were hired to patrol the forests and fight fires,
and efforts were made to encourage or require cleaner logging practices that left
less flammable residue behind.133

Foresters made efforts to educate or indoctrinate the public on the evils of
fire and enlist support in combating the fire menace. They gave talks to teachers,
farmers’ organizations, and other interested groups, asked judges to emphasize
fire laws in their charges to grand juries, and requested that rural mail carriers
be on the lookout for and report fires. Fire prevention displays were installed at
county fairs; pamphlets were distributed to mountain families explaining forest service practices, and films were made decrying the practice of burning the woods and shown free to enthusiastic rural audiences.\textsuperscript{124}

State and federal agencies also attempted to change public attitudes about forest fires by hiring local citizens to serve as fire wardens, or to assist in fire prevention in other ways. These individuals put a familiar face on what were otherwise distant bureaucratic agencies and gave local communities a vested interest in the success of fire prevention. In some instances, even known arsonists were brought into the fold by employing them to fight or prevent fires. Likeability was a key. Fire wardens or forest service officials who were well-liked in the local community had a better success rate in curtailing fire.\textsuperscript{125}

Other Appalachian residents were enlisted in the cause of fire prevention by the offer of land use rights and special privileges. North Carolina attorney George Smathers described in detail such an arrangement in a letter penned in 1909:

In reply to your question as to what method I have employed to prevent forest fires and destructions resulting therefrom on my boundary of land... I will say, that I have suggested to the natives who reside within, and near my boundary, that we enter into an agreement by which each of them, in the event of fire being spread or caught in the forest, to fight the same until it is extinguished, and that in consideration of their doing this, that I am to accord to each of them the right to range their stock, not to exceed a certain number of cattle, hogs and sheep agreed upon, on my boundary...\textsuperscript{126}

Fire prevention was furthered by the passage of federal and state laws that provided additional money to suppress forest fires and facilitated the acquisition of additional land as federal forest reserves. The most significant of these new laws was the Clarke-McNary Act of 1924, which extended the provisions of the earlier Weeks Law by allowing the federal government to add to national forest reserves land that was principally useful for timber production rather than watershed protection. The Clarke-McNary Act provided federal matching funds for the development of state forestry agencies and included additional financial support for fighting forest fires.\textsuperscript{127}

Individual states passed fire laws and created organizations geared toward forest preservation and forest fire fighting and prevention. For instance, North Carolina created the Office of Forester in a state agency known as the Geological and Economic Survey in 1905. In 1915 the state passed a forest law that made the State Forester the State Forest Warden and gave him the authority to appoint district and township forest wardens as he saw fit. However, several years passed before an appropriation was made to implement this law. In 1921, a law was passed allowing counties the option of cooperating with the state on a cost sharing basis on fire control and prevention. By 1935 the state had passed legislation making the establishment of fire control organizations at the county level mandatory if deemed necessary by the State Forester. In such counties, fire districts of around 1400 acres were established and overseen by
district fire wardens, who were in turn directed by a county fire warden. Other states took similar measures.138

The increased focus on fire suppression at the national level led to the development of better tools for fighting fires and to research that resulted in a better understanding of the conditions in which forest fires occur.139

**Adaptive Uses of Fire**

As their world changed around them, Appalachian residents found new ways to use fire and new reasons to set fire to the woods. Like people in other rural areas, mountain folks were quick to turn the new edict of fire prevention to the their personal advantage by setting “job fires.” Job fires were set by arsonists in the hope that they would be able to gain employment in fighting the fire that they themselves had set.140 The strategy appears to have been at least partly effective. The author of an unpublished 1916 manuscript on the protection of federal lands in the Appalachians asserted that the government avoided hiring men specifically to combat fires, since to do so put “too high a premium on incendiaryism.”141 A former employee of the Pisgah National Forest recalled that in the years following World War II, however, the forest service commonly hired suspected arsonists for fire duty, reasoning that once these men were employed, they would have no more incentive to set job fires.142

The new edict of fire prevention provided less tangible incentives for people to set fire to the woods. For diehard incendiaries, the simple excitement of starting a forest fire was augmented by the satisfaction of outwitting forest service or law enforcement officials or by providing trouble to outsiders whose presence they resented.143 In addition, with the onset of active fire suppression programs, incendiaries could anticipate further relief from boredom in the spectacle of watching fire fighters combat the flames that they had started.144

Some Appalachian residents may have sought to profit from fire prevention policies by starting blazes on portions of their property that were situated in the vicinity of railroad tracks. When fires on private land were caused by passing
locomotives, it was common for railroad companies to pay damages to the land owner whose property was set on fire. This practice provided an incentive for unscrupulous land owners to set fire to their own property in order to collect a settlement from the railroad company. A turn-of-the-20th-century correspondent described this phenomenon:

   We know that many fires attributed to railroads are not caused by the operations of transportation companies. Every fire that starts near a railroad is alleged to have been caused by it. Individuals who wish to go blameless for setting fires find it handy to start one where a railroad will be blamed for it...there are [places] where land is bought and sold on the basis of its value as a source of claims against the railroad for damages from forest fires. Woodland with good timber on it, but out of reach of locomotive sparks, is often not as valuable as a smaller piece of woods with poorer trees that is close enough to the railroad to be fired or to be alleged to be fired by a spark from a passing train.185

Appalachian residents seeking to profit from the illegal manufacture of whiskey also caused a great many fires. Residents of the Southern mountains had produced small amounts of whiskey for sale or home consumption from the earliest days of the region’s settlement. However, liquor manufacture did not become a widespread criminal activity until after the Civil War, when a steep federal excise tax was levied on distilled spirits. Anxious to avoid paying this tax, many small scale whiskey makers began “moonshining,” or manufacturing whiskey clandestinely in stills situated in remote locations. While the practice was by no means confined to the Appalachians, the limited agricultural potential of the mountains coupled with poor transportation facilities that made selling farm produce difficult made moonshining particularly popular in the region.

   The prevalence of moonshining waxed and waned over the years in turn with social and economic changes. Economic downturns caused more people to
turn to moonshining as a source of income. The growth of mining and logging camps in the region in the late 19th and early 20th century led to an increase in moonshining in some areas by providing new markets for distilled spirits. Regional and national prohibition laws passed during the same period encouraged moonshining by making legally produced liquor more difficult to come by.¹⁴⁶

Moonshiners caused forest fires in a variety of ways. Sparks escaping from the open flames used to distill illegal liquor caused some conflagrations. Other fires were deliberately set by moonshiners to provide cover for their operations, which could otherwise be spotted during the daylight hours by the smoke emitted from the distilling fires. Rival moonshiners sometimes attempted to destroy a competitor's operations by setting fire to the nearby woods.¹⁴⁷ After the beginnings of organized fire suppression in the early 20th century, some moonshiners were known to have started fires so that they could sell whiskey to the fire fighters brought in to combat the flames.¹⁴⁸

**Fire in a Time of Crisis**

The collapse of the national economy during the Great Depression of the 1930s exacerbated economic conditions in the Southern Appalachians. Many former residents of the region who had left to seek work in urban areas returned to the mountains and once more took up farming. The increase in the number of farmers further stressed the limited mountain land base, resulting in the cultivation of increased amounts of marginal land. According to one account, slopes as steep as 90 degrees were cleared and cultivated in parts of Tennessee during the Great Depression.¹⁴⁹ Residents of the Southern Appalachians were placed under further stress by alterations to the forests upon which they relied for part of their income and sustenance. Three decades of logging had physically removed or drastically altered large portions of that forest. In addition, the chestnut blight that swept through the Appalachians in the 1920s and 1930s was a severe blow to the traditional mountain economy, depriving mountain residents of the chestnuts that were not only a source of food for people and livestock but also a source of income when gathered and sold.¹⁵⁰

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Figure 14. Hoeing corn on a steep slope, 1943. Photograph courtesy of the D.H. Ramsey Library Special Collections, University of North Carolina at Asheville
At the beginning of the 1930s, organizations engaged in forest fire suppression suffered from the same shortage of money that plagued individuals and organizations across the country. The Great Depression, however, was ultimately a boon to forest fire suppression in the mountains. The Civilian Conservation Corps (CCC), established in 1933 as a way to put some of the nation’s unemployed to work improving public lands, had a substantial presence in the Appalachians. CCC workers served as fire fighters and contributed to fire suppression by constructing fire towers, building roads and trails in the national forests, clearing away flammable debris, and performing similar tasks. The CCC helped to raise public awareness about conservation issues and indoctrinated the young men who served in its ranks with the gospel of forest fire suppression. In addition to the CCC, other “make-work” programs such as the Works Progress Administration (WPA) and the Public Works Administration (PWA) had a substantial presence in the mountains.151

![Figure 15. A forest road financed with funds allotted for unemployment relief, 1931. Photograph courtesy of the D.H. Ramsey Library Special Collections, University of North Carolina at Asheville.](image)

The amount of land under federal control and subject to fire suppression increased markedly during the 1930s. The Great Smoky Mountains and Shenandoah National Parks were established during this decade.152 In addition, the Tennessee Valley Authority, established in 1933, acquired large amounts of valley land in parts of the Southern Appalachians in order to create artificial impoundments for hydroelectric power generation and flood control.153 Existing national forests in the Southern Appalachians were expanded significantly during the Great Depression. Two pieces of legislation, the National Recovery Act of 1933 and the Emergency Relief Act of 1935, enabled the federal government to acquire thousands of additional acres of Appalachian land for inclusion in national forests or parks. The government placed particular
emphasis on purchasing Appalachian lands during the Depression because the greatest number of enrollees in the CCC were from the Eastern states while the majority of public lands were located in the Western states. Rather than incur the expense of shipping workers great distances from their homes, government officials deemed it expedient simply to purchase land for them to work on in the East. 154

At the start of World War II, the cause of fire prevention in the mountains suffered a setback as the CCC and other government “make-work” programs were disbanded and members of these organizations were drafted into the army. The war also led to an increase in lumbering in order to supply the needs of the military. 155

The loss of fire fighters and conservation workers was offset by the draft of many would-be fire starters into the military. During the war years, the government initiated extensive ad campaigns linking fire suppression and the preservation of the nation’s timber supply to the effort to defeat the enemy. Slogans such as “Careless Matches Aid the Axis” cast a patriotic glaze over fire prevention and contributed to a decrease in the numbers of human-caused fires in many places. 156 For instance, incendiary fires are reported to have accounted for 46 percent of all fires in Virginia’s Jefferson National Forest in 1941, but only three percent of all fires in 1947, after the war’s end. 157

World War II marked the birth of the most enduring symbol of fire prevention in the United States. Smokey the Bear, who was the star of countless anti-fire campaigns in subsequent decades. 158

Another consequence of World War II was the acquisition of still more Appalachian land by the federal government. Citing the need for war-time power generation, the Tennessee Valley Authority constructed ten new dams during the war years. The most notable of these projects was the Fontana Dam in western North Carolina, for which TVA purchased over 50,000 acres of mountain land. 159 These TVA projects marked the end of the period of aggressive land acquisition by the federal government. During the early 1940s most federal money was diverted to the war effort. In the decades following the war, land acquisition for federal parks and forests continued, but the pace never equaled that of the pre-war decades. 160

The End of the Fire Life

During the years following World War II, there was a continued contraction in the scale and scope of fire use among the residents of the Southern mountains. Notations scrawled on forestry agency reports dating to the last third of the 20th century show fire being employed to clear away brush, smoke animals out of trees, exact revenge against neighbors, and for other purposes, but these practices were less widespread. 161

According to geographer Gene Wilhelm, the Shenandoah National Park area of Virginia experienced a decline in incendiary and debris burning fires after 1933 but an increase in the number of fires caused by smokers and campers. 162 This pattern was probably common throughout the Southern
Appalachians as agriculture declined and the area became increasingly popular with hikers, campers, and vacationers.

In the Chattooga River watershed of North Carolina and Georgia, forest fires caused by agricultural activities are reported to have declined following World War II, but to have been replaced in part by fires caused by other land clearing activities, such as burning debris on construction sites—a fitting homage to the transformation of this region into a land of vacation homes and retirement villas.63

For some Appalachian residents, the decline in fire use was a welcome change. At its worst, fire could be a dangerous and disfiguring intruder on the landscape. During the burning seasons, smoke sometimes hung like a pall over the mountains. And when the woods were on fire, land owners had to exercise constant vigilance to protect their fences and houses against errant flames.64

For others, the fading of fire from the Appalachian landscape was not so welcome. At its best, fire was more than just a useful tool; it was pleasure and smoke and smell and exhilaration; it made things right to the eye and to the mind and was coupled with seasons and memories.65 The fires, creeping up the sides of the mountains at night, were an eerily beautiful sight.66 Tending bonfires blazing in newly cleared agricultural plots could be a comfortable evening chore. Recalling her childhood in the mountains near the North Carolina-Virginia boundary, Zeta Hamby described bringing potatoes to roast on the edge of the fires that her family set in a newly cleared field on damp windless evenings in the early spring. The potatoes, she recalled, would be black on the outside, but had a special flavor when doused with a little salt.67 Wherever fire bans were enforced for the first time, rural residents complained bitterly about the unkempt, weed choked, unclean appearance of the forest.68

But memories and thoughts such as these faded with each new generation born in the shadow of Smokey Bear. As people's needs and values changed, so did their relationship with fire, a fact remarked upon by long-time Macon County, North Carolina, resident Arie Carpenter:

I don't know what in th' world they [the old timers] burnt th' timber that come off that cleared land for, but they done it, and th' next thing y'know they'd be needin' timber. They wasn't savin' about timber like they are now. Nowadays y'couldn't find a log heap a fire anywhere.69

By the turn of the 21st century, fire had become a tool as arcane as the adze, and the froe, and the bull tongue plough to most mountain people.

Paradoxically, while a new generation of Appalachian residents was growing up with lives increasingly removed from fire, a new generation of foresters was rising who viewed fire in a far more positive light than had their professional predecessors. A few of these men and women began to reexamine the role of fire in mountain ecosystems, and some of them began to advocate "bringing fire back" to Appalachian forests as a land management tool.70 At the dawn of the 21st century, the use of controlled fire in the mountains remains a subject of professional debate.
Any future use of fire in the mountains will follow upon a rich and complex past. Unlike other tools, fire could not be enshrined in a museum case or displayed in a roadside exhibit when it was laid aside by its users. For this reason, it is easy to overlook the important role it played in Appalachian history. Yet for centuries, fire was woven into the fabric of mountain life, and when the burning seasons were suppressed by burning bans, the character of that life was fundamentally altered.

NOTES

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2. Shea, “Our Pappies Burned the Woods...” 159. In addition to the Southern Appalachians, fire use was especially widespread in other rural parts of the southern United States such as the Atlantic and Gulf coastal plains and the Ozark and Ouachita Mountains of Missouri, Arkansas, and Oklahoma. See Bertrand & Baird; Johnson; Kaufman, “A Psycho-Social Study”; Hammar; Otto & Burns; Otto & Banks.

3. Shea, “Man-Caused Forest Fires.” See also Weeber & Baird 39, and for an analogous example from Missouri, see Kaufman, “Psycho-Social Study” 32.

4. See Barden’s dissertation “Lightning Fires in Southern Appalachian Forests” (Univ. of Tenn. 1974); Barden & Woods; Frothingham 57; Wilhelm 465; and Holmes, Forest Fires...During 1909 35.

5. On Native American use of fire in the Appalachians, see among others Delcourt & Delcourt, “Strawberry Fields,” “Pre-Columbian Native American Use of Fire,” and “The Influence of Prehistoric Human Set Fires.” See also Paul A. Delcourt et al., “Prehistoric Human Use of Fire”; DeVivo; Bays 38-41; and Wilhelm 470.


8. Wilson 22, 24-25; Hall, "Protection of Federal Lands in the Appalachians" 3-4
[Unpublished ms. dated 29 June 1916]; Glenn 9; Holmes, "Reply to Questionnaire" III-2, 5-6; Harmon 77; Wilhelm 472; Ashe 27; Ayers & Ashe, "Forests and Forest Conditions" 55.
9. Ayers & Ashe 55-56; Holmes, Forest Fires...During 1909 10, 24; Weber 638.
10. Lanman 367-68.
11. Michaux 90.
13. "John Strother’s Diary."
14. Marcy 189. For a similar description, see Nesbitt & Netboy 122.
15. Holmes, Forest Fires...During 1909 26.
17. Ashe, Forest Fires 10.
21. E.g. see Gibson 32.
22. Ayers & Ashe, "Forests and Forest Conditions" 56; Hall, "Protection of Federal Lands" 1-2; Ashe, Forest Fires 49; Pressey 29; Wilson, "Report on the Forests" 24-25; Holmes, Forest Fires...During 1909 10, 24-25; Weber 638.
23. On the antiquity and extent of the practice, see Price, "Lumbering in the Southern Appalachians" 65; Ashe, Forest Fires 49; Ayers & Ashe, Southern Appalachian Forests 18; Wilhelm 472; and Henson 419.
24. Otto, "The Decline of Forest Farming" 5; Ayers & Ashe, Southern Appalachian Forests 21; and see Avery & Boardman 281. On the livestock industry in the Southern Appalachians, see Burnett, and in the rural South in general, see among others Hilliard, especially pp. 92-149; Stewart; McDonald & McWhiney, "The Antebellum Southern Herdsman"; and Gray & Thompson, History of Agriculture 138-51, 200-12.
25. See, among others, Hahn; Otto, "Forest Fallowing" 54; Pinchot, Breaking New Ground 61; Marcy 189.
26. E.g., see Gray & Thompson, History of Agriculture 139, 47; Silver, A New Face on the Countryside 181-82; Davis 100-02; McDonald & McWhiney, "Antebellum Southern Herdsman"; McWhiney & McDonald, "Celtic Origins"; Otto, Southern Frontiers 15; Schiff 17-18; Stewart 27; Folweiler 188; Ashe, Forest Fires 7; Harn 382; Lackey 363.
27. Sargent 545; Wilhelm 472; Harn 382; Lackey 363; Gibson 35; Maddox, "The Erosion Problem" 4. The French botanist André Michaux provided a brief glimpse of the practice while traveling through the "barrens" of central Kentucky. According to Michaux, "Every year, in March or April, the inhabitants set fire to the grass, which at this period is dry; because its extreme length, would for a fortnight or three weeks prevent the cattle from obtaining the new grass that begins to shoot" (67). In the coastal regions of the South, the practice of burning the woods to promote early spring grass growth was known colloquially as "swingeing off." It is not clear if this term was used in the mountains as well (see Folweiler 188).
28. E.g., see Odum et al. "The Effects of Late Winter Litter Burn" 416; Shepherd 281; Schiff 43; De Selin et al.
29. Ashe, Forest Fires 55.
31. Schiff 18.
32. On the role of fire in sustaining river cane, see Hughes and Shepherd. On cane as a source of food for cattle, see Stewart 67. While fire revitalized cane stands, overgrazing tended to destroy them, and ethnographic accounts suggest that Southern Appalachian cane stands were already in decline before widespread European settlement in the region. See Samuel Cole Williams Adair’s History of the American Indians 241.
33. Most observers asserted that range improvement fires were set every year (e.g., see Price, “Practical Forestry in the Southern Appalachians” 363-64; Ashe, Forest Fires 49; Lackey, “Cutting and Floating Red Cedar Logs” 365); but at least one observer claimed that the fires were set “about every two years.” See Ayres & Ashe, Southern Appalachian Forests 203. Likely there was some variation in the frequency of the practice. Most observers described the range fires as occurring in the late winter or early spring (e.g., see Gibson 35; Harn 382; Lackey 363.) However, at least one author states that the range improvement fires were set during the autumn (see Price, “Practical Forestry” 363; Price, “Lumbering in the Southern Appalachians” 65). It is probable that range improvement fires were set at any time during the cold season when conditions permitted. Fires set in the fall may have been favored in areas where hogs were allowed to free range, as the fires had the effect of revealing chestnuts and other nuts on the ground for these animals to feed on. See Bass 39.
34. See Ashe, Forest Fires 24; and Marcy 189. On the practice of driving livestock to remote parts of the mountains during the summer months, see also Pressey 30-31; Hitch 321; and Bass 39.
35. Clarkson 17-18.
36. Price, “Practical Forestry” 363-64.
37. Gibson 27, 33. In their 1905 study of land in southwestern Virginia, North Carolina, South Carolina, Tennessee, and Georgia for possible inclusion in an Appalachian National Forest Reserve, H.B. Ayers and W.W. Ashe provided a higher estimate of an average of 0.75 cows, 0.45 sheep, and 1 hog per person, but noted that this figure included towns and densely populated farming regions. See Ayres & Ashe, Southern Appalachian Forests 23.
38. Hilliard 136; Stewart 7 (see endnote 11).
39. Holmes, Forest Conditions 98.
40. MacRae 36. The effects of the animals were not entirely detrimental. Although burning the woods to improve pasture conditions for free range livestock was a major cause of intentionally set fires in the Southern Appalachians during 18th, 19th, and early 20th centuries, the animals may have also served the contrary function of curtailing the spread of accidental wildfires by removing or trampling potentially flammable undergrowth and by creating trails through the forests that served as fire brakes. See R.S. Campbell 156; Ayres & Ashe, Southern Appalachian Forests 23.
41. Myren 36; Folweiler 188; Greeley, Forests and Men 23.”
42. Isé 26; Deckert 277; Ashe Forest Fires 56.
43. Boyd 284, 86.
44. Wilhelm 471; Holmes, Forest Fires...During 1909 37; Ashe 46-47; Bass 39.
45. Holmes Forest Fires...During 1909 37; Myren 25.
46. Wilhelm 471-72; Henson 419.
47. Holmes, Forest Fires...During 1909 37. Fires were sometimes set to uncover other things as well. For instance, the authors of a study of the disturbance history of the Chattooga River watershed related an account of a woman who lost a celluloid comb and burned close to 80 acres looking for it. See Bratton & Meier, “The Natural Disturbance History of the Chattooga Watershed” 9.
48. E.g., see Ashe 46; Schiff 18; Folweiler 188; Ayres & Ashe [1905] 203; Shea, “Our Pappies Burned the Woods” 159; Holmes, Forest Fires...During 1909 38; Myren 25.
49. Wilhelm 472; Henson 419; Lackey 363; Folweiler 188; Ashe 46; Jacobs 40; Lord 163; Holmes, Forest Fires...During 1909 37-38; Shea, “Our Pappies” 159; Myren 25; Greeley 23.
51. Lord 163.
52. Ayres & Ashe 203. Also see Jordon 29-40; “Milk Sickness: A Retrospective” 734-35; and Newsome 309.
53. Henson 430; Holmes, Forest Fires... During 1909 38-39; Gibson 35; Shands 35.
54. Hitch 310, see caption for Fig. 2.
55. Holmes, Forest Fires...During 1913 16.
56. Price, “Practical Forestry” 363-64. See also Holmes, Forest Fires...During 1909 29.
57. Maddox, “The Erosion Problem” 4. See also Holmes, Forest Fires...During 1909 29.
58. E.g., Shea, Getting at the Roots of Man-Caused Forest Fires 37, 62; Duerr 122; Maddox, The Erosion Problem 4; Nesbitt & Netboy 126.
60. Shea, Getting at the Roots.
61. Shea, Getting at the Roots 11, 32.
62. Greeley 23. For an example of this thinking from the Ouachita Mountains in Arkansas, see McBride 5.
63. Shea, Getting at the Roots 10, 69. The belief that fire made the woods “clean” was widely held across the South. See Hansbrough 241, and Tekippe 99-100.
64. On the “slash and burn” agriculture practiced by mountain farmers, see among others Ayers & Ashe, “Forests and Forest Conditions” 58; Plessey 29; Glenn 11; Hitch 315; Holmes, Forest Conditions in Western North Carolina 14; Davis 105-06; Michael Williams, Americans and Their Forests 60-67; Ayres & Ashe, The Southern Appalachian Forests 20; Maddox, “The Erosion Problem” 3-4; and Otto & Anderson, “Slash-and-Burn Cultivation.” On land rotation in Appalachia, see Hart. On the difference in fertility between upland and valley lands, see Murphy & Hudson. On the long term effects of shifting or “slash and burn” agriculture in the Appalachians, see Kalisz.
65. Otto, “Decline of Forest Farming” 23; Otto, “Forest Fallowing” 58; Ayers & Ashe, “Forests and Forest Conditions” 58; Davis 105-06; Michael Williams, Americans and Their Forests 60-67; Ayres & Ashe, Southern Appalachian Forests 20; Hitch 315; Nesbitt & Netboy 123; Glenn 11.
66. Komarek I. See also Hart 150-51, and Otto, “Decline of Forest Farming” 21-22. On Native American agriculture in the Southeast, see among others Hatley; Murphy & Hudson; and Barden.
68. Zeigler 258.
69. Page & Wigginton 88.
70. For other examples of care taken in tending agricultural fires, see Abbott, Curry, & Hoole 46; and Hamby 197. On agricultural fires as an inadvertent cause of forest fires, see among others Ashe 56; Deckert 277; and Duerr 121-22.
71. Holmes, Forest Fires...During 1909 30; Duerr 122.
73. Page & Wigginton 95; on reducing agricultural pests with fire, see Shea, Getting at the Roots 67 and Henson 419.
74. Holmes, Forest Fires...During 1909 30-31; Sarvis 35.
76. Henson 41a; Sarvis 35; Bratton & Meier, "Natural Disturbance History" 9. For an example of the practice from rural Missouri, see Kaufman, "A Psycho-Social Study of the Cause and Prevention of Forest Fires" 14; and Kaufman, "Social Factors in the Reforestation of the Missouri Ozarks" 53. According to Kaufman, the practice of using fire to clear weeds and debris from around wooden fences and thereby making them fireproof was called "counterfiring."
77. Holmes, Forest Fires...During 1918, 1919, and 1920 26.
78. Holmes, Forest Fires...During 1909 31; Ashe 56; Pyne, Fire in America 157.
80. Ashe 48; Cowdrey 94; Davis 113; Unpublished letter, J.R. Finley to W.W. Ashe, 25 Sept. 1908; Holmes, Forest Fires...During 1909 31-32. On hunting with torches, see also Kawashima & Tone 176.
81. Gibson 28; Price 363-64; Deckert 277.
82. In 1885 North Carolina passed a law expressly forbidding wagoners (freight haulers) and campers from leaving campfires without extinguishing them, although the law was apparently seldom enforced (Holmes 1915 22); Holmes, Forest Fires...During 1909 32; Duerr 122.
83. Holmes, Forest Fires...During 1914 22; Duerr 122.
84. Holmes, Forest Fires...During 1909 32-33.
85. Ayers & Ashe, "Forests and Forest Conditions" 56; Ayers & Ashe, Southern Appalachian Forests 18.
86. Holmes, Forest Fires...During 1909 19.
87. Ashe 49.
88. Ashe 46.
89. Ashe 49.
90. Holmes, Forest Conditions 35, 39.
91. Ayers & Ashe, "Forests and Forest Conditions" 56; Price, "Practical Forestry" 364.
93. Van Lear & Waldrop 3; Pressey 29-30; Greeley 26; Schiff 15-115.
94. Price, Practical Forestry 363.
95. Ise 21; Kawashima & Tone.
96. Holmes, Forest Conditions 25.
98. Hays; Nash; Ise; Gatewood; Pinchot, "Progress of Forestry in the United States" 294.
99. Smith, "The Appalachian National Park Movement, 1885-1901"; Nash; Gatewood; Gleitsmann; "A Suggestion" (1892); Gibson 31-32.
100. Hall, "Protection of Federal Lands"; Gatewood; Hays 31; Glenn 13-15; Gibson; Korstan; Hough; "The Appalachian Park."
101. Frome 33-63, 201-11; Hays; Shands 29; Ise 143, 147-50; Pyne, Year of the Fires; Greeley 15-18.
102. Glenn 29-30. Some sources point to 1885 as the year in which the first published call for the preservation of some portion of the Southern Appalachians as a national park or forest reserve was issued in the form of a printed version of a talk presented to the American Academy of Medicine by a physician named Henry O. Marcy. See Joseph Hyde Pratt, "Twelve Years of Preparation" 1028; Smith 38; and Greeley 68.
103. Mohr 35.
104. Smith; Gatewood; Ise 207-12.
105. Gatewood 31; Holmes, Forest Conditions 45; Smith 39; Pinchot, Biltmore Forest; Pinchot, Breaking New Ground 50-69; Schenck.
109. Lambert, “Logging the Great Smokies” 351-53; Eller, Miners, Millhands, and Mountaineers 87-93; Eller, “Land as Commodity” 17; Wallach 363-64; Pressey 26; Wilson, “Report on the Forests” 24; “A Suggestion” 325; Pratt, “Roan Mountain” 333; Ayres & Ashe, Southern Appalachian Forests 19. Much of the walnut harvested in the Southern Appalachians during this early stage of logging is said to have gone into the manufacture of sewing machines, which were just becoming popular at this time. See Horn 109-10.
110. Pressey 26; Gatewood 30; Hall, “Protection of Federal Lands” 8; Frothingham 8-12; Eller, Miners, Millhands, and Mountaineers 93-112; Eller, “Land as Commodity” 16-18; Pratt, “Roan Mountain” 333; Wilson 24.
111. Wilson 24-25; Ayres & Ashe, “Forests and Forest Conditions” 57; Ayres & Ashe, Southern Appalachian Forests 19; Pressey 26; Price, “Lumbering in the Southern Appalachians” 64-65; Price, “Practical Forestry” 362; Lambert, “Logging the Great Smokies” 354-59; Pinchot, Biltmore Forest 17; Gatewood 30; Glenn 12; Wilhelm 472.
112. Eller, Miners, Millhands, and Mountaineers 109; Eller, “Land as Commodity” 16; Frothingham 17.
113. For an overview of the tannin extraction industry, see Hergert. On the tannin extraction industry in the Southern Appalachians, see also Duerr 204; “North Carolina Timber Situation” 39; Gibson 33; Glenn 12; Ayres & Ashe, Southern Appalachian Forests 19; Frothingham 12.
116. On Weeks Law, see among others Frome 78, 84, 103, 135, 211; Kniep 443-44; Schiff 119-27; Graves, Purchase of Land under Weeks Law; Clark 54-64; Steen 122-31, 75; Ise 207-23; Pratt, “Twelve Years of Preparation”; “The Passage of the Appalachian Bill”; “Editorial: The Appalachian Bill”; Peters; Gibson 25-26; Maddox. Policy and Methods. For the text of Weeks Law, see Graves, Purchase of Land under Weeks Law 12-14.
117. Shands; Frothingham 6-7. Frothingham states that in 1929 national forests covered three percent of actual or potential forest lands in the mountainous portions of the states of Alabama, Georgia, North Carolina, South Carolina, Tennessee, Kentucky, Virginia, West Virginia, and Maryland.
118. See Otto, “Forest Fallowing”; Otto, Southern Frontiers 56; Davis 130-36; Silver, Mount Mitchell and the Black Mountains 158-59.
119. Gibson 34-35. For a similar description, see Pinchot, Breaking New Ground 61, and for an example see Schenck 30.
120. E.g., Schenck 30.
121. Gray, "Introduction," in *Economic and Social Problems* 5; Hall, "Influences of the National Forests" 403; Eller, *Miners, Millhands, and Mountaineers* 229-31; Otto, "Decline of Forest Farming."

122. Ashe 56. For a general treatment of the effect that post-Civil War social and economic changes had on the poorer members of Southern society, see Hahn, "Hunting, Fishing, and Foraging."

123. Sarvis 33-34; Henson 430; Wilhelm 473; Shands 35; Wallach 371-72.
124. Henson 430; Gibson 35.
129. Schenck to Pratt, 10 Apr. 1909.
130. Schenck to Pratt, 3 Apr. 1909. It is possible that Schenck's imperious personality may have contributed to the arson problem at Biltmore. According to Gifford Pinchot, who preceded Schenck as chief forester at the estate, "Being a German with official training, [Schenck] had far less understanding of the mountainmen than he had of the mountains and the woods. He thought of them as peasants. They thought of themselves as independent American citizens—and, of course, they were right!" (Pinchot, *Breaking New Ground* 65). Other mountainmen may have simply resented the fact that a wealthy outsider like Vanderbilt had gained control over such a vast amount of land.
131. Henson 430.
132. Pyne, *Fire in America* 152; Weeber & Baird 76, 79; Tekippe 86, 136; Henson 430.
133. Hall, "Protection of Federal Lands" 6-7; Graves, "Protection of Forests from Fire"; Sarvis 33; Clapp; McCormick 595; Hall, "Influences of the National Forests" 405; Frothingham 60-61; Holmes, *Organization of Co-Operative Forest-Fire Protective Areas*.
134. Frothingham 60; Graves 9; Clapp, "Fire Protection"; Unpublished letter, State Geologist to J.S. Ferguson, 10 Aug. 1909; Maddox, "Part II, Collaborators Annual Fire Report"; Holmes, *Forest Fires...During 1912* 28-29; Ross, Sarvis. The most notable of the pre-WW II anti-fire campaigns in the South was the so-called Dixie Crusade. During the Dixie Crusade, forestry workers in specially equipped trucks toured the South preaching the evils of forest fires and showing anti-fire films that were designed to appeal to rural audiences. The Dixie Crusade targeted woods burners in Florida, Georgia, Mississippi, and Alabama, but apparently did not reach into the Southern Appalachians. See Erle Kauffman, "The Southland Revisited"; Schiff 36-37. Excellent summaries of the fire prevention activities and propaganda campaigns waged at the state level can be found in the various biennial reports of the Department of Conservation and Development of North Carolina. See North Carolina Department of Conservation and Development's *Second Biennial Report* (1928), *Third Biennial Report* (1930), *Fourth Biennial Report* (1932).
135. Sarvis; Frothingham 61; McCormick; Ross; Shea, *Getting at the Roots* 25; Curtis 13.
137. Clepper 53-54, 106; Gatewood 41; Komarek 2; Kneipp 446; Steen 185-95.
139. Cowan 54.
140. Henson 419; Sarvis 34; Myren 24; Shands 35.
142. Sarvis 34. An early form of job fires are reported to have been set in Pennsylvania as early as the 1880s, and may have occurred in the Southern Appalachians as well. According to Charles Sargent, the author of an early government report on the forests of North America, laborers seeking employment as tan bark peelers would sometimes set fire to hemlock forests in order to generate a demand for their services. Once the hemlock trees were burned, the bark had to be harvested without delay or it would lose its value. Thus a large, if short-lived demand for forest workers was created. See Sargent 510.

143. Shea, Getting at the Roots 15, 33, 57. See also Tekippe 119.
144. For a non-Appalachian example, see Kaufman, “Psycho-Social Study” 12.
146. On the historical background of moonshining in the Southern Appalachians, see Wilbur R. Miller, Revenuers & Moonshiners. For a lengthy discussion of the history of moonshining in the Appalachians and a description of moonshining in western North Carolina in the early 20th century, see Horace Kephart, Our Southern Highlanders, especially pp. 110-90. For references to moonshiners operating in the vicinity of logging camps, see Bratton & Meier, “Natural Disturbance History” 9-10, and Bratton & Meier, “The Recent Vegetation Disturbance History of the Chattooga River Watershed” 374.
147. Henson 419; Sarvis 35; Brown 126. For a reference to forest fires caused by moonshiners near the Biltmore Estate in western North Carolina, see Schenck 171. For a brief description of moonshiners in the vicinity of the Biltmore Estate, see Schenck 64-65.
148. Curtis 12. Conversely, Curtis notes that when Civilian Conservation Corps camps were established, many moonshiners who marketed to the camps avoided setting fire to the woods so that they would not incur the wrath of government officials and thereby lose the lucrative market that these camps provided.
149. Peet & Reynolds 19; Otto, “Decline of Forest Farming”; Frank & Reid 312.
152. Carlos C. Campbell, Birth of a National Park in the Great Smoky Mountains; Brown 78-92; Darwin Lambert, The Undoing Past of Shenandoah National Park.
153. Tennessee Valley Authority Information Office. A History of the Tennessee Valley Authority; Chandler; Mastran & Lowerre 51-52.
154. Otto, “Decline of Forest Farming” 26; Kneipp 446, 83; Mastran & Lowerre 53-54.
156. Bratton & Meier, “Recent Vegetation Disturbance History” 374; Bratton & Meier, “Natural Disturbance History” 10; Sarvis 58; “Wartime Forest Fire Prevention”; Pratt, “Progress of Wartime Forest Fire Prevention Campaign”; Lentz.
157. Sarvis 58.
158. Little, “Smokey’s Revenge.”
159. Tennessee Valley Authority Information Office 19-24; Brown 145-73.
160. Wallach 368-469.
uneven pace in the Southern Appalachians. For example, see Weeber & Baird for a study of a three-county area in east Tennessee where the woods were commonly set on fire well into the 1970s.

162. Wilhelm 473.
164. On the negative effect of fire on people's lives, see Martin 53.
165. On the pleasurable aspects of fire, see Bertrand & Baird, who reported that forest residents in the deep South evinced a distinct nostalgia for the smell of smoke when the woods were burning and suggested that it didn't seem right not to smell smoke from woods fires at certain times of the year (17). The psychologist John Shea noted that "The sight and sound and odor of burning woods" provided excitement for the residents of remote rural areas (Getting at the Roots 37). Thomas Clark noted that in the South "...the pungent smell of burning dust was thought to have a nostalgic appeal" (8).

166. See the description attributed to Charles Lanman, above. See also Mathews 233. While near the North Carolina-Georgia border in the early winter of 1811, the noted surveyor Andrew Ellicott observed that the range fires set by Cherokee Indians living in the area "made a beautiful and brilliant appearance at night; particularly when ascending the sides of mountains." For another reference to the beauty of the woods fires at night, see Kaufman, "Social Factors," 11. According to an anonymous informant for a fire study in the mountains of east Tennessee, at the time when range burning was widely practiced it was not uncommon to see "the whole mountain on fire" (Weeber & Baird 53).

167. Hamby 197.
168. For non-Appalachian examples that doubtless mirrored the feelings of Appalachian residents, see McBride 5; Kaufman, "Psycho-Social Study" 11, 20.


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PAGE 209 - APPALJ
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