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Forest History Today

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Because They Said *Yes*

The Forest History Society has faced many decision points during its proud history. For a small nonprofit organization to make it to 75 years, though, many people had to say *yes*—even when there were obvious risks and no guaranteed outcome. But doing so has made FHS the worldwide nexus for forest history.

When a contingent from the Minnesota Historical Society and the University of Minnesota met with F. E. Weyerhaeuser at his St. Paul home in 1945, initially, they were seeking a way to celebrate Minnesota's centennial in 1949. But the conversation soon turned to the importance of lumbering in the state and the lack of a scholarly research center focused on the history of forestry and forest products. The Weyerhaeuser family said *yes* to providing seed money to establish the Forest Products History Foundation, the predecessor to the Forest History Society.

By 1983, FHS had become a separate membership organization. And it had moved twice in search of enough space for offices and the collections: first to Yale University and then to the University of California, Santa Cruz, both chosen because FHS's leaders wanted to be affiliated with a forestry school. Neither situation, however, offered opportunity for growth. But in both cases, staying put meant there'd be no opportunity either. Faced with a monumental decision, the FHS board said *yes* to moving across the country to be affiliated with Duke University, and then it quickly said *yes* again to raising money to purchase a small office building and add an extension to house the growing library and archives. It was a strategic move that led to a successful relationship with Duke and its Department of History and its Nicholas School of the Environment and to opportunities for new collaborative programs.

In 1958, what started the year before as a mimeographed newsletter gave way to a print publication with oral history excerpts called *Forest History*, a name that would last until 1974, when it was replaced by the *Journal of Forest History*. In 1990, the FHS board adopted *Forest & Conservation History*, reflecting the broadening nature of the Society's mission. In 1995, the boards of the Forest History Society and American Society for Environmental History said *yes* to merging their respective journals into a new publication, *Environmental History*. It is now the world's leading scholarly journal in the field. At about the same time, the Society decided to start a magazine called *Forest History Today* specifically for FHS members that would offer scholarly articles written for a general audience, and to subsequently make it available to all on the FHS website in an effort to further everyone's understanding of our forest history.

In 2010, the Society's strategic plan identified additional space as one of its top priorities. The Society had by then occupied the same building for 25 years and simply lacked room for all its library and archival materials. For several years, FHS rented space for its own publications off site and for certain archival materials. Then the FHS board and staff said *yes* to the largest campaign the Society had ever attempted—to secure land and construct a building specifically designed as a library and archives.

To make this happen, our supporters and friends—old and new—said *yes* to providing the financial support that enabled the Society to move into its new library, archives, and headquarters in January 2019. The new building transformed the organization by providing, for the first time in its 75-year history, state-of-the-art facilities to support staff responsibilities, meet members' needs, and serve as a springboard for new collaboration and funding opportunities. The final campaign raised $7.1 million; the resulting building now provides the forest and conservation community with a point of pride as the center for the preservation, scholarship, research, and education in forest history.

Let me cite one more example in our history when someone said *yes* and made extraordinary things happen. The latest occurred last fall, when the FHS board approved a new strategic plan. It is not a "holding pattern" plan, but a growth plan designed to leverage new opportunities and strategic advantages. We hope that, when asked, you will again say *yes* to the vision of how the Forest History Society can help share information and knowledge among all who are interested in forests and conservation and thereby contribute to enlightening the public about the values of forests for humankind.

Forest History Today

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"By understanding our past, we shape our future" is the motto of the Forest History Society. Coincidentally, three articles in this issue allude to it. The first is the features article by environmental historian Donald Edward Davis. In the spring of 2021, FHS extended a pair of invitations to him: one to deliver the Lynn W. Day Lectureship in Forest and Conservation History that November, and one to prepare an article for this magazine. Both would draw from his new book *The American Chestnut: An Environmental History*, which examines the iconic species from pre-European settlement through to today's efforts to restore it to eastern U.S. forests. The article explores how the focus on (and celebration of) a handful of unusually enormous individual trees may be influencing those restoration efforts. His lecture is on our YouTube channel at youtube.com/foresthistory.

In the 1920s, establishing a mill town in the Pacific Northwest virtually overnight simply by shipping its workers, equipment, and buildings by rail to a site and setting them in place was not unusual. What makes Maxville, Oregon, different—and why it's the subject of the Places column—is the town's complex racial history. By documenting, interpreting, and sharing that history, Gwendolyn Trice, the daughter of a former employee, and the Maxville Heritage Interpretive Center are simultaneously shaping the town's future and its legacy.

Conversely, willfully choosing to ignore lessons from the past also shapes the future. Frequent contributor Char Miller's Portrait column is about the early-twentieth-century ecologist William Bray, whose innovative scholarship and recommendations for conserving forests and watersheds in Texas were disregarded at the time. He warned his fellow Texans that when it comes to conservation, it "behooves a democracy to take a long look ahead." Miller argues that Texans continue to pay for their forebearers having failed to do so.

Speaking of Texas, Greg Christensen is a writer and advertising creative director based in Dallas. His interest in design led him to investigate who came up with the iconic trapezoidal shapes the U.S. Forest Service uses in its signage to identify its lands and buildings. That research journey led him to FHS and our wealth of materials on the topic. He discovered that Virgil "Bus" Carrel, a forester with no graphic design background, had developed the "Family of Shapes"—a design aesthetic for the agency's signage that would "complement natural beauty" yet be instantly recognizable to passing drivers. Christensen also found that Carrel's vision continues to win praise from designers nearly sixty years later.

Another Forest Service employee, Robert K. Winters, is the focus of Margaret Andrews's article "'There Are Advantages All Ways': Choosing a Career in Forestry in the 1920s." Unlike Christensen, Andrews found her research materials close to home: Winters was her father. His letters and diaries are used to tell the story of how Winters consulted with his family and fiancée as he struggled over whether to pursue a career as a forest researcher rather than as a forest ranger—a career that initially did not seem very exciting but proved rewarding.

Two articles highlight unusual topics in forest history. In "Feathered Fire Fighters," Elizabeth Macalaster tells us how the Forest Service

experimented with homing pigeons as a way for men to communicate while fighting forest fires. Another overlooked set of actors in the history of forest management are Catholic monks. Jason M. Brown examines their centuries-long connection to the land in "Managing for Ecological and Spiritual Values: A Brief History of Monastic Forestry."

Lastly, 2021 marks the seventy-fifth anniversary for two organizations. The first is the U.S. Bureau of Land Management. Since 2009, James Skillen has published three books about different aspects of its history and has also contributed two related articles to this magazine. So, when he contacted me to offer another one reflecting on why this milestone was passing with so little fanfare, saying "yes" was a no-brainer.

The other celebrant is us—the Forest History Society. To commemorate the anniversary, we've created an illustrated timeline with highlights of our history. My thanks to former FHS staff members Cheryl Oakes and Kathy Cox for helping with the timeline, and to everyone—whatever their relationship to FHS—who has contributed to the success of the Forest History Society over the last 75 years.

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ON THE COVERS
Front: Photo by J. T. Sohr, flickr.com/photos/blmoregon/8555289958/

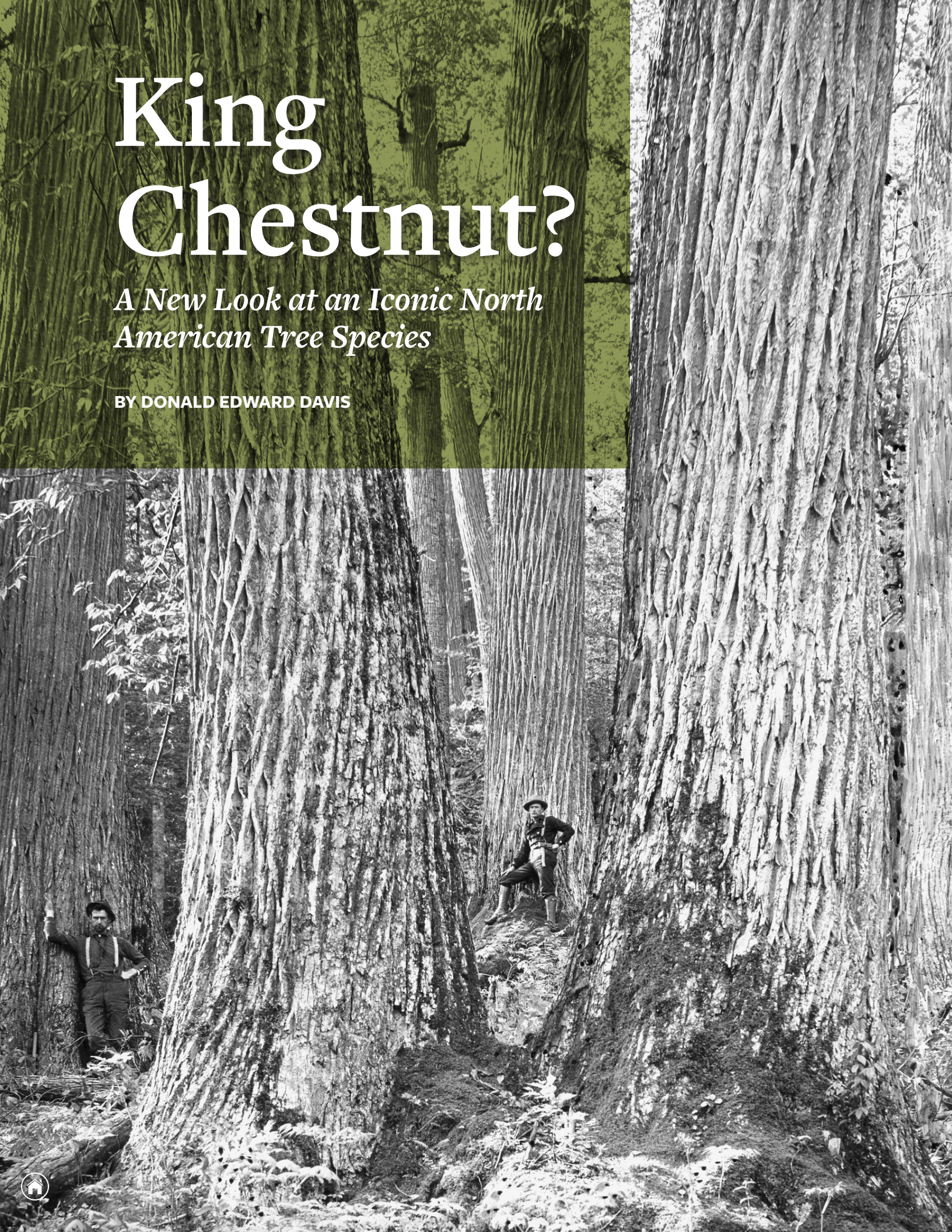
Back: FHS3245, Forest History Society Photo Collection

Articles appearing in this journal are abstracted and indexed in HISTORICAL ABSTRACTS and AMERICA: HISTORY AND LIFE.

King Chestnut?

A New Look at an Iconic North American Tree Species

BY DONALD EDWARD DAVIS



The loss of the American chestnut was a national calamity, although not for the sentimental reasons often associated with the species.

If there is a single photograph that illustrates the prominence of the American chestnut in the southern Appalachians during the early twentieth century, it is the one taken by Sidney Vernon Streator in 1909. Appearing in the January 15, 1910, issue of the *American Lumberman*, the black-and-white image features several large chestnut trees in Poplar Cove, above Little Santeetlah Creek in Graham County, North Carolina. According to archivist Eben Lehman of the Forest History Society, of the more than 35,000 images in the Society's archives, the Streator image "is by far the one most requested for use. . . . People always seem to be impressed by the sheer size of the chestnut trees in the photograph, and how the men pictured are just dwarfed by these tree trunks."[1]

Streator captured the image in the summer months, when the leaves on the trees' cascading branches are completely unfurled. Standing among the chestnuts to offer perspective are timber agent D. W. Swan and timber warden E. B. King, individuals who were likely employed by the Whiting Manufacturing Company when the photograph was taken.[2]

The Whiting Manufacturing Company was owned by Frank and William Whiting of Philadelphia, who operated large lumber mills in Abingdon, Virginia, and Judson, North Carolina. Under the guise of an independent news story, the *American Lumberman* published the image of the chestnuts in order to advertise the Whitings' newly acquired timber holdings. The goal was to convince American and British investors to fund the construction of a railroad into the remote area, as the Whiting brothers did not have the required funds to do so. Although the position of Swan and King in the image distorts the size of the two trees in the foreground, both trees appear to be six feet or more in diameter. In the original publication, the written caption beneath the photograph—likely composed by Streator himself—describes the trees as "large, sound, and free from visible effects."[3]

Streator's image provides important documentation of one of the last remaining old-growth stands of American chestnut (*Castanea dentata*) in the eastern United States. Although they are exceptional trees, and do not represent the typical stand, they are visual reminders of what a mature grove might look like if afforded proper soil, nutrients, rainfall, and sunlight. They were also not the only chestnuts in the company's holdings, as the Whiting brothers possessed some 70,000 acres of timber across four watersheds.[4] When the parcel was surveyed by the Lemieux Brothers & Company—an independent cruising firm based in New Orleans—chestnut was the second most dominant species, accounting for 209,346,743 board feet of lumber.[5] For perspective, that volume is greater than the total amount of chestnut milled in the Mid-Atlantic states in 1909, the historic peak year of production.[6] In the so-called Belding Tract, which included Poplar Cove where the Streator photograph was taken, Lemieux Brothers estimated that the 10,000-acre parcel contained more than 40 million board feet of chestnut. In fact, the trees comprised thirty percent of all standing timber—only Eastern hemlock was more plentiful.[7]

Although western North Carolina timber had already acquired notoriety among timber barons in both England and Europe when the Streator photograph was taken, and was of exceptional quality, not all chestnuts in the southern mountains were sound or free from visible defects.[8] As a result of natural and human-set fires, which damaged the outer bark and made them prone to scarring and disease, the trees had a tendency to become hollow as they aged.[9] This made them beneficial to animals making dens inside the trees, especially bears, raccoons, opossums, and squirrels. However, lumbermen generally avoided such specimens, which allowed them to form, over time, even larger interior cavities. Consequently, humans found creative uses for the trees, including both temporary and permanent shelter.

One of the most innovative uses of such trees was documented by the *New York Times* in 1904.[10] According to the anonymously written report, a federal revenue agent named Thomas H. Vanderford was summoned to inspect a large chestnut tree in the Pisgah Mountains near Asheville. The tree was emitting smoke from its main trunk in the morning and evening, suggesting a smoldering fire at its base or interior. Smoke was also seen emerging from a small hole at the top of the tree, a specimen that was otherwise in perfect health. In fact, prior to Vanderford's arrival, several individuals dug around the base of the trunk and found it firmly rooted with "no hollow under it."[11][12]

Upon arrival, Vanderford made a careful examination of the tree, but found no acceptable cause for the smoke. The next day he brought an iron rod, which he thrust repeatedly in the ground in concentric circles around the tree. On a third day, after considerable searching, Vanderford detected something

FHS3245, FOREST HISTORY SOCIETY PHOTO COLLECTION

This photo of American chestnuts, located in Poplar Cove, Robbinsville, North Carolina, was taken in 1909, and appeared in *American Lumberman* (January 15, 1910).

unusual about 100 yards from the tree. Later that evening he left for nearby Hendersonville, returning the following day with six revenue officers. At daylight, all seven men observed smoke coming out of the tree "at full blast." Finding the spot from the day before, the men dug a hole with picks and shovels, which led them to an underground tunnel. Armed with carbine rifles, the men moved cautiously toward the interior of the tree, where they discovered "a blockade still running at full capacity." They also found Amos Owens inside the chestnut, who the *New York Times* called "the most incorrigible revenue violator in the State." Owens was apparently asleep when Vanderford found him, but awoke when he tapped him on the shoulder. "I suppose you would find me out after a while," Owens muttered. "I knew you were prospecting around here."[13]

In another instance, a hollowed-out chestnut tree provided temporary housing for an entire mountain family. In an interview conducted during the 1990s, Oleta Nelms recalled that her grandfather, John Denton, had once built a log cabin adjacent to a huge fallen chestnut tree. According to Nelms, the tree was actually near the location where the Sidney Streator photograph was taken in 1909.[14] Using an axe and other tools, she remembered, Denton expanded the structure "right into that chestnut log."[15] The hollowed-out portion of the tree was so large it allowed Denton to stand fully erect without bumping his head, even though he was six feet four inches tall. According to Nelms, the tree provided shelter for Denton and his family until a more permanent home could be built. Not surprisingly, the tree remained part of community folklore for decades and even caused a young Oleta to be teased at school. As Nelms explained it, her classmates thought it peculiar her "grandfather had lived in a log."[16]

An equally remarkable story was told by Charles Grossman, one of the first rangers of the Great Smoky Mountains National Park. On a mountainside above Cosby, Tennessee, Grossman documented a chestnut tree 9 feet 8 inches in diameter at a point 6 feet off the ground. "The hollow portion is so large that [an adult] could stand up in it," wrote Grossman after discovering the tree. "The hollow runs more than 50 feet up the trunk and at its narrowest point is not less than three feet," he recalled. "This must be the tree of which I heard. A man lost some stock during a snowstorm and later found them safe in a hollow chestnut tree."[17] Frank W. Woods, a University of Tennessee forestry professor, believed the chestnut was the same one another Cosby farmer had used "as a barn for a pig and a cow."[18]

The largest American chestnut tree on record, however, was located at Francis Cove, North Carolina, near the town of Waynesville. According to several published sources and one eyewitness, the enormous chestnut measured "seventeen feet in diameter."[19] In fact, the late Colby Rucker, of the Eastern Native Tree Society, believed the tree very likely possessed "the greatest known diameter of any eastern hardwood."[20] Gene Christopher, a native of Francis Cove, recalled seeing photographs of the tree and even played in the decaying stump as a young boy. According to Christopher there were other large chestnuts at the site, including one tree with such an enormous hollow trunk that, after falling on the ground, cattle could not only enter inside, but turn around and exit at will.[21]

Christopher believes the giant chestnut was felled for firewood in 1915, a full decade before the blight reached the Francis Cove community.[22] His use of the term firewood is somewhat misleading, however, as chestnut was unpopular for use in fireplaces due to its tendency to throw off sparks.[23] Chestnut kindling, on the other hand, was highly desirable for early-twentieth-century cookstoves, woodstoves, and locomotive fireboxes. In airtight structures, chestnut burned hot, evenly, and longer than pine or other woods. As a result, chestnut stovewood had become a common heating source for home parlors, community stores, and one-room schoolhouses.[24] Cured chestnut kindling also left fewer ashes and produced less smoke, making it a favorite among moonshiners needing to conceal their illegal distillery operations.[25]

Although the true dimension of the Francis Cove chestnut will perhaps never be known, the tree was undoubtedly a rare and exceptional anomaly. If removed for firewood, the measurement was likely taken at the very base of the stump, which may explain its exaggerated size. However, some researchers believe the seventeen-foot measurement refers to the circumference of the tree and not its true diameter.[26] If the Francis Cove tree was seventeen feet in circumference, it would only be five-and-a-half feet in diameter. This would hardly be a noteworthy specimen, as the historical record is replete with examples of trees seven, eight, and even nine feet across.

KING CHESTNUT?

Knowing the size and past distribution of the American chestnut is important, particularly as attempts to reintroduce the species intensify. Chestnut enthusiasts should be careful not to make false claims about the species, however, as they could hamper the restoration effort. By promoting unproven notions about their size and prevalence, restorationists raise false expectations about the tree's growth and performance. As I document in my book *The American Chestnut: An Environmental History*, the tree was not equally ubiquitous across its range

REPORT OF SECRETARY OF AGRICULTURE IN RELATION TO FORESTS, RIVERS, AND MOUNTAINS OF THE SOUTHERN APPALACHIAN REGION, 1902

This image of a large decaying chestnut tree, taken around 1902 in the Great Smoky Mountains, East Tennessee, gives scale to the size of some American chestnuts. It was included in a report on the Southern Appalachian Mountains prepared in support of creating national forests in the East.

and did not everywhere grow to great heights and dimensions.[27]

Nevertheless, there is evidence of an American chestnut that was fifteen feet in diameter. Once located on the estate of James Madison in Montpelier, Virginia, it stood near what Madison called "The Temple," a gazebo-like structure situated just north of his primary residence. In 1903, five years before it was inventoried by William duPont, the tree measured "forty-nine feet around its trunk."[28] Had the tree been cored by dendrologists to determine its exact age (it possessed a "double trunk"), it is possible it was already more than two centuries old when Madison inherited the estate from his father in 1801.

Evidence for the tree's advanced age is extrapolated from a dendrological study conducted by forester Thomas Dierauf, who cored numerous trees in the Landmark portion of the Montpelier estate.[29] Dierrauf discovered several trees at the location had been "released" in 1670, including a white oak and an unnamed hickory. The white oak, which measured only 35 inches in diameter, was calculated to be 336 years old in 2009, and possessed an average annual growth rate of ten rings per inch. The hickory was even smaller in diameter (30 inches), with an annual growth rate of eleven rings per inch. However, the largest tree, a red oak, measured 51 inches in diameter, but grew at a rate of four rings per inch, making its birth or release date 1776.[28] Madison's Temple chestnut—if one uses the estimate of four rings per inch of growth—was 360 years old in 1908 and its release or birth date 1548.[30]

Another large American chestnut worthy of mention was located at Porters Flat, in the Great Smoky Mountains National Park near Gatlinburg, Tennessee. When photographer Albert Roth captured the tree in 1933, it measured "twenty-eight and a half feet at four feet from the ground" (nine feet in diameter).[31] The tree was featured in the inaugural issue of *Castanea*, the official publication of the Southern Appalachian Botanical Society, in May 1937. The opening pages of the journal were penned by West Virginia forester Alonzo B. Brooks, who was, appropriately, asked to summarize the importance of the American chestnut to the southern Appalachians. In his appraisal of the Porters Flat tree, Brooks referred to it as a "magnificent

specimen," although he noted it had suffered severe blight damage in 1936.[32]

In 1942, the American Forestry Association brought additional attention to the Porters Flat tree, designating it their first National Champion in the native chestnut category. Stanley A. Cain, a University of Tennessee botanist, nominated the tree after discovering several large living specimens at the same location.[33] When the association introduced the champion tree in the November 1942 edition of *American Forests*, it was given the title "King Chestnut" and labeled "the largest American chestnut in the world."[34] Curiously, the association omitted the fact that its crown was dead or dying, perhaps anticipating criticism from readers had they done so.[35] Predictably, the tree did not survive beyond the end of the decade, as was the case with other large survivors attacked by blight. To see future national champions, one would have to travel to Wisconsin or Michigan or as far away as the state of Washington.

The Porters Flat tree had originally sprouted as a nut seedling, as evidenced by the slightly twisting furrows of its outer bark. Its trunk was also extremely flared, so if it had been measured at ground level, it possibly exceeded thirty-five feet in circumference or more than eleven feet in diameter. It also occupied a geographic location very similar to Poplar Cove, so, like the Streator chestnuts, it would have received significant amounts of rainfall but not continuous direct or full sunlight. Had the tree lived another century or so, the Porters Flat tree might have achieved a base diameter of thirteen feet, although older trees generally grew more slowly than younger ones. However, to reach a diameter of seventeen feet—the same as the Francis Cove specimen—the tree would have needed to live another two centuries or more, which seems unlikely—even if chestnut blight had never been introduced into the United States.

Not knowing the precise age of the Porters Flat tree in 1942, or its average annual growth rate, leaves much to speculation, or entirely excludes the possibility of a seventeen-feet-in-diameter American chestnut. Fortunately, the size and age of the Streator chestnuts are fairly well documented and serve as important arbiters in the size debate. We owe this fact to research done by forest ecologist Craig Lorimer, who studied the Poplar Cove watershed prior to receiving his doctoral degree at Duke University. In 1980, after completing his dissertation, Lorimer published a summary of his research in the journal *Ecology*, in an article entitled "Age Structure and Disturbance History of a Southern Appalachian Virgin Forest."[36]

As Lorimer discovered as early as 1973, the Streator photograph contains not two, but five large chestnut trees. This is corroborated in the printed caption of the *American Lumberman* photograph, which reads: "Characteristic Growth of Chestnut in Poplar Cove. The Big Trees in the Background in the Center of the Illustration are Poplar. The Five Large Ones in the Foreground are Chestnut. This Growth is Unusually Heavy."[37] In 1975, Lorimer was able to measure all five trees, but was unable to count, with precision, their annual growth rings. Moreover, none of the trees still possessed their outer or inner bark, as they had been dead for more than thirty-five years. The missing bark, as well as the additional shrinkage caused by the decaying process, decreased the diameter of the trees by as much as four inches. It was still possible to ascertain their growth rates, however, as several large trees that lay across a nearby trail were sawed in two, exposing their growth rings. One such chestnut, which measured 53 inches in diameter, was 210 years old when it succumbed to the blight and possessed an average annual growth rate of a quarter inch per year.[38]

With respect to the three smallest chestnuts in the Streator photograph, the tree on the right-hand side of the image—which is partially cropped and out of focus—measured 61 inches in diameter at breast height. The tree in the center of the photograph, just behind timber agent Swan, measured 63 inches in diameter. The tree in the far left of the image, beside warden King, measured 65 inches in diameter at breast height.[39] All three trees sprouted as seedlings and may be closer in age than the different dimensions suggest. Soil quality, moisture, and available sunlight are the best predictors of tree growth and those variables can vary greatly, even at the same site.

Although the two trees in the foreground appear much larger than the others, they actually are not. According to camera historian and Hollywood consultant Robert Niederman, Streator used a wide-angle lens when capturing the image. Such lenses, says Niederman, possess a greater depth of field, but make objects nearer the camera appear larger. Niederman believes Streator's camera also possessed a "rear tilt" feature; otherwise, the trees would have bent forward at the top of the image. Niederman is confident that Streator was standing on a small ladder when he took the photograph. By doing so, he was able to get all five trees, and both individuals, inside the single frame. In 2014, when I asked Niederman to offer his opinion about the diameter of the two trees (at the time, Niederman and I were unaware of Lorimer's published article), he responded by saying they were "just shy of six feet."[40]

The "Temple" American chestnut, at Montpelier Station, Virginia, c. 1898.

A. G. "DUTCH" AND MARGARET ANN ROTH PAPERS, BETSEY B. CREEKMORE SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES, UNIVERSITY OF TENNESSEE LIBRARIES, KNOXVILLE. REPRODUCED WITH PERMISSION FROM CHARLIE ROTH

University of Tennessee botanist Harry M. Jennison (left) and an unknown individual measuring the Porter's Flat Chestnut, November 19, 1933.

Niederman's estimate proved uncannily accurate, as Lorimer's measurements—which were taken at breast height and included no living bark—revealed the tree on the left was 68 inches in diameter, and the one on the right, 71 inches.[41] It is very possible that the largest tree was 276 years of age when it died of the blight and had a release date of 1659. Both trees were likely planted by squirrels or jays, the most common movers of chestnuts in the eastern deciduous forest. Although the three smaller trees in the background likely arrived at the location in the same manner, they may have also sprouted from nuts produced by the two largest trees, perhaps as early as 1670.

Despite their large size, the two Streator chestnuts would have needed to survive another four centuries in order to possess dimensions equal those of the Francis Cove giant. While it is unlikely the two trees would have lived that long, there are, in 2021, several tuliptrees in Poplar Cove that are 500 years of age, specimens possessing few signs of disease or decay.[42] Unfortunately, because the two Streator chestnuts were growing close together, they would have joined at the trunk after another century or two, as their bases were already touching in 1909. This would not only have slowed their annual growth, but would have eventually eliminated them for "champion" status, as neither tree could be considered a separate, individual specimen. This is obviously how Madison's Temple chestnut reached such a large girth, and may explain the enormous size of the Francis Cove tree.

In the case of the Temple chestnut, the merger of its two trunks occurred early on in its life, resulting in the appearance of a single individual tree. If the Francis Cove specimen shared this same characteristic, its stump, after being cut down, would have also appeared as a single trunk. Indeed, most eyewitnesses who claimed to have seen the giant chestnut did so long after it was harvested for firewood. Gene Christopher, as already noted, recalled playing in the stump as a young boy. By that time—thirty years after the tree had been fully removed—all that remained

were portions of the stump's outer shell. Evidence for this is the fact that cattle grazed inside it, suggesting considerable and advanced decay.

If the Francis Cove tree did possess a double trunk, it needed to be only four centuries old to reach a girth of seventeen feet (using the growth-rate of the Streator chestnuts as a metric). Obviously, as a single-trunk specimen, it would need to live much longer in order to reach such dimensions; so long, in fact, that after six centuries, the tree would still not be any larger than fifteen feet in diameter. However, if the Francis Cove tree was growing in the most optimal conditions, receiving maximum water and sunlight, it might have reached that size in as little as four hundred years.

Henry David Thoreau provides evidence for such accelerated growth rates among chestnuts, as he was an astute observer of the species and made considerable mention of the trees in his journals.[43] In fact, he was also the first to record the natural history of the species over its entire life cycle, describing the tree as both a tiny seedling and as a mature producer of nuts.[44] In 1852, near Concord, Massachusetts, Thoreau measured a chestnut stump "eight feet five inches" in diameter, a tree, he believed, had been cut "but a short time—a winter, perhaps two winters, before." When determining the tree's age, Thoreau counted "one hundred and two rings" and an additional "thirty-nine rings" at the very heart of the stump (the first forty rings were partially rotted). Taken together, he concluded, the number of rings "equals one hundred and forty-one."[45]

Thoreau noted the tree had "grown very fast till the last fifty years of its existence," but had since grown much slower. When measuring its growth from the center of the stump (not the actual diameter), he noted that the tree had grown nine inches in its last forty-nine years (1810–1850) or "one-seventh of an inch in a year." However, in the previous forty years (1770–1810), it had grown fifteen inches or "three-eighths of an inch a year." This means that for the first fifty-two years of the tree's life (1709–1770), its growth rings expanded, on average, more than a half-inch per year. Thoreau's explanation for the accelerated growth was the tree's solitary existence and lack of competition from other surrounding trees. "Having light and air and room," he pondered, "it grew larger than it would have done if its neighbors had not been cut."[46]

Although the growth rates documented by Thoreau do not confirm the precise dimension of the Francis Cove tree, they do make its reported size more probable. If trees could sustain such accelerated growth rates, they might, after a single century, reach diameters of six feet or more. However, very few chestnuts did so, making the Francis Cove tree, as already noted, a rare exception. In truth, very few American chestnut trees possessed diameters of ten feet or more, and those trees certainly did not represent the norm.

These facts do not make the American chestnut any less of a tree, but they do suggest that those who refer to the tree as "King of the Eastern Forest" or "Redwood of the East" are guilty of misrepresenting its true size. While chestnut trees grew to enormous dimensions in the southern Appalachians, so did other trees, including tuliptrees and several species of oaks. Both hemlock and white pine grew, on average, much taller than the American chestnut. Outside the Appalachians, it is even harder to make the claim that chestnut was the largest species, as trees with greater average girths included white oak, tuliptree, and the American elm, among others.[47]

A BANQUET TABLE FOR WILDLIFE

While size and ubiquity are important criteria for measuring the impact of the American chestnut on forest ecosystems, those things alone did not determine their full value. The tree was also responsible for maintaining moisture levels in the soil, as well as promoting the recycling of essential nutrients, including carbon and nitrogen. In 2007, the U.S. Forest Service biochemist Charles C. Rhoades discovered that chestnut leaves possessed higher amounts of nitrogen, phosphorous, potassium, and magnesium, and that beneath the leaf litter, the underlying soils retained more carbon and nitrogen.[48] Researchers in Connecticut also found higher amounts of nitrogen in chestnut leaves and discovered they decayed more quickly than those of other deciduous trees, including American beech and northern red oak. The authors of the study concluded the faster decomposition meant more available energy for other plants and microbes, which improved overall nutrient recycling.[49] These findings suggest that chestnut leaf-litter promoted a greater abundance of nitrogen-loving organisms in the soil—including beneficial bacterium, fungi, and nematodes—as well as healthier ecosystems.

Chestnut leaves were also beneficial to numerous aquatic insects, including caddisflies, stoneflies, and craneflies. In 1988, two Virginia Commonwealth University biologists discovered that when stonefly larvae were fed decaying chestnut leaves, they had "significantly faster specific growth rates and [larger] adult body mass than individuals reared on oak."[50] They also found adult female stoneflies reared more offspring after eating chestnut leaves.[51] Freshwater fish species benefit from chestnut leaf-litter, as caddisflies and stoneflies are among their most preferred foods.

The American chestnut improved stream quality in yet another way. When large limbs or logs of the tree became submerged in water, they

decayed very slowly—perhaps more so than all other tree species. As a result, more organic matter was captured in the stream, which, overtime, created higher concentrations of nutrients beneficial to both macroinvertebrates and vertebrates.[52] The deeper pools and eddies caused by the woody debris also reduced soil erosion, minimized flooding, and lowered water temperatures, benefitting cold-water fish species like native trout.[53] Remarkably, a study conducted in the southern Appalachians during the mid-1990s, found that woody chestnut debris was still having a measurable positive impact on riparian ecosystems.[54] In another study, also conducted in the Appalachians, researchers found that 24 percent of the woody debris in a single mountain stream was comprised of chestnut—more than sixty years after blight struck the area.[55]

Perhaps the most significant impact of the blight on the wooded landscape was the elimination of chestnut mast (nuts) from the forest floor. Although oak trees eventually lessened some of that shortfall, in areas where the American chestnut represented nearly half of all nut-producing species, overall mast production declined by as much as 34 percent.[56] However, a more recent study found the American chestnut produced higher amounts of mast than even northern red oaks—"the next highest nut-producing trees"—and may have accounted for as much "80% of the hard mast in any given year."[57] Computer simulation models projected a precipitant loss in mammal populations as a result of chestnut blight, with white-tailed deer, gray squirrel, eastern chipmunk, and the white-footed mouse all declining measurably in numbers.[58] There is also considerable evidence the now endangered Allegheny woodrat was heavily dependent on chestnuts, as the mammal cached literally hundreds in their winter larders.[59]

Perhaps the most significant impact of the blight on the wooded landscape was the elimination of chestnuts from the forest floor.

Such findings are corroborated by oral histories, further evidence the trees played an extremely important role in forest health. In Appalachia, the relationship between wildlife and chestnut mast was so well known that it often became the subject of community folklore. Walter Cole, who grew up in the Sugarlands community of Tennessee's Great Smoky Mountains, recalled in the 1960s, "the worst thing that ever happened in this country [was] when the chestnut trees died. Turkeys disappeared and the squirrels were not one-tenth as many as they was before . . . bears got fat on chestnuts, coons got fat on chestnuts . . . most all game ate chestnut."[60] Will Effler, a neighbor of Cole's, remembered shooting a wild turkey near their homes that contained "ninety-two chestnuts, still in the hulls and undigested" in its swollen craw.[61] Earl R. Cady, a forester trained at the University of Michigan, and one of the first naturalists at the Great Smoky Mountains National Park, referred to the annual chestnut crop as "a banquet table for wildlife." Cady believed the annual bounty was so significant it allowed mammals to store "layers of fat in their bodies," as well as "nourish larger and healthier litters of young."[62] Former Cades Cove resident Maynard Ledbetter echoed similar sentiments when he jocularly exclaimed, "Back when they was chestnuts, bear got so fat they couldn't run fast, now the poor bear run like a fox."[63]

Predator species also suffered because of chestnut blight, as they frequently consumed birds and mammals that were dependent on chestnut mast. In 1992, James M. Hill, a former Randolph-Macon College biologist, ascribed the decline of goshawk, Coopers hawk, eastern cougar, and bobcat populations to the loss of the American chestnut.[64] Although Hill's evidence was mostly anecdotal, wildlife managers witnessed a direct relationship between mammal and bird populations and the availability of chestnuts. A report published by the North Carolina Wildlife Resources Commission in 1957, for example, stated "the fruit was a staple in the diets of squirrels, turkeys, bear, and deer. The loss of the chestnut as a wildlife food is immeasurable."[65]

Nongame animals were also dependent on the tree, including several moth species that ate chestnut leaves as their primary food source. In 1978, Paul A. Opler of the U.S. Fish and Wildlife Service estimated seven species of moths became extinct as a result of chestnut blight, including the American chestnut moth, the chestnut ermine moth, the phleophagan chestnut moth, the chestnut clearwing, the chestnut casebearer, the chestnut yponomeutid moth, and the confederate microbagworm.[66] Although two species have since been identified in the wild (chestnut clearwing and confederate microbagworm), the others represent a significant portion of all known invertebrate extinctions since the last Ice Age. According to University of Connecticut etymologist David L. Wagner, chestnut blight "correlates to the greatest invertebrate extinctions on earth . . . there are only sixty-one invertebrate extinctions in the modern era . . . forty-one in North America, and

CRAIG LORIMER

These fallen American chestnuts are the same trees photographed by Sidney Streator in 1909. Taken in Poplar Cove in Joyce Kilmer Memorial Forest in 1975.

of those, five are directly related to loss of chestnut."[67] The functional extinction of the trees affected other insect populations, including native bees and butterflies.[68] Douglas W. Tallamy, an entomologist specializing in the propagation of native plants and wildflowers, estimates the leaves of the American chestnut provided larval food for no less than 125 different *Lepidoptera* species.[69]

Thus, in hindsight, the loss of the American chestnut was a national calamity, although not for the sentimental reasons often associated with the species. Yes, the tree provided holiday treats to millions, and gave the young and old alike an enjoyable autumn pastime. It inspired seasonal desserts, music, and poetry, and directly influenced the development of American material culture. It helped build the country's nineteenth-century transportation and communication networks and was the economic engine that provided employment for tens of thousands of individuals. Yet, at the same time, wildlife also greatly benefitted from the tree; so much so, that numerous animal species suffered because of its disappearance. The trees also provided numerous ecosystem services, including the retention of moisture in forest soils and essential habitat for fungi, birds, and insects. For those reasons and more, the functional extinction of the American chestnut was not only a human loss, but an ecological one as well.

THE ABIDING CHESTNUTS

Regarding the fate of the Streator chestnuts, their death was spared until at least the mid-1930s.[70] Although portions of Poplar Cove were impacted with the blight as early as the late 1920s, the trees did not die all at once, as the watershed contained 6 million board feet of chestnut—"with tight bark and some green leaves"—as late as 1935.[71] In fact, the entire watershed was designated a "virgin forest" in 1936 and consequently offered up for sale.[72] After it was purchased by the U.S. Forest Service, the area was set aside as the Joyce Kilmer Memorial Forest, to honor the author of the well-loved poem "Trees" (*I think I shall never see / A poem as lovely as a tree*), who was killed in action during World War I.[73] The government preserve was created not only to pay homage to Kilmer, but to showcase one of Appalachia's last remaining old-growth forests. Ironically, the trees that once comprised thirty percent of the standing timber in the cove were, by the early 1940s, no longer an integral part of the landscape.[74] At the end of that decade, the only remaining evidence of the American chestnut's former dominance in the watershed were the hundreds of decaying snags and logs that lay scattered across the forest floor.

However, in 2015—more than seventy-five years after they had succumbed to the blight—the Streator

The Streator chestnut in 2015.

chestnuts were still an integral part of the Poplar Cove environs. I found the trees that year after Craig Lorimer directed me to the site using his hand-written field notes.[75] The largest tree in the Streator photograph had fallen to the southwest, but was still relatively intact, as its trunk stretched 110 feet across the forest floor. The smallest end of the decaying log was 11 inches in diameter, which means the crown of the tree extended at least 130 feet into the canopy. Because the base of the trunk had partially collapsed, it was impossible to get an accurate girth measurement, although the log was certainly more than four feet in diameter at breast height. At 56 feet from its base, the intact trunk was exactly 3 feet 2 inches in diameter. The second tree, which had fallen to the northeast, had decayed considerably, especially where it touched the forest floor, although several of its exposed roots were still intact. Both logs were home to mosses, numerous fungi, a variety of herbaceous plants, and dozens of tree seedlings.

The Streator chestnuts continued to have an ecological impact on the surrounding forest long after being killed by the blight, as did others before them regardless of their cause of death. This is an important fact, particularly as we begin evaluating the various restoration efforts that seek to return the species to the eastern deciduous forest. The American chestnut was a tree of considerable utility, but it also was a vital and enduring component of the forest ecosystem. Some trees interacted with their environments for as long as five centuries.

Will the advanced chestnut hybrids, as well as the newly developed genetically modified American chestnuts—which reportedly possess blight resistance—share these same qualities? If they do not, some have argued that the ecological footprint of the American chestnut will, in the coming decades, completely disappear. However, as I argue in *The American Chestnut*, the story of the species is far from over. As long as the trees are "smoldering at the roots and sending up new shoots," as Robert Frost once put it, there is still some hope for the species.[76] In fact, the elevated number of living survivors suggests the term "functionally extinct" may no longer even apply to the tree, since millions continue to blossom and, in rare instances, produce fertile, viable nuts.[77]

Whatever the ultimate outcome of the various breeding programs, it is possible that the most well-intentioned humans will be unable to restore the American chestnut to its former place in the woodland

ecosystem. When and if American (or American-like) chestnut trees are established in the eastern deciduous forest, they will still need to contend with old adversaries like *Phytophthora* (root rot), periodical cicadas, and chestnut timber worms, as well as newer diseases and pests, including the Asian chestnut gall wasp and the Asian ambrosia beetle.[78] A changing climate and suburban sprawl will also take its toll on the species. All of these obstacles will obviously reduce the number of healthy living trees, making the successful reintroduction of the tree less likely.

Attempts to restore the American chestnut will also need to illuminate the tree's evolutionary history. Evolutionary history is not evolutionary biology, but a subfield of environmental history that sees nature-human relationships as ongoing, reciprocal processes. Proponents of evolutionary history, such as Edmund Russell of Carnegie Mellon University, argue that when plants and animals evolve with humans, they are altered by that relationship, including their genomic structure. According to Russell, evolutionary history allows one to marry biology to history in unique and important ways, offering a perspective not found in either discipline alone. A good example of the phenomenon would be any domesticated plant, such as New World cotton, which possesses longer fibers as the result of long-term human selection and breeding.[79]

Although the American chestnut evolved for millions of years without the presence of humans, the trees have, over the last several millennia, been directly influenced by anthropogenic forces. Twenty-first century breeding efforts have also altered the DNA structure of the American chestnut, although the jury is still out regarding what this ultimately means for the future of the species. Obviously, the best option moving forward would be to have an unadulterated *Castanea dentata* thriving again in the eastern deciduous forest, as it was that tree, and not others, that shaped the natural and human communities of North America.

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ENDNOTES

1. Personal email communication, July 14, 2021.
2. [Wesley T. Christine], "Whiting and Timber Mill Interests," *American Lumberman* 1808 (January 15, 1910): 74. Information regarding the identity of Swan and King is from a caption attached to the image in the Forest History Society archives (USFS negative number 320000). In referencing the Streator photographs in the article, the editor of the *American Lumberman* claimed they "were the most remarkable series of timber pictures ever taken" (32).
3. "Whiting and Timber Mill Interests," 74.
4. Owen L. McConnell, *Unicoi Unity: A Natural History of the Unicoi and Snowbird Mountains and their Plants, Fungi, and Animals* (Bloomington, IN: AuthorHouse, 2014), 92.
5. Christine, "Whiting and Timber Mill Interests," 98.
6. Henry B. Steer, *Lumber Production in the United States: 1799-1946*, USDA Miscellaneous Publication no. 699 (Washington, DC: GPO, 1948), 137-138, table 57.
7. Christine, "Whiting and Timber Mill Interests," 68. In 1910, Graham County possessed the largest concentration of mature chestnut trees in the United States: twenty-five thousand board feet of timber per acre. Horace B. Ayers and William W. Ashe, "Land Classification Map of Part of the Southern Appalachian Region, 1904," map insert in Horace B. Ayers and William W. Ashe, *The Southern Appalachian Forests*, U.S. Geological Survey Professional Paper No. 37 (Washington, DC: GPO, 1905), n.p.
8. Christine, "Whiting and Timber Mill Interests," 66.
9. William W. Ashe, *Chestnut in Tennessee*, State of Tennessee–State Geological Survey, Tennessee Geological Survey Series 10-B (Nashville, TN: Baird-Ward, 1912), 16. Ashe wrote that "chestnut suffers severely from fire because of its thin bark . . . the sprout stands are left after lumbering, they [are] frequently burned, and the trees are either hollow or defective at the base,"
10. "Twas All Moonshiner; Smoking Tree Mystery in North Carolina a Case for Revenue Only," *New York Times*, July 22, 1894, 8.
11. "Twas All Moonshiner." In an account printed in the *Clinch Valley News*, the distillery was not inside the chestnut but in a "tunnel-like cavern" thirty feet from the tree. In that version, a tunnel had been dug into "the eight feet in diameter" chestnut, which allowed the "smoke to enter the hollow beneath the ground," *Clinch Valley News* (Tazewell, VA), April 6, 1894, 1.
12. "Twas All Moonshiner."
13. "Twas All Moonshiner." See also M. L. White, *A History of the Life of Amos Owens, The Noted Blockader of Cherry Mountain, N.C.* (Shelby, NC: Cleveland Star Printers, 1901); Anita Price Davis, *Legendary Locals of Rutherford County* (Charleston, SC: Arcadia Publishing, 2013), 22–24.
14. Carson Brewer, *Just Over the Next Ridge: A Traveler's Guide to Little-known and Out-of-the-way Places in Southern Appalachia* (Knoxville, TN: Knoxville News-Sentinel, 1992), 141; Ted Olson, *Blue Ridge Folklife* (Oxford: University Press of Mississippi, 1998), 59–60; Christopher Camuto, *Another Country: Journeying toward the Cherokee Mountains* (Athens: University of Georgia Press, 2000), 293.
15. Nelms is quoted in Tim Homan, *Hiking Trails of the Joyce Kilmer-Slickrock and Citico Creek Wildernesses* (Atlanta, GA: Peachtree, 2008), 118.
16. Homan, *Hiking Trails*, 118.
17. Grossman quoted in Margaret Lynn Brown, *The Wild East: A Biography of the Great Smoky Mountains* (Gainesville: University of Florida Press, 2001), 21.
18. David Wheeler, "Where There Be Mountains, There Be Chestnuts," *Katuah Journal* 21, no. 3 (Fall 1988): 28.
19. Joseph S. Illick, *Tree Habits: How to Know the Hardwoods* (Washington, DC: American Tree Association, 1924), 101; Samuel B. Detwiler, "The American Chestnut Tree," *American Forestry* 21, no. 262 (October 1915): 957; William Carey Grimm, *Familiar Trees of America* (New York: Harper & Row, 1967), 109.
20. Colby B. Rucker, "Great Eastern Trees, Past and Present," Native Trees Society online report, accessed November 17,

2018, http://www.nativetreesociety.org/bigtree/great_eastern_trees.htm

21. Randy Cyr, "Francis Cove's Huge American Chestnuts," Native Trees Society online report, accessed November 18, 2018, http://www.nativetreesociety.org/fieldtrips/north_carolina/francis_cove.htm.
22. Cyr, "Francis Cove's Huge American Chestnuts."
23. Henry S. Graves, *The Use of Wood for Fuel, USDA Bulletin No. 753* (Washington, D.C.: GPO, 1919), 38; Carl A. Schenck, *Logging and Lumbering or Forest Utilization: A Textbook for Forest Schools* (Darmstadt, Germany: L. C. Wittich, 1912), 109.
24. Graves, *The Use of Wood*, 26. See also Philip L. Buttrick, "Commercial Uses of Chestnut," *American Forestry* 21, no. 2 (October 1915): 964; Bethany Baxter, "An Oral History of the American Chestnut in Appalachia" (master's thesis, University of Tennessee at Chattanooga, 2009), 36–37.
25. Steven Cox, ed., *Once I Too Had Wings: The Journals of Emma Belle Miles* (Athens: University of Ohio Press, 2014), 28. Miles wrote of the typical East Tennessee distillery: "The still proper is a copper vessel almost round, with a capacity of from 100 to 300 gallons . . . chestnut wood, which makes next to no smoke, is preferred for stoking," 28.
26. Rachel Collins et al., "American Chestnut: Re-examining the Historical Attributes of a Lost Tree," *Journal of Forestry* 116, no. 1 (January 2018): 68–75.
27. Donald Edward Davis, *The American Chestnut: An Environmental History* (Athens: University of Georgia Press, 2021), xii–xiii, 38.
28. Milton Ailes, "Our Farmer Presidents," *Frank Leslie's Popular Monthly* 56, no. 2 (June 1903): 146; William duPont, "Topography of the Mountain Grounds and Vicinity at Montpelier," Orange County, Virginia, 1908," map in Montpelier Foundation Archives, Montpelier Station, VA.
29. Daniel Druckenbrod and Herman Shugart, "Forest History of James Madison's Montpelier Plantation," *Journal of the Torrey Botanical Society* 131, no. 3 (2004): 209.
30. Thomas Dierauf, *History of the Montpelier Landmark Forest: Human Disturbance and Forest Recovery*, *Montpelier Foundation Report* (Montpelier Station, VA: Montpelier Foundation, 2010), 9-10.
31. Albert Roth Photograph Collection, University of Tennessee Libraries, Knoxville, Tennessee, Special Collections, Great Smoky Mountains Regional Project, Image No. roth0149.
32. Alonzo Brooks, "*Castanea dentata*," *Castanea: The Journal of the Southern Appalachian Botanical Club* 2, no. 5 (May 1937): 61–67. According to an accompanying caption, the tree measured "eight feet, eight inches in diameter at 4.5 feet above the ground," (65). The Southern Appalachian Botanical Club changed its name to the Southern Appalachian Botanical Society in 1992.
33. Ovid Butler, "Big Trees," *American Forests* 48, no. 11 (November 1942): 484.
34. Butler, "Big Trees," 484.
35. Brooks, "*Castanea dentata*," 65.
36. Craig G. Lorimer, "Age Structure and Disturbance History of a Southern Appalachian Virginia Forest," *Ecology* 61, no. 5 (October 1980): 1169–84.
37. Christine, "Whiting and Timber Mill Interests," 74.
38. Lorimer, "Age Structure and Disturbance History," 1172, 1174, fig. 3.
39. Lorimer, "Age Structure and Disturbance History," 1174, fig. 3.
40. Robert Niederman, personal communication, November 5, 2014.
41. Lorimer, "Age Structure and Disturbance History," 1174, fig. 3. Measurements in fig. 3 were converted from centimeters to inches. In Lorimer's field notes, the diameter of the largest tree was recorded as being exactly six feet. Personal communication, November 16, 2015.
42. Lorimer, "Age Structure and Disturbance History," 1174.
43. Henry David Thoreau, *Faith in a Seed: The Dispersion of Seeds and Other Late Natural History Writings*, ed. Bradley P. Dean (Washington, DC: Island Press, 1993), 114, 126–31, 143, 147, 260; Henry David Thoreau, *Wild Fruits: Thoreau's Rediscovered Last Manuscript*, ed. Bradley P. Dean (New York: W. W. Norton, 2000), 209–16, 256.
44. David R. Foster, *Thoreau's Country: Journey Through a Transformed Landscape* (Cambridge, Mass.: Harvard University Press, 2001), 176, 177, 182, 183, 247.
45. Henry David Thoreau, *Writings of Henry David Thoreau*, vol. 20, *Journal XIV: August 1, 1860–November 3, 1861*, 184–85.
46. Thoreau, *Writings*, 184–85.
47. Colby B. Rucker, "Great Eastern Trees, Past and Present," Native Trees Society online report, accessed November 17, 2018, http://www.nativetreesociety.org/bigtree/great_eastern_trees.htm.
48. Charles C. Rhoades, "The Influence of American Chestnut (*Castanea dentata*) on Nitrogen Availability, Organic Matter and Chemistry of Silty and Sandy Loam Soils," *Pedobiological* 50, no. 6 (2007): 557.
49. Stephen M. Wagener, Sandra E. Slemmer, and Breamond Ostrander, "Decomposition of American Chestnut Leaves," *Journal of the American Chestnut Foundation* 21, no. 2 (Fall 2007): 44.
50. Leonard A. Smock and Christina M. MacGregor, "Impact of the American Chestnut Blight on Aquatic Shredding Macroinvertebrates," *Journal of the North American Benthological Society* 7, no. 3 (September 1988): 212.
51. Smock and MacGregor, "Impact of the American Chestnut Blight," 212.
52. Dana R. Warren, et al., "Forest Stream Interactions in Eastern Old-Growth Forests," in *Ecology and Recovery of Eastern Old-Growth Forests*, ed. Andrew M. Barton and William S. Keeton (Washington, DC: Island Press, 2018), 166–67.
53. Warren, "Forest Stream Interactions," 169.
54. Craig W. Hedman, David H. Van Lear, and Wayne T. Swank, "In-Stream Large Woody Debris Loading and Riparian Forest Seral Stage Associations in the Southern Appalachian Mountains," *Canadian Journal of Forest Research* 26, no. 7 (1996): 1218–27.
55. J. Bruce Wallace, et al., "Large Woody Debris in a Headwater Stream: Long-term Legacies of Forest Disturbance," *International Review of Hydrobiology* 86, nos. 4-5 (July 2001): 501–13.
56. Seth Diamond, et al., "Hard Mast Production Before and After the Chestnut Blight," *Southern Journal of Applied Forestry* 24, no. 4 (November 1, 2000): 198–99, Table 3.
57. Katie L. Burke, "Chestnut and Wildlife," *Journal of the American Chestnut Foundation* 27, no. 2 (March/April 2013): 9. See also Keith E. Gilland, Carolyn Keiffer, and Brian C. McCarthy, "Seed Production of Mature Forest-Grown American Chestnut (*Castanea dentata* (Marsh.) Borkh.)," *Journal of the Torrey Botanical Society* 139, no. 3 (July–September 2012): 283–89.
58. Harmony Dalgleish and Robert K. Swihart, "American Chestnut Past and Future: Implications of Restoration for Resource Pulses and Consumer Populations of Eastern U.S. Forests," *Restoration Ecology* 20, no. 4 (July 2012): 490–97.
59. C. L. Newcombe, "An Ecological Study of the Allegheny Cliff Rat (*Neotoma Pennsylvanica Stone*)," *Journal of Mammalogy* 1, no. 2 (May 1930): 204–11; Kathleen LoGiudice, "Multiple Causes of the Allegheny Woodrat Decline: A Historical–Ecological Examination," in *The Allegheny Woodrat: Ecology, Conservation, and Management of a Declining Species*, ed. John Peles and Janet Wright (New York: Springer Science and Business Media, 2008), 23–41.
60. Walter Cole, interview by Charles Grossman, 1965. Oral History collection, Great Smoky Mountains National Park Archives, Sugarlands Visitor Center, Gatlinburg, TN, n.p.
61. Effler quoted in Vic Weals, *Last Train to Elkmont* (Knoxville, TN: Olden Press, 1991), 128. The largest trees in the Great Smoky Mountains, recalled Weal, "would drop ten or more bushels of chestnuts," 129.
62. Cady quoted in Weals, *Last Train to Elkmont*, 129.
63. Maynard Ledbetter, interview by Bill Landry, 1989. Transcript in Oral History Collection, Great Smoky Mountains National Park Archives, Sugarlands Visitor Center, Gatlinburg, TN, n.p.
64. James M. Hill, "Wildlife Value of *Castanea dentata* Past and Present, the Historical Decline of Chestnut, and Its

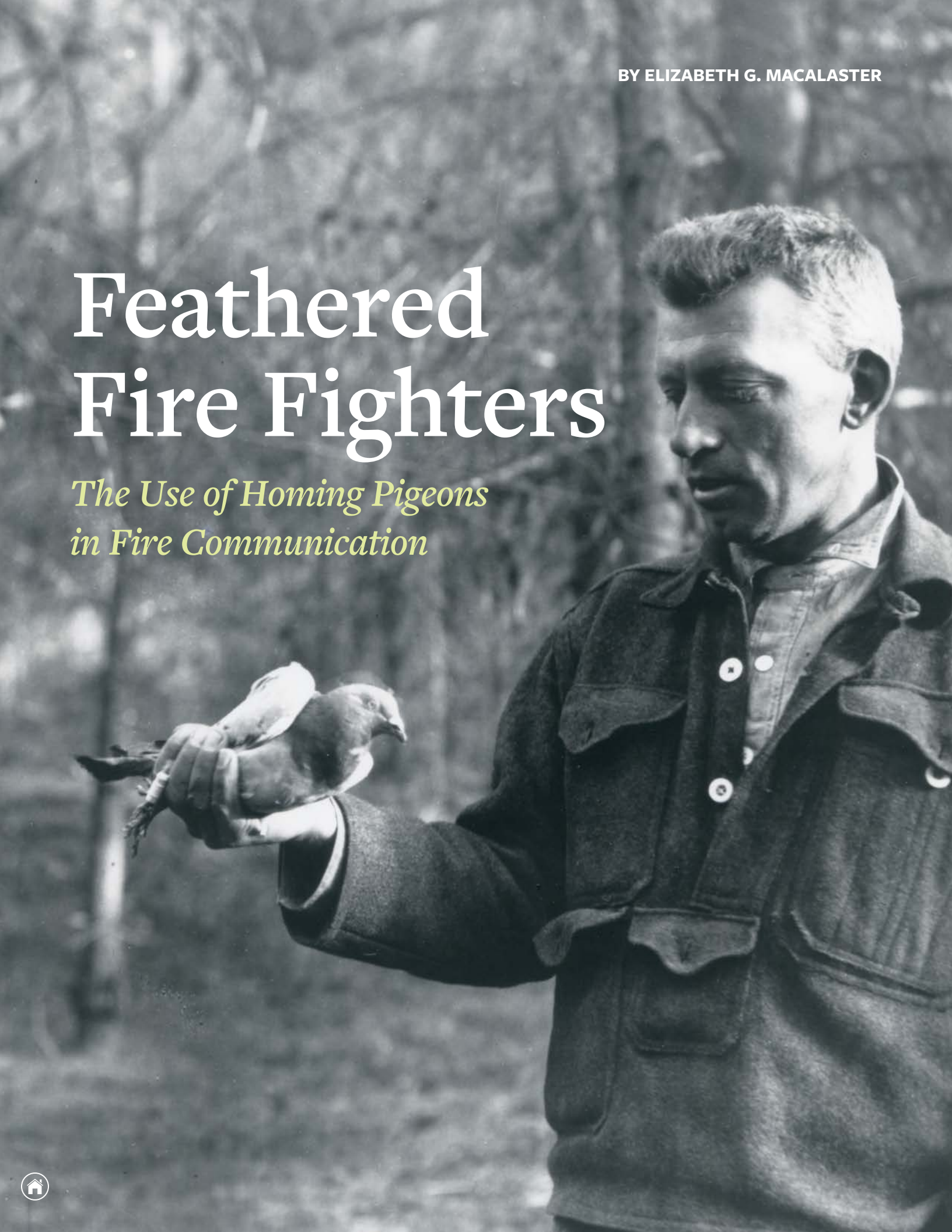
Future Use in Restoration of Natural Areas," in *Proceedings of the International Chestnut Conference, July 10–14, 1992*, ed. Mark Double and William McDonald (Morgantown: West Virginia University College of Agriculture and Forestry, 1992), 190.

65. Jim Lee, "Chestnut: Tree with a Past," *North Carolina Wildlife* 21, no. 11 (November 1957): 10. See also Wilma Dykeman, "Our Trees Are a Wonderful Gift," *Knoxville News-Sentinel*, January 3, 1963, 18.
66. Paul A. Opler, "Insects of the American chestnut: Possible Importance and Conservation Concern," in *Proceedings of the American Chestnut Symposium, January 4–5, 1978*, ed. William McDonald, et.al. (Morgantown: West Virginia University, 1978), 84-85.
67. Wagner quotation from the Connecticut Chapter of the American chestnut homepage, accessed June 6, 2019, https://www.acf.org/ct/news-and-updates/chestnut-and-invertebrate-extinctions/. See also David L. Wagner and Roy G. Van Driesche, "Threats Posed to Rare or Endangered Insects by Invasions of Nonnative Species," *Annual Review of Entomology* 55, no. 1 (January 2010): 547–68.
68. Opler, "Insects of the American chestnut," 85.
69. Douglas W. Tallamy, *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens* (Portland, OR: Timber Press, 2007), 126.
70. According to Craig Lorimer, chestnut mortality in Poplar Cove occurred between 1928 and 1938. Lorimer, "Age Structure and Disturbance History," 1179, 1180.
71. U.S. Department of Agriculture, U.S. Forest Service, "Acquisition Examination Report," Gennett Lumber Company, Tracts 309f/g, August 10, 1935, n.p.
72. Dozens of newspapers announced the dedication of the Joyce Kilmer Memorial Forest in 1936. The *Hattiesburg* (Mississippi) *American* claimed it contained "one of the finest stands of virgin timber to be found in any of the 154 national forests throughout the United States," *Hattiesburg American*, July 2, 1936, 9.
73. Joyce Kilmer, *Trees and Other Poems* (New York: Doubleday Doran and Co., 1914), 18.
74. The 30 percent figure is from a 1909 commercial timber cruise. When Craig Lorimer surveyed Poplar Cove in the mid-1970s, he found chestnut comprised 25 percent of the standing timber. In the 1940s, forest ecologist Lucy Braun found one section of the watershed, an area she designated "North Slope chestnut community," contained 82 percent chestnut. E. Lucy Braun, *Deciduous Forests of the Eastern United States* (Philadelphia: The Blakiston Company, 1950), 219.
75. I was accompanied on the trip by Owen McConnell, author of *Unicoi Unity: A Natural History of the Unicoi and Snowbird Mountains*, and Hugh Irwin, a Wilderness Society conservation planner.
76. Robert Frost, "Evil Tendencies Cancel," *The Poetry of Robert Frost* (New York: Henry Holt, 1979), 308.
77. John Scrivani, "Forest Inventory and Analysis," *Journal of the American Chestnut Foundation* 25, no. 3 (May/June 2011): 18.
78. Helen Thompson, "Plant Science: The Chestnut Resurrection," *Nature* 490, no. 7418 (October 3, 2012): 22–23.
79. Edmund Russell, *Evolutionary History: Uniting History and Biology to Understand Life on Earth* (New York: Cambridge University Press, 2011), xv-xviii, 1–5, 116.

BY ELIZABETH G. MACALASTER

Feathered Fire Fighters

The Use of Homing Pigeons in Fire Communication



Swift, reliable communication is critical to fighting wildfires. For a time, the U.S. Forest Service used homing pigeons to carry dispatches, to great effect.

The U.S. Forest Service quickly made the detection and suppression of wildfires in national forests a priority with its establishment in 1905. Among the challenges the agency faced was communicating the location of fires. Beginning in 1910, lookouts were stationed in towers built on mountain tops or in trees to watch for fires, but how could they convey information to firefighters? Telephone lines were expensive and time consuming to construct, and often unreliable: falling trees broke the lines, snow slides wiped them out, and they could melt in intense heat. Heliographs were equally problematic, requiring sunlight to reflect off the fragile mirrors as well as operators who knew Morse code—and were watching for the signal.

As early as 1909, American foresters had advocated for the use of airplanes for detecting and reporting forest fires. The first aerial fire patrol flight was made in 1915 on behalf of the Wisconsin Conservation Commission. But not until Colonel H. H. "Hap" Arnold of the Army Air Service took control of aerial patrols in 1919 did cooperation between the Army Air Service and U.S. Forest Service begin.

During the First World War, Arnold had been in charge of the Information Service in the Aviation Division of the Signal Corps. In early 1919, after being assigned as supervisor of the Air Service at Coronado, California, by luck he had a conversation with the forester in charge of the Forest Service's California district about the benefits of aerial fire detection. Eager to give his pilots more experience, Arnold wasted no time striking an agreement with the civilian agency. In June the Air Service began patrols over national forests in southern and central California.[1] The experiment worked. By year's end, Arnold had expanded coverage into northern California and Oregon.

Although airborne observers could spot smoke and fires, reporting the locations remained a problem. The biplane models JN-4H and JN-6H had radio-telegraph, but this technology didn't always work, especially over mountainous terrain. The JN-4Ds had no radios at all and could communicate with crews on the ground only by dropping messages or landing to give a report. A new kind of messenger service was needed.

TAKING FLIGHT

Help arrived in the form of feathered couriers. Homing pigeons had provided a highly reliable means of communication during the war, and at its conclusion, both the Army and the Navy set up large breeding and training centers. The birds, together with those already at military lofts around the country, became a source of ready-to-work couriers. From 1919 through the early 1940s, the Army Air Service, U.S. Forest Service, and then the Civilian Conservation Corps deployed homing pigeons to assist in fire communication.

When a fire was spotted, the birds literally flew into action. The plane's observer would write a fire's location on special message paper, roll up the message, insert it into a capsule attached to the pigeon's leg, and release the bird to return to its loft at an air base. Flying at an average speed of 40 mph, the pigeon could place the location of the fire in the hands of a ranger within just hours.

The instinct to return home to its nest and mate explains the homing pigeon's utility, and nothing but an accident or death (usually in the talons of a raptor) would stop it. The bird's navigational skills, based on an internal compass and the position of the sun, are augmented by superb hearing, smell, and sight—environmental cues that make a kind of map. Wings that beat up to 600 times per minute, for as long as 16 hours without stopping, speed the bird home. Smoke was not a problem. Homing pigeons have three eyelids, and when needed, as when flying through dust or smoke, they can close this third, semitransparent lid to protect their eyes while flying. It's no wonder homing pigeons were such successful couriers in the hell of trench warfare.

Of the 570 fires reported by flights originating in Oregon during the 1919 season, 128 were detected from the air. Everyone involved considered the program a success, and Arnold made big plans for the coming fire season. For 1920 he wanted to expand Air Service patrols to 12 bases covering forests in California, Oregon, Washington, Montana, Idaho, and Wyoming, with five squadrons consisting of 90 aircraft and 180 personnel to serve as pilots and observers. Each aircraft would be allotted two pigeons for communications with ground crews. The planners expected to need five pigeoneers to oversee the 930 pigeons distributed among the squadrons.[2] The addition of experienced pigeoneers would be crucial to the program's success, as only well-trained pigeons can be relied on to reach home no matter the conditions.

Along with expanding the aerial patrols for the 1920 season, Arnold created a training program at March Field in California to begin in February 1920. Both the Air Service and the Forest Service would provide

A U.S. Forest Service ranger is ready to turn a carrier pigeon loose on the Umpqua National Forest, 1920. The message is in a cartridge on the bird's leg.

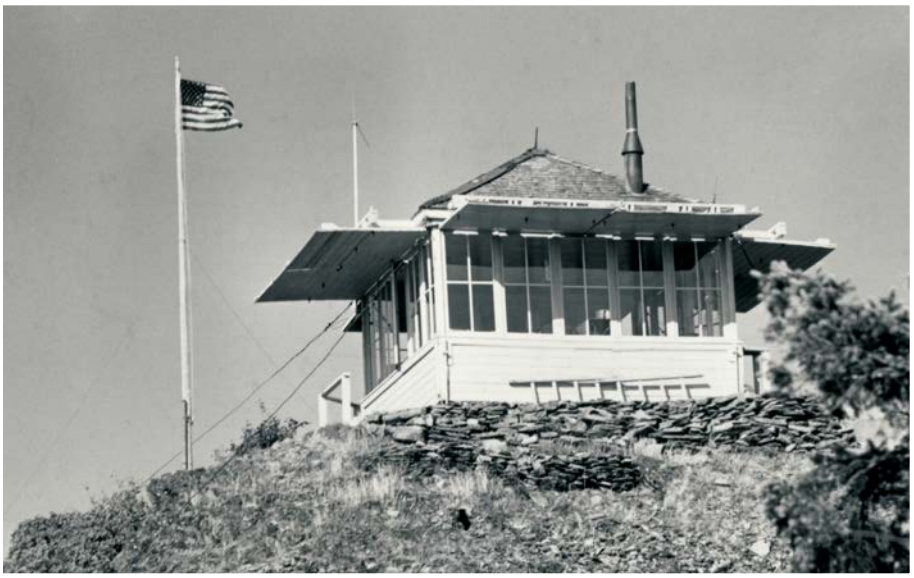
FOREST HISTORY SOCIETY PHOTO COLLECTION, FHS2733

instruction, which included the care, training, and use of homing pigeons. But by January 1920, the Air Service had taken no action; its part in firefighting declined after that year. After the 1921 season, despite the outstanding record and popularity of the program among state and federal foresters, forest associations, and lumbermen, Congress was no longer willing to provide enough funding for the military personnel needed. By 1925, aerial patrols were turned over to civilian contractors.

FLYING SOLO

That change, however, did not end the role of homing pigeons in fire communications. The Forest Service would simply have to fly solo. In the early 1920s, the Forest Service continued using both Army and Navy pigeon couriers and was particularly successful in Oregon. In the Willamette National Forest, pigeon lofts were built at the West Boundary and McKenzie Bridge ranger stations. Fast speeds with pigeon couriers were reported; one bird flew more than six miles from the Castle Rock lookout to the McKenzie Bridge ranger station in just four minutes.[3]

Other pigeons operated in the Deschutes National Forest. In 1919, pigeons were brought to Bend, Oregon, from Portland and a flock established and trained. The city of Bend assigned a pigeon to each of its wildfire crews. When seven weeks old, the fledglings transported messages to their Bend loft from nearby parts of the national forest. At three months, they carried valuable information a distance of more than fifty miles, and at four months they had no difficulty covering a hundred miles. During that year's fire season, eight birds carried six hundred messages, averaging forty-five miles per hour. On several occasions, they were released at points on the summits of the Cascades in heavy smoke.[4] They got their messages through.



COURTESY OF THE LANE COUNTY HISTORY MUSEUM, EUGENE, OR

Castle Rock Lookout Tower was the starting point for one speed test in 1920. One bird flew more than six miles from the lookout to the McKenzie Bridge ranger station in just four minutes.

Test runs with homing pigeons in Idaho yielded equally impressive results. "In one case," wrote Gary Craven Gray in *Radio for the Fireline*, "a bird was carried by pack horse into a remote area, kept overnight, and released the next day. Within 30 minutes, the pigeon was back at its cote after covering 18 miles of rugged terrain. In another instance, a ranger took two birds to the scene of a fire and released one to call for help. When the crew successfully brought the blaze under control, the other was sent to cancel the call."[5]

The Minnesota State Forest Service also used the swift couriers. In the early 1900s, in the northeast part of Minnesota, rivers functioned as roads, and the most efficient way to travel to a wildfire was in a canoe. Firefighters paddled to fires through lakes, over portages, down rivers and channels, and over rapids. Communication in such terrain, however, was slow. In the 1920s, a ranger at Tower, a small town near the Canadian border, responded to fire alerts by loading crates of homing pigeons into the canoes, along with supplies and equipment. Some of the pigeons had been trained by World War I pigeoneer Stuart W. Cohen, whose birds could fly up to fourteen hundred miles. Birds returned to the Tower ranger station carrying urgent requests for supplies and reinforcements.[6]

Although pigeons were successful firefighting partners in the Northwest on a small scale, many in the Forest Service thought they were not worth the upkeep and training to keep them in firefighting shape. In most national forests in the northwestern states, despite their good service record, the feathered firefighters were phased out by 1922, along with their fixed-wing counterparts.

REVIVAL AND RESPECT

A decade later, some in the Civilian Conservation Corps revived the practice of using homing pigeons in firefighting. Company 2329-C, an African American CCC company located on the Cleveland National Forest in California, gained prominence in fire suppression by employing homing pigeons to transmit messages. Company members constructed lofts, raised and trained pigeons, and used them to ferry

FOREST HISTORY SOCIETY PHOTO COLLECTION, FHS2735

A ranger stands in the doorway of a pigeon cote in Bend, Oregon, in 1920. Pigeons were successfully used on a small scale in the Northwest from 1919 through 1921 but were deemed too costly to maintain.

time-sensitive reports from the fire lines back to their base camp when other means of communication were impractical.[7] No doubt the birds helped Company 2329-C maintain a highly regarded fire suppression record.

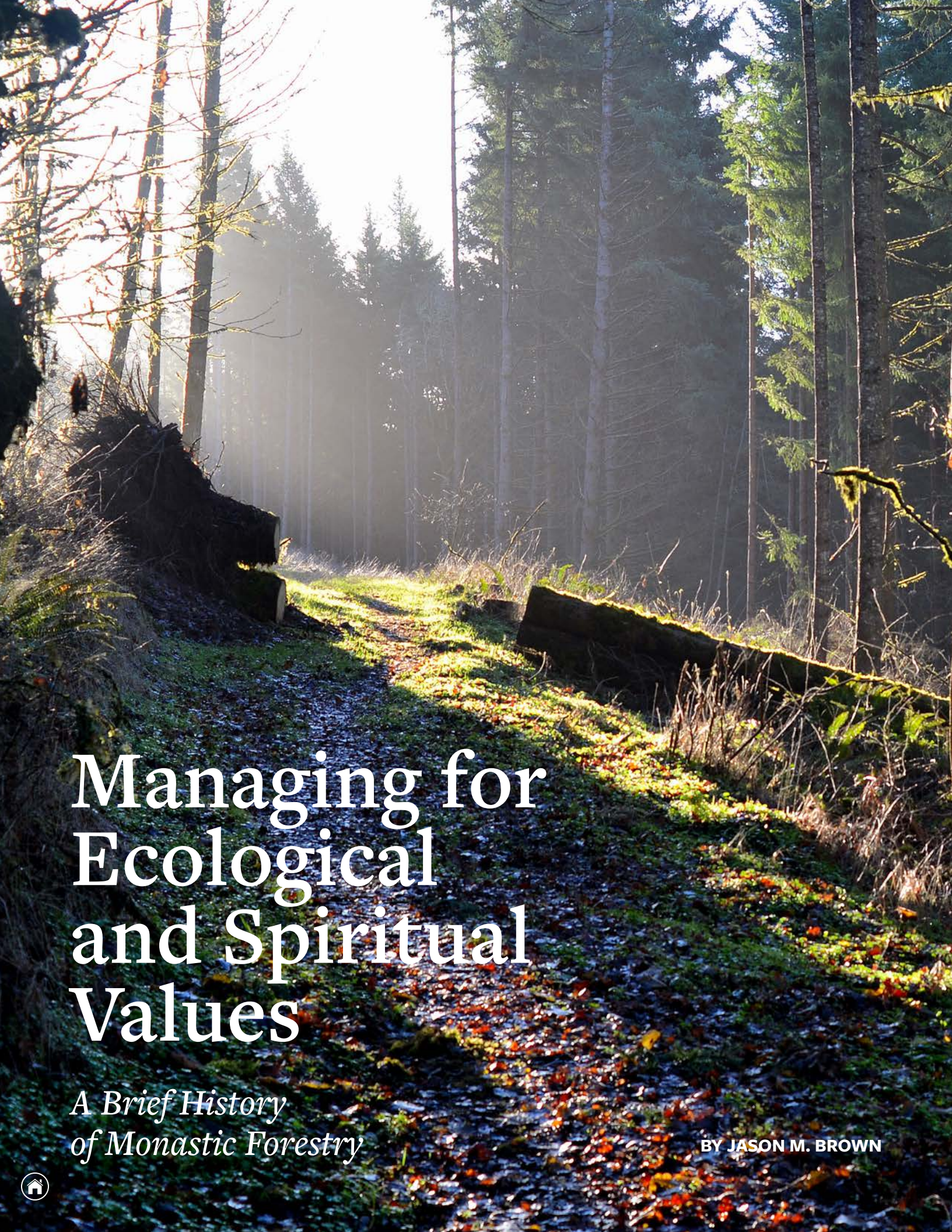
Another CCC company, the 1139th, in West Townsend, Massachusetts, also employed pigeons. Originally raised in the camp as a hobby, the homing pigeons of the 1139th were called to serve when a fire broke out near Groton in 1941. With no communications between the fire line and the CCC camp, several birds were sent with each fire crew dispatched from the camp. Though untested under actual fire conditions, the pigeons unfailingly returned to their camp loft with information on the progress of the fire, the means to control it, and the need for additional men and tools. According to Maj. Gen. James A. Woodruff, commander of the 1st Corps area, the pigeons' service resulted in the savings of thousands of dollars. Mercury, an outstanding member of the 1139th's pigeon loft, was later awarded the title "Captain" at a ceremony at the Boston Army Base by Lt. Col. George L. Smith, Army director of the CCC in New England.[8] After the ceremony, Captain Mercury flew back to West Townsend with a message of congratulations to the camp members who had raised and trained him.

Today, only about three hundred manned lookout towers remain in the United States, with spotters using a host of advanced communication technologies to locate and report forest fires. But when the U.S. Forest Service restored and reactivated the Ute Mountain Fire Lookout Tower in eastern Utah in 2015, it decided to also honor the history of feathered firefighters in a special event. After completion of the restoration, the lookout staff recreated the pigeon messenger service, though it worked in reverse. Pigeons from the Ute Lookout loft were dropped off at the Red Canyon visitors center about ten miles away, where sightseers attached messages to a bird's leg and released the bird to find its lookout loft at the tower. Visitors then proceeded to the tower and retrieved their messages. The pigeon messenger system, together with a tour of the historic site, gave onlookers a chance to experience how rangers spotted and reported forest fires in the early part of the twentieth century, when homing pigeons flew crucial messages from pilots, lookouts, and frontline firefighters.[9] The event in Utah was a reminder of the important contribution these extraordinary birds made in America's firefighting history.

Elizabeth G. Macalaster is the author of War Pigeons: Winged Couriers in the U.S. Military, 1878–1957 *(McFarland and Company, 2020).*

NOTES

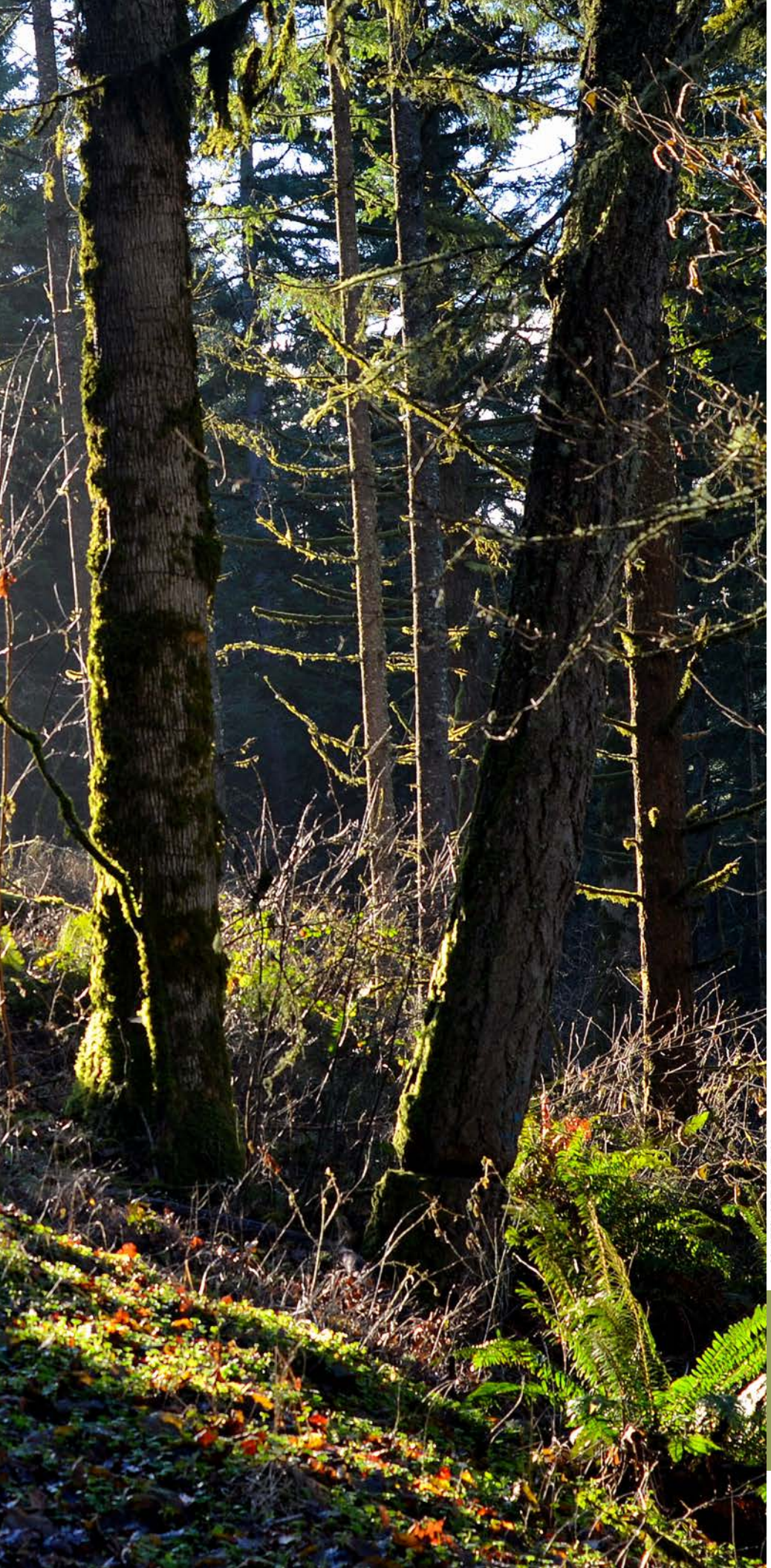
1. James G. Lewis, "June 29, 1915: First Aerial Fire Patrol Took Flight," *Peeling Back the Bark* (blog), June 29, 2011, https://foresthistory.org/june-29-1915-first-aerial-fire-patrol-took-flight; and Mauer Mauer, *Aviation in the U.S. Army, 1919–1939* (Washington, DC: U.S. Air Force Historical Research Center, Office of Air Force History, 1987), 131.
2. Richard Elsom, "Growing Pains: Army Air Service Patrols of National Forests, 1919–1920," *Text Message Blog*, August 29, 2020, https://text-message.blogs.archives.gov/2020/08/25/growing-pains-army-air-service-patrols-of-national-forests-1919-1920/.
3. *Eugene Morning Register*, August 24, 1920, quoted in "Castle Rock (Fed): Willamette National Forest, 16S-5E-28," https://oregonlookouts.weebly.com/castle-rock-fed.html, accessed March 2, 2021.
4. "Homing Pigeons to Be Used for Forest Fires," *Medford* (Oregon) *Mail-Tribune*, March 8, 1919, https://www.mailtribune.com/mail-tribune/2019/03/08/mail-tribune-100-march-8-1919/; "Pigeons in Fire Protection," *Timberman*, November 1919, 125.
5. Gary Craven Gray, *Radio for the Fireline: A History of Electronic Communication in the Forest Service, 1905–1975* (Washington, DC: Department of Agriculture, U.S. Forest Service, 1982), 11.
6. "Legion Man Trains Pigeons," *Dannebrog News*, January 18, 1923. "Legion Man" refers to Cohen, who was a St. Paul Legionnaire.
7. Olen Cole Jr., "African-American Youth in the Program of the Civilian Conservation Corps in California, 1933–42: An Ambivalent Legacy," *Forest and Conservation History* 35 (July 1991): 124.
8. "[sic] Praises C.C.C. Forest Fire Fighters for Use of Pigeons," *Boston Globe*, May 7, 1941.
9. Michael McFall, "Utah Fire Lookout Tower Keeps People Safe, and History Alive," *Salt Lake Tribune*, April 25, 2016, https://archive.sltrib.com/article.php?id=3797035&itype=CMSID.



Managing for Ecological and Spiritual Values

A Brief History of Monastic Forestry

BY JASON M. BROWN



COURTESY OF THE AUTHOR

A path on the Our Lady of Guadalupe Abbey property in Oregon takes visitors to the namesake's shrine and, on the other side, a recent patch cut of Douglas fir in the uneven-aged forest.

Catholic monks typically stay in one place for their careers. Consequently, over the centuries, monks have embraced sustainable forestry practices to protect the land around their monasteries.

Before graduating from forestry school, I joined a European forestry field trip. One of the more memorable stops for me was the Pleterje Charterhouse, a monastery in Slovenia of the Carthusian Order, among the most austere and contemplative in the Roman Catholic tradition.

The monastery is surrounded by a buffer of farmland and forest that isolates the monks from the surrounding area, contributes to the monastery's industry of fine liqueurs, and provides space for the monks to take recreational and contemplative outings. The forestland is comanaged by the Slovenian government. I began to wonder what kind of spiritual relationship these monks had with the forest, how that spirituality affected management, and whether monastic institutions in North America also had forests.

Although monastic communities no longer manage the vast tracks of land they owned in the medieval period, contemporary monasteries are often land rich. Many have shifted from production-oriented landscapes toward more ecologically minded values and land management strategies, and several now practice ecologically sustainable forestry. In this short essay, I will give a brief history of the relationship between monks and forests in Europe and North America and provide a

contemporary case study in the transformation of what I am calling monastic forestry.

THE FOREST AS DESERT

Monasticism began in the deserts of Egypt, Assyria, and Judea. Early hermit-monks such as St. Anthony the Great (251–356 CE) saw the desert as a liminal space—a space between earth and heaven. They fled to the deserts to awaken to God's presence within, and in some cases to escape persecution, conscription, and the confines of respectable household life.[1] Some eventually became known as desert fathers and mothers.

The harsh climate and stark landscape of the desert were an astringent for the soul. Jerome (347–420), an early church father, wrote that "the desert loves to strip [the soul] bare": the desert was the ideal place to learn to control the passions that kept one from realizing union with God.[2] Just as the soul must be stripped of its excesses, the desert stripped down life to its most basic elements and taught the hermits how to find God.

As Christianity and monasticism spread into Europe, the vast forests of the continent took on significance as spiritual deserts. Solitaries and hermits often set up in woodlots and forests, where laypeople and disciples would seek them out for healing or instruction. The holy men and on rare occasions women who dwelled in the forests were the European equivalent of the desert fathers.

In his literary history of forests Robert Pogue Harrison writes that Christian civilization sought to bring the vast forests of Europe under the sign of the cross.[3] Forests were cleared and agricultural settlements expanded. The improvement of agricultural practices and the spread of Christianity went hand in hand; missionaries and kings alike fused Christian theology with an agrarian worldview. Celtic and Druid sacred groves were annexed into churchyards, holy wells, or sites of pilgrimage that honored Christian saints or apparitions of the Virgin Mary.[4]

The medieval historian Georges Duby, writing in the 1960s, considered monastic institutions the drivers of the first wave of European deforestation (800–1100), which he referred to as "great clearances" (*grands défrichements*). In environmental histories like Duby's, the residents of monastic institutions were painted as "holy frontiersmen" taming the vast wild forests of Europe—hardly a sustainable enterprise.[5]

Even though monasteries were part of many European settlements' expansion, the monk as ax-wielding pioneer is not consistent with evidence presented by contemporary environmental historians who have studied medieval monasticism's relationship to the forests of Europe. Monks certainly embodied an agrarian worldview that sought to Christianize the cultural landscape and transform the forest wilds into an ordered, agrarian paradise-garden. But the narrative put forth by older historians is often an exaggeration—often because the monks themselves may have overstated the extent of their forest clearing in their monastic histories.[6] And because monasteries produced most of the period's written records and histories, monastic documents became historians' primary source for tracing environmental history in Europe.

Monks tended to exaggerate the wildness and remoteness of their locales to accentuate their role in its cultivation—in the words of the prophet Isaiah (35:1), to make the forest-desert wilderness "blossom as the rose." Doing so, of course, complemented the monasteries' theological reason for being and mirrored the allegory of cultivating souls as a garden of God.[7] Consider Stavelot-Malmedy, double Benedictine monasteries built in the seventh and ninth centuries in the Ardennes region of Belgium. The land for the monastery was donated by Sigibert III, the Merovingian king of Austrasia from 633 to 656. He located the monastery on royal land "in our forest called the Ardennes, in an empty space of solitude . . . in which a throng of wild animals springs forth." The official history of the monastery described a barely populated, rugged wilderness at the community's founding by Saint Remaclus in 650. This description paints the area as wild, uninhabited, and even dangerous. Writing in the late 900s, Heriger of Lobbes, in his biography of Saint Remaclus, the *Vita Remacli*, described the place as "confined by mountains" and "impeded by swamp," with people "not fully established" who were "bound up in idolatry": a place fertile for conversion, both spiritual and agricultural. In reality, however, the area had been cultivated and occupied for many years by pagan inhabitants.[8]

THE MONASTIC SENSE OF PLACE

Monastic communities in the Middle Ages were often sited on the margins of towns and settlements, frequently in rural and agricultural landscapes. This served both a spiritual and a practical purpose. A rural location made a monastery more self-reliant economically, helped the monks focus on their vocation of prayer, contributed to an atmosphere of silence, and served as a buffer between the sacred and the secular.

Unlike clerics or itinerant friars, the "mendicants" who ministered to lay people, monks took a vow of "stability": they committed to stay in one place and with one community for the duration of their lives. They could leave the property for monastery business, and a few transferred their vows to other monasteries, but the ideal was to tether oneself and work out one's

MATHIEU-ANTOINE XHROUET, PUBLIC DOMAIN

The town and abbey of Stavelot, c. 1735, about 1,100 years after the abbey was established. Though described by a monk in the late 900s as being located in wilderness when founded, the area had actually been inhabited by non-Catholics for some time.

salvation in the place. Even today, this vow is often described as an admonition to become "a lover of the place"—a phrase attributed to Abbot Stephen Harding in *Exordium parvum*, a twelfth-century history of the Cistercian order, founded c. 1100.[9]

As in the Middle Ages, today's novice monks spend many hours a day working out their vocations, stripping away negative aspects of their former secular lives. Much of this "discernment," as the process of obtaining spiritual understanding is called, takes place on the typically large rural properties where monks live. The monks are discerning not only their call to a lifetime of monastic spirituality and the pattern of community life, but also their call to live in a *particular* place. These three to five years of spiritual formation, which involve study of scripture and monastic history and spirituality, are also intertwined with the land itself. As one monk who lives in a Trappist community in central California described it to me:

> You become part of the land. Our vow of stability grounds us, and an image that was really helpful for me was the idea of these trees [points] taking root . . . The longer I stay here, the more I can see myself growing in ways I never thought possible. It's of course not always easy, staying in one place, but the [longer] you stay [the higher you can] reach.[10]

This monk expressed a sentiment that is common among contemporary monks—being rooted in a particular place imbues monastic spiritual practices with the features and rhythms of the land. Those features and rhythms often include trees and forests, whose growth was analogous to this monk's own journey into monasticism. Trees and forests are in fact common symbols for the monks themselves, who strive to stand tall and quietly pray.

MANAGING MEDIEVAL MONASTIC FORESTS

At the peak of monastic influence, before the rise of the friars in the thirteenth century, and later the violent expropriations of the Protestant Reformation, entire counties were controlled by monasteries. Historian Walter Horn writes,

> As a manorial entity, the Carolingian monastery thus differed little from the fabric of a feudal estate, save that the corporate community of men for whose sustenance this organization was maintained consisted of monks who served God and spent much of their time in reading and writing.[11]

The abbeys drew their wealth from a wide swath of the surrounding territory, using a tithing system that supported their learning, prayers, and charity. The Cistercians, who saw themselves as reformers of the predominant monasticism, departed from this manorial system and instead employed a caste system, distinguishing between "choir" monks and *conversi*, the lay brothers who worked the land. This arrangement was not original to the Cistercians, but it presaged the rearrangement of labor during the eighteenth-century enclosure movements and industrial revolution.[12]

Medieval monks saw themselves as bridging earth and heaven until the Second Coming of Christ. That created an incentive to manage land with some measure of productive sustainability. Forests and forest products were highly valued resources that were often managed by intensive forestry techniques. Pollarding and coppicing, for example, allowed for multiple uses of forest spaces and rapid regrowth. Forests were also valued for their fruits, nuts, medicines, and fodder for pigs. Even as the expanding population greatly reduced Europe's primary forests, the monasteries managed their forests and groves on a sustainable basis. In fact, although their lands might not meet modern definitions, their broad-scale management techniques may have been at least baseline sustainable.

A feudal-era monastery with a significant history of forestry is the Hermitage of Camaldoli, founded in 1024 in Tuscany. Abbot Romuald (951–1027) was a contemporary of Saint John Gualbert (985–1073), patron saint of foresters, who planted trees for food and timber in his monastic allotment. Romuald set his monks to planting white fir (*Abies alba*) to ensure a steady supply of wood. With a large monastery at the base of the mountain and a cluster of hermitages up higher, Camaldoli became an exemplar in sustainable forestry practices. It even served to inform the Italian forestry code during the nineteenth century.[13] Today the Hermitage, which is still in use, is one of the oldest continuously occupied monasteries in Europe. Since World War II it has become part of the Casentino National Park, which encompasses 36,000 hectares (89,000 acres) and is among the largest in Europe.[14]

The extent of monasticism's influence on the European land base began to wane with the French Revolution and the secularization of Europe. Industrialization—supported by institutionalized forestry, the primary goal being volume of timber—was now the main driver of land-use change. As North America was colonized and the nations of Canada and the United States grew, Roman Catholic monasticism established a modest presence here, largely through Benedictine seminaries and universities. Their generally large, rural properties were primarily engaged in farming and maintaining monastic self-sufficiency through traditional manual work. Today, more than 150 Benedictine and Trappist monastic communities are active in the United States and Canada, most of them founded in the nineteenth and twentieth centuries.

The transformation of the United States' agricultural economy in the 1960s to greater efficiencies and productivity forced many monasteries to "industrialize" by moving away from agricultural production to value-added products, such as fudge, cheese, and fruitcake.[15] Declining vocations and aging populations have also pushed property management toward leases or contracts with professional managers. Despite these major changes, land remains integral to the monastic way of life and spirituality. Communities very seldom resort to selling or downsizing their properties, but at least one Benedictine monastery, Saint Procopius's Abbey in rural Illinois, has sold a portion of its property to local land developers, with the claim that what resulted was a more spacious and thoughtful development.[16]

BRIDGING MONASTICISM AND ENVIRONMENTALISM

Monasticism has retained much of its medieval character, especially an overall agrarian worldview, with human beings cooperating with God to improve the land through cultivation. The image of the biblical paradise-garden is a strong motif that remains central to the monastic tradition of manual work.

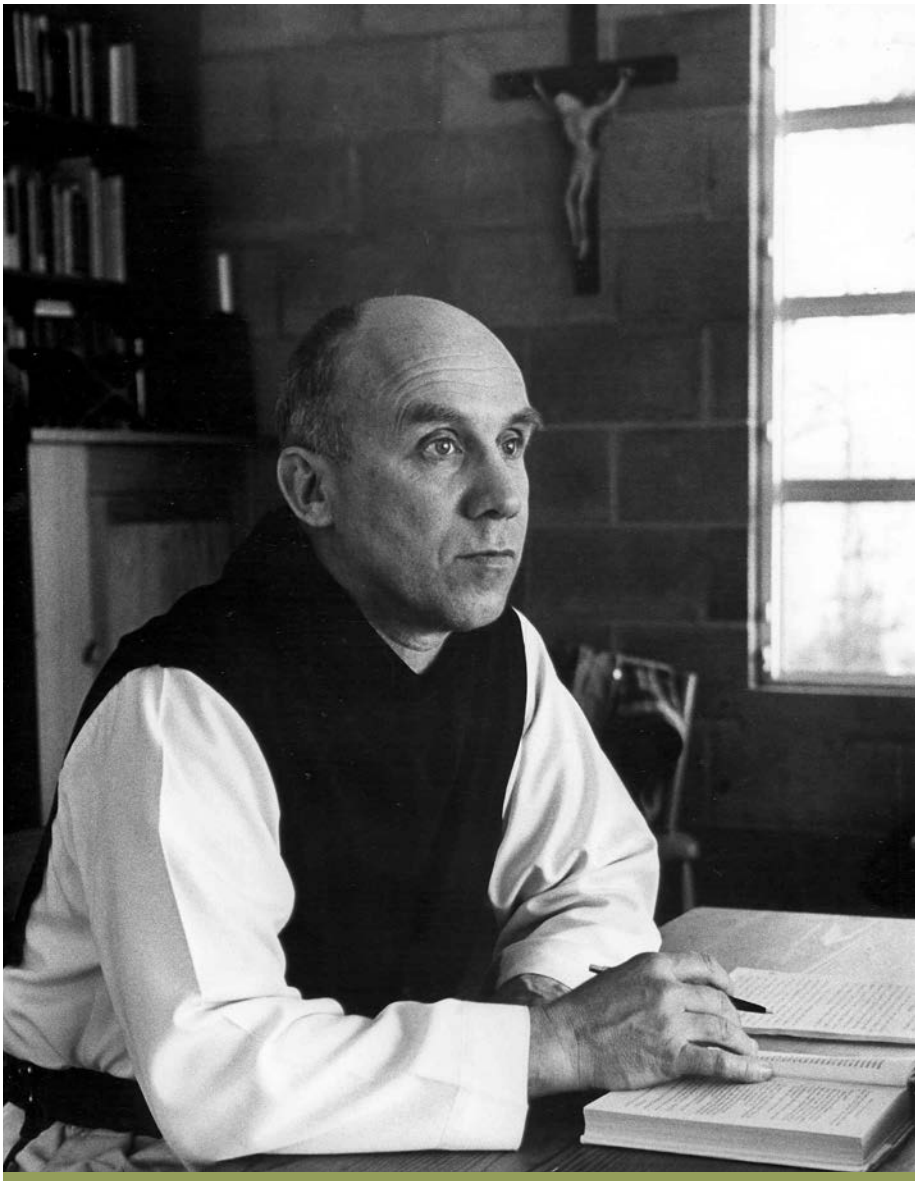
Beginning with the 1962–1965 Second Vatican Council, however, when the Roman Catholic Church sought to update its practices, monasticism has addressed progressive movements in contemporary society. For example, the life and work of the twentieth-century contemplative Thomas Merton (1915–1968) represents a bridge between monasticism and environmentalism. A Catholic convert who became a monk at Our Lady of Gethsemani Trappist Abbey in Kentucky in 1941, he wrote a bestselling autobiography entitled *The Seven Story Mountain* shortly after he entered the monastery and went on to popularize contemplative spirituality through dozens of books and articles. Merton expounded on a wide variety of other subjects as well and wrote thousands of letters to contemporaries on religion, literature, and politics.

Merton was a talented nature writer. In his journals he recorded

daily weather reports, and he documented his encounters with birds and other wildlife, including a not-so-friendly encounter with a snake in his outhouse.[17] Merton's spiritual writing often included reflections on the sacredness of nature, especially birds and trees. In his book *New Seeds of Contemplation*, an essay entitled "Everything That Is, Is Holy" hinted at a theology that resonates with Saint Francis of Assisi (1181/1182–1226), the patron saint of ecology. In it, he meditated on creation's unique connection to God: "We do not detach ourselves from things in order to attach ourselves to God, but rather we become detached *from ourselves* in order to see and use all things in and for God."[18] Instead of a dualistic or Neoplatonic view that matter and spirit are at odds, Merton saw matter and spirit as inseparable. Merton even compared the creatures at his monastery to saints because by their very nature they praise and give glory to God.[19]

Merton was always discerning a call to greater solitude and silence in the tradition of the desert hermits, and he loved to wander alone in the monastery's forests. In fact, he was tempted to move to Camaldoli Hermitage and later considered hermitage locations in Alaska. As he wrestled with his vocation as a monk seeking greater solitude, he briefly entertained the possibility of being stationed at the monastery fire lookout on Vineyard Knob, the highest point on the abbey property, but the distance of the Knob from the church and his inability to drive dissuaded him.[20] Eventually Merton was permitted to move to a small hermitage less than a mile from the monastery. There he was surrounded by forest, and his journals are rich with Thoreauvian observations.

In the 1960s he wrote controversial essays about social justice, race, and peace. This wide-ranging and progressive thinking also made



PHOTOGRAPH OF THOMAS MERTON BY JOHN HOWARD GRIFFIN. USED WITH PERMISSION OF THE MERTON LEGACY TRUST AND THE THOMAS MERTON CENTER, BELLARMINE UNIVERSITY

Thomas Merton at his hermitage. He framed the entire monastic vocation in terms of ecological integrity.

points of contact with the fledgling environmental movement. In 1963 Merton corresponded with Rachel Carson, author of *Silent Spring* (1962). Merton later joined the Wilderness Society, and he began to frame the entire monastic vocation in terms of ecological integrity. In a review essay, Merton wrote,

> If the monk is a man whose whole life is built around a deeply religious appreciation of his call to wilderness and paradise, and thereby to a special kind of kinship with God's creatures in the new creation . . . then we might suggest that the monk, of all people, should be concerned with staying in the "wilderness" and helping to keep it a true "wilderness and paradise." The monk should be anxious to preserve the wilderness in order to share it with those who need to come out from the cities and remember what it is like to be under trees and to climb mountains.[21]

Integrating biblical motifs with contemporary environmental concerns, the agrarian logic of converting the wilderness to an agricultural paradise is flipped on its head, and the wilderness begins to be imagined as paradise itself.

Typical of his fellow monks, Merton engaged in manual labor. One of his jobs was as the abbey forester. Merton would spend the afternoons cutting trees for monastery construction projects and firewood. Kentucky State Forestry gave the abbey hundreds of loblolly pines, which Merton and the novice monks of Gethsemani planted. Unfortunately, most of them died within the first cold winter because they were not a cold-hardy variety.[22]

Today, Gethsemani Abbey is primarily a place of retreat for those seeking to immerse themselves in the monastic rhythms of chanting and prayer. The monastery's extensive twenty-two-hundred-acre property serves as semi-protected area for retreatants and monks alike to wander and pray. Merton's hermitage in the forest is used on a regular basis by the monks and is occasionally visited by curious pilgrims devoted to Merton. There are currently no harvesting activities at Gethsemani Abbey.

CONTEMPORARY MONASTIC FORESTRY

The general cultural shift toward a valuing of wildness and ecosystem integrity evident in the writings of Thomas Merton has also influenced post–Vatican II monasticism more broadly, and by extension the monastic approach to forest management. For the most part, monasteries with extensive forests take a more or less hands-off approach, allowing forests to exist naturally without intervention or harvesting. However, in some communities, monks' and nuns' land management reflects environmental calls for ecosystem integrity and restoration.

Redwoods monastery in California, Regina Laudis in Connecticut, Our Lady of the Rock on Shaw Island in Washington, Westminster Abbey in Mission, British Columbia: all have extensively forested properties that are not actively managed for harvest. This passive approach is likely the most common form of forest management among North American monastic communities. Trees are an amenity to retreatants and contribute to the general contemplative, natural atmosphere and range from planted arboretums to protected natural areas.

In western Oregon, the Benedictine monastery and seminary Mount Angel departs from the pattern: it maintains, offsite, a significant forested endowment property that is managed by outside contractors to generate revenue for the community. Saint Gertrude's monastery in Idaho manages more than 1,400 acres of forest and farmland. Although there is no public information about the monastery's annual harvests or management priorities aside from aesthetic and spiritual, the monastery's website includes a statement from Sister Carol Anne, the forest manager: "The forest is my heaven . . . ," suggesting that the land is managed primarily for contemplative and ecosystem service values.[23]

Saint John's Abbey in Collegeville, Minnesota, is a Benedictine monastery founded in 1864 by monks from St. Vincent Abbey in Pennsylvania. The abbey property encompasses some 2,944 acres, of which 1,400 acres is forestland, and includes a large arboretum and a maple sugarbush. Since 2002, the same year it hired a forester who was not a monk, the abbey has been coordinating with Minnesota Native Landscapes and Prairie Restoration, Inc., to restore native grasses and forbs to 35 acres of oak savanna, a project that includes prescribed burning. In 2002, the abbey received Forest Stewardship Council certification for 2,400 acres.[24]

Holy Cross Trappist Abbey in Berryville, Virginia, recently partnered with the University of Michigan's School of Natural Resources and Environmental Management on a full assessment of the sustainability of the monastery's 1,400 acres, with recommendations for future actions: that the abbey plant more trees along roads, widen riparian buffers, and restore native hardwood forests in several degraded pastures.[25] In addition to assessing the abbey's state of sustainability and recommending improvements, the document also includes an appendix of monastic communities with various sustainability programs or goals.

The Trappist Abbey of New Melleray in Iowa, which manages more than 3,000 acres, decided in 2019 to hire a full-time in-house professional forester to intensify its forestry operation to support a casket-making business. The abbey plans to remove invasive species and plant more high-value oak trees in maple-dominated stands in anticipation of a long-rotation selection harvest and shelterwood harvest operation.

A CONTEMPORARY CASE STUDY

Our Lady of Guadalupe Abbey in Carlton, Oregon, illustrates the evolution from a "tree farm" approach—viewing trees as crops and forests as cropland—toward a forest management approach that seeks to improve structural and age diversity and biodiversity while generating revenue through the sale of timber.

Our Lady of Guadalupe is a Trappist monastery founded in 1955 by 41 monks. The community began in 1825 in Nova Scotia and relocated to Rhode Island in 1900. In 1905 the abbey sent monks to Jordan, Oregon. That foundation eventually failed and the monks returned to Rhode

COURTESY OF NEW MELLERAY ABBEY

A forest near the New Melleray Abbey in Iowa provides both a source of white pine lumber for the abbey's business Trappist Caskets and opportunities for quiet reflection.

Island. After trying and failing in New Mexico, the monks then purchased a property in Carlton, not far from the former Jordan community.

The monastery sits in the Willamette Valley in the western foothills of the Oregon coastal range. The community is surrounded by rural properties on all sides, many of which have become vineyards. The founding monks grew grain in the bottomlands and raised sheep and cattle on the surrounding hillsides. During the early 1960s, the farm operation was caught up in the declining agricultural economy and the monks struggled to stay solvent. They were eventually forced to sell their livestock and lease their farmland to a local farmer, where grain and eventually grass seed was grown extensively until 2016, when the monks decided to lease the land for hazelnut production.[26] The monastery pivoted toward other industries: a carpentry shop manufactured church pews and other furniture, and a book bindery provided services for local universities. The abbey opened a fruitcake bakery in the 1980s and a wine storage and labeling facility in the 1990s.

Trees are now another revenue-generating crop. In 1967, the monks started a Christmas tree operation. They also began managing about 880 acres of the property for softwood timber production, planting Douglas fir (*Pseudotsuga menziesii*) and experimenting with ponderosa pine (*Pinus ponderosa*), knobcone pine (*Pinus attenuata*), hybrid poplar (*Populus* spp.), and Leland cypress (*Cupressus leylandii*). Plantations followed a tree farm model, with the trees planted in rows.

In the 1980s, commercial harvesting began, led by a small crew of forester-monks. The crew harvested trees in small block cuts, and replanted in tightly spaced, single-species cohorts. Native species were not necessarily privileged, though-Douglas fir was the most commonly planted tree. The monastic forest management program emphasized the production of timber resources on a sustained-yield cycle, based on the scientific forestry prescriptions of Oregon extension specialists, combined with the local knowledge accrued by the monks over many years of living there.

This timber-centric strategy was more or less compatible with a Trappist agrarian orientation to land: the forest was part of the wider farming operation, rather than an ecosystem. In this approach, well-ordered plantings were in line with the mandate to cooperate with God to order the world and make the wilderness blossom as a rose. During one of my stays at the abbey, I was walking with a young monk past a particularly straight row of Douglas firs. The stand reminded him of something the former forest manager once said:

> Father Romaine, when he was with us, he was one of the main planters and he walked by here once and said, "This is what some people contemptuously call a tree farm," at which he

COURTESY OF THE AUTHOR

A slash pile of Oregon white oak is seen in the newly restored savanna on the Our Lady of Guadalupe Abbey property. The goal is to restore it to its pre-European settlement structure.

took great umbrage at because he thought it was a forest. But if you look at it compared to the other parts of the forest, it is kind of a tree farm.

This brother, raised in an era of environmental awareness, saw a difference between a naturally generated forest and a plantation. Father Romaine, however, steeped in a more agrarian approach to forestry, thought the distinction belittled the work he had done to reestablish the forest from its midcentury degraded state.

In the late 1980s, a heavy-handed clearcut near a favored picnic area angered several monks. More and more brothers and retreatants saw the monastery as a sanctuary and wanted a flourishing forest in this agricultural county. The monks eventually decided to hire a professional forester to manage the forest with more emphasis on ecological integrity.

In 1995, this consulting forester inventoried the property and wrote a management plan, guided by the monks' input, that would explicitly balance spiritual values, ecological health, and revenue generation. The manager has since transitioned to an ecological approach to forest management and obtained Forest Stewardship Council certification, which confirms that management and harvesting conform to ecological principles.

That has meant patch cuts no larger than two acres and more commercial thinning to diversify the forest's age and structure. Harvest areas now have more standing dead trees, wildlife trees, and coarse woody debris. Harvests have focused on clearing areas around overgrown Oregon white oaks (*Quercus garryana*) and Pacific madrone (*Arbutus menziesii*) to increase native tree species diversity. The monks began aggressively managing for invasive species—false brome (*Brachypodium sylvaticum*), Scotch broom (*Cytisus scoparius*), and English hawthorn (*Crataegus laevigata*)—and designated an 80-acre section as a remnant old-growth area, set aside from thinning and commercial harvests.

The abbey forest manager also enrolled the property in a conservation easement program funded by the Bonneville Power Administration, which is legally obligated to purchase conservation easements for habitat restoration in the Columbia River valley because of the land it flooded for hydroelectric dams. After a lengthy process and assessment, the monastery received a substantial sum of money to keep the property undeveloped and manage the forest sustainably.

In addition, the conservation easement qualified the monastery for funds it has used to restore areas of Oregon white oak savanna, an endangered ecosystem with less than five percent of its historical range remaining. The local climate favored white oak, and before European settlement, the Kalapuyan peoples used fire to clear the forest of firs to open it up for hunting and harvesting acorns. Without fire, Douglas fir dominated the oaks, eventually shading them completely. In the past, white oak was often cleared to make way for more Douglas fir or sold as firewood. The abbey forester's ecological restoration will use historical baselines to return the ecosystem to its pre-European settlement structure. Harvesting all the trees except the white oaks mimics the historical pattern of burning. The oaks are expected to return to health and vigor, and the restored savanna will see an increase in biodiversity, especially migratory birds, songbirds, and raptors.

From its early agrarian roots and tree farm model to today's ecological working forest, Our Lady of Guadalupe has made significant changes in its approach to forest management. The Trappist care for creation has been central to the community's approach to land as it cultivates both financial and spiritual values. The monastery now sees its forests as not just a working forest but a spiritual sanctuary for both monks and visitors. One condition of the abbey's conservation easement is allowing public access for recreational hiking, and as one of the largest

intact forest areas in Yamhill County, identifiable as a large green block in area maps, the monastery will attract recreationists as well as retreatants.

EPILOGUE

Roman Catholic monasticism has a long history of using forested landscapes as spaces for prayer, spiritual symbolism, and community livelihood. In North America, the engagement with environmental and conservation discourses has shifted forest management away from agrarian approaches to more ecologically minded ones.

Monasteries remain centers for cultivating a deeper connection to place and landscape. Although monastic forests make up a tiny fraction of the privately-owned forestland in North America, they are often located in high-growth areas and thus provide opportunities for connecting protected areas and supplementing local green spaces.

These monastic properties are increasingly managed by outside professionals knowledgeable about land management challenges and solutions. With a heritage that emphasizes a monk's sense of place, monastic communities are committed to a long-term vision for their landscapes and may be more receptive to restoration or silvicultural projects that have longer time scales than conventional commercial forestry operations. Some communities have now placed their forests under nonprofit-funded conservation easements. As monastic recruits continue to dwindle, the ecological value of these properties at least will remain intact.

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NOTES

1. C. H. Lawrence, *Medieval Monasticism: Forms of Religious Life in Western Europe in the Middle Ages*, 4th ed. (London: Routledge, 2015), 1–14.
2. Belden Lane, *The Solace of Fierce Landscapes: Exploring Desert and Mountain Spirituality* (New York: Oxford University Press, 1998), 11.
3. Robert Pogue Harrison, *Forests: The Shadow of Civilization* (Chicago: University of Chicago Press, 2009), 61–63.
4. This general thesis is also proposed by Lynn White Jr. in his essay "The Historical Roots of Our Ecological Crisis," *Science*, March 10, 1967: 1203–07.
5. John Alberth discusses Duby at length in *An Environmental History of the Middle Ages: The Crucible of Nature* (New York: Routledge, 2013); quote on 93.
6. Richard D. Oram, "Holy Frontiersmen? Twelfth- and Early Thirteenth-Century Monastic Colonization and Socio-Economic Change in Poland and Scotland," in *The Northern World: Britain and Poland-Lithuania: Contact and Comparison from the Middle Ages to 1795*, ed. Richard Unger and Jakub Basista (Leiden, Netherlands: Brill, 2008), 103–22.
7. Alberth, *Environmental History of the Middle Ages*, 94–95.
8. Ellen F. Arnold, *Negotiating the Landscape: Environment and Monastic Identity in the Medieval Ardennes* (Philadelphia: University of Pennsylvania Press, 2012), 31, 34. A double monastery means the abbey was composed of two monastic communities under the direction of one abbot.
9. There is some debate about whether Abbot Stephen Harding (1050–1134) wrote *Exordium parvum*. See Martha G. Newman, "Reformed Monasticism and the Narrative of Cistercian Beginnings," *Church History* 90, no. 3 (2021): 543.
10. Jason M. Brown, "Dwelling in the Wilderness: Place, Landscape and the Sacred among Catholic Monks of the American West" (PhD diss., University of British Columbia, 2017), 142.
11. Walter Horn, "On the Origins of the Medieval Cloister," *Gesta* 12, no. 1–2 (1973): 13–52.
12. Isabel Alfonso, "Cistercians and Feudalism" *Past & Present* 133 (1991): 3–30.
13. Gloria Pungetti, Father Peter Hughes, and Oliver Rackham, "Ecological and Spiritual Values of Landscape: A Reciprocal Heritage and Custody," in *Sacred Species and Sites: Advances in Biocultural Conservation*, ed. Gloria Pungetti, Gonzalo Oviedo, and Della Hooke (New York: Cambridge University Press, 2012), 65–82.
14. Thymio Papayannis and Josep-Maria Mallarach, eds., *The Sacred Dimension of Protected Areas: Proceedings of the Second Workshop of the Delos Initiative–Ouranoupolis 2007* (Gland, Switzerland: IUCN, and Athens: Med-INA), 2009, 61.
15. For general examples of this historical process, see the following monastic histories: Jerome Oetgen, *Mission to America: A History of Saint Vincent Archabbey, The First Benedictine Monastery in the United States* (Washington, DC: Catholic University Press, 2000); and John C. Scott OSB, *This Place Called Saint Martin's, 1895–1995: A Centennial History of Saint Martin's College and Abbey, Lacey, Washington* (Virginia Beach, VA: Donning Company Publishers, 1996).
16. Christine Fletcher, "The Border between Wilderness and Garden: Cultivating a Benedictine Spirituality of the Land," in *An Unexpected Wilderness: Christianity and the Natural World*, ed. Colleen Mary Carpenter, College Theology Society Annual 61 (Maryknoll, NY: Orbis Books, 2015), 187.
17. Thomas Merton, *Day of a Stranger* (Salt Lake City: Gibbs M. Smith, 1981), 53.
18. Thomas Merton, *New Seeds of Contemplation* (New York: New Directions, Kindle edition), 23. Italics in the original.
19. Merton, *New Seeds of Contemplation*, 31–33.
20. Michael Mott, *The Seven Mountains of Thomas Merton* (New York: Houghton Mifflin Harcourt, 1984), 286–88.
21. Thomas Merton, "Wilderness and Paradise," in *The Monastic Journey*, ed. Brother Patrick Hart (Kansas City, MO: Sheed, Andrews and McMeel, 1977), 144–50. This essay was first published in *Cistercian Studies* 2 (1967), 83–89.
22. Pascal Phillips OCSO, "Merton as Forester—The Result," *The Merton Seasonal* 26, no. 2 (2001): 25–27.
23. Monastery of Saint Gertrude, https://stgertrudes.org/staff/sister-carol-ann-wassmuth/.
24. "Saint John's Abbey Forestlands Receive Certification from SmartWood," July 8, 2002, College of Saint Benedict and Saint John's University, https://www.csbsju.edu/news/saint-johns-abbey-forestlands-receive-certification-from-smartwood; and "Certification in the Benedictine Tradition," Forest Stewardship Council, Newsletter Stories, https://us.fsc.org/en-us/newsroom/newsletter/id/121. According to the Council's FSC Certificates Public Dashboard, the certificate was terminated in December 2011, but it doesn't state why. All websites accessed June 13, 2022.
25. Kathryn Buckner, Craig Cammarata, Charlotte Coultrap-Bagg, Alexander Linkow, Jessica Neafsey, and Christopher Stratman, *Holy Cross Abbey: Reinhabiting Place* (Ann Arbor, MI: School of Natural Resources and Environment, University of Michigan, 2010), iii.
26. This section comes from Brown, "Dwelling in the Wilderness," 115–24.

Who Will Celebrate Us?

The Bureau of Land Management at Seventy-Five

BY JAMES R. SKILLEN

In 2021, the Bureau of Land Management turned 75. Its expansive, ever-changing mission may have contributed to there being little recognition of the milestone.

July 16, 2021, was the Bureau of Land Management's seventy-fifth anniversary, but celebration was probably muted at the agency's relatively new headquarters in Grand Junction, Colorado. The Trump administration came into office in 2017 promising to deconstruct the administrative state,[1] and BLM felt the hostility of that promise for the next four years. The administration never appointed a permanent director, and BLM's acting director, William Perry Pendley, was one of its most vocal critics.[2] Most significantly, the administration moved the BLM headquarters to Grand Junction in 2019 and scattered many senior staff to various state offices around the West. The move had the intended effect of gutting BLM's senior career staff, with roughly eighty percent of headquarters staff resigning or retiring.[3] And as perfect bookends, the Republican Party's 2016 and 2020 platforms included a pledge to transfer public lands to the states.[4]

The Biden administration has been more supportive of public lands and BLM but is still challenging a long-standing priority and source of revenue generation for the agency: fossil fuel development. Meanwhile, Interior Secretary Deb Haaland decided to move the BLM headquarters back to Washington, and the new director, Tracy Stone-Manning, is working to accomplish that while simultaneously refilling a host of vacant positions.[5]

BUREAU OF LAND MANAGEMENT

These posters were created to highlight some of the recreation and historical areas the Bureau of Land Management manages. Their addition to the agency's portfolio has complicated its multiple-use management mission.

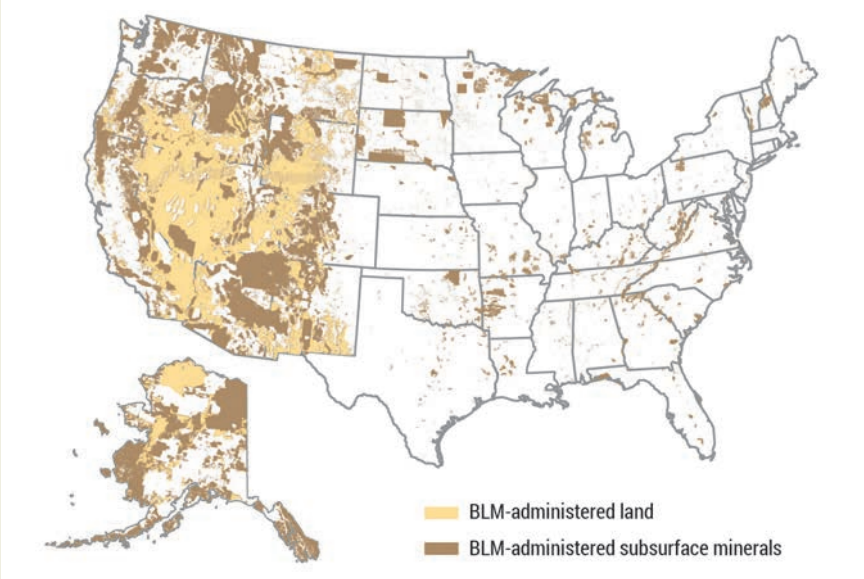
Although the past few years have been particularly challenging for the agency, they haven't been unique. Rather, BLM's seventy-fifth year encapsulates well the achievements and challenges of multiple-use public lands management. Whereas the national parks, national forests, and national wildlife refuges were all set aside for particular purposes, and previous land-use practices and claims were generally eliminated in the process, the public lands managed by BLM have a long history of conflicting land-use claims made by western states, miners, livestock operators, and many others. Most shifts in public lands management have been incremental, and they been more often administrative than legislative.

Perhaps it is this longer history that has made it difficult for BLM to celebrate its milestone anniversary more visibly and with greater fanfare. After all, what would it celebrate? Its greatest accomplishments, in many ways, have been in mediating conflicting public demands. Celebrating those negotiations would only remind public land users that they have not gotten everything they want. And who will celebrate with BLM? The agency does not have a primary, supportive constituency, and until this year, it did not have a nonprofit counterpart, as the U.S. Forest Service does in the National Forest Foundation. The national political climate is so polarized and toxic that some BLM employees, who are "often the most visible and vulnerable representatives of the federal government in remote areas and have been subject to a range of threats and assaults," would feel unsafe drawing attention to themselves and their work.[6]

BLM's seventy-fifth anniversary deserves far more attention than it has received, both to evaluate the past and to consider the agency's outsized importance in the coming decades. To start with, BLM manages roughly ten percent of all surface land in the United States, concentrated in the eleven western states and Alaska. The history of these lands is important ecologically, and it is central to the economic and cultural story of the American West. Perhaps most troubling, the challenges of the past forty years reflect the growing partisanship and antigovernmentalism that now threaten our democratic institutions. For these reasons and others, we should attend to and learn from BLM's past.

But the agency's anniversary also deserves more attention because BLM now sits at the crossroads of one of the most important national questions of our time—namely, whether the United States will decarbonize its energy economy. BLM oversees some 700 million acres of on-shore subsurface minerals owned by the federal government. Its leasing of these minerals is a limiting factor in the total volume of coal, oil, and gas that support our economy, and its leasing and patenting of hard rock minerals are critical to the production of the technologies needed for alternative energy sources to work. So BLM is not only the nation's largest land manager by area, it is also the largest supplier of fossil fuels and hard rock minerals in the country.

BLM's history, like that of the U.S. Forest Service, is a story of an expanding mission. In BLM's case, the agency's early mandate came almost entirely from land and resource disposal laws. Because of this, for many years it was nicknamed the "Bureau of Livestock and Mines." The agency's early accomplishments were primarily bringing greater order and federal oversight to resource development on the public lands. But over time, the agency's mission expanded to include activities such as outdoor recreation, endangered



MAP AND LOGO, BUREAU OF LAND MANAGEMENT

The BLM manages one in every 10 acres of land in the United States, and approximately 30 percent of the nation's minerals. Most lands are located in twelve western states, including Alaska, and comprise 245 million acres of land and 700 million acres of mineral estate.

species protection, and national monument management—new responsibilities that added to, rather than supplanted, the agency's resource development objectives. This is, as historian Paul Hirt once wrote of the Forest Service, the "conspiracy of optimism" inherent in multiple-use management: the idea that an agency can meet more and more diverse public demands without a fundamental revision to its mandate.[7] The debate over decarbonizing the U.S. energy economy for the first time suggests that BLM might, at some point in the future, drop a central element of its current multiple-use management mission.

To understand the past and the present questions that BLM, Congress, and the American people face, it is helpful to think about other significant moments in the agency's history and the context and contingencies that nudged the agency in new directions. Any effort to do this in a few pages is necessarily a thin outline, which is organized here around eight inflection points.[8]

1. FORMATION, 1946

BLM arose from a merger of the General Land Office and the U.S. Grazing Service. If the goal was creating a national system of public lands or a professional land management agency, it was not an auspicious start. Consider the BLM's origins. When the General Land Office was established in 1812, its primary task was to transfer public domain lands, which in 1946 totaled more than 500 million acres, into state and private ownership and to get public domain resources into the market economy. For all intents and purposes, it had been a real estate agent.

In contrast, during its eleven-year existence, the U.S. Grazing Service had a management mandate, but there was no clear consensus on what that meant. The service's director in 1946, Clarence Forsling, had come from the Forest Service and was trying to build professional management capacity on that blueprint. Public lands ranchers generally saw the Grazing Service as an agency to help with *their* rangeland, something more akin to the modern Natural Resources Conservation Service.

That tension came to a head in Congress in 1946. Appropriations committees in both the House and the Senate demanded that range management become self-sustaining, but they diverged sharply from there. One committee demanded higher grazing fees to cover the cost of professional range management; the other committee demanded lower grazing fees and a commensurate reduction in management capacity, which would effectively maintain what the first grazing director had called "Home Rule on the Range." When they couldn't agree on grazing fees, they simply slashed the Grazing Service's budget, ultimately cutting its staff by eighty percent at the very moment of the BLM's formation. It would be more accurate to say that BLM was created by merging the General Land Office with a remnant of the U.S. Grazing Service.

The grazing controversy illustrates an important source of tension that continues today. When public lands ranchers agreed to organized grazing districts, they tended to see the arrangement as a service that protected their interest in the public lands. Regulation and active management that limited livestock grazing infringed on what ranchers considered to be their superior claims to the public lands, and being told to pay higher grazing fees was essentially being asked to fund an injustice. This same tension exists in other areas of BLM's multiple-use management as well.

Over the next fifteen years, BLM rebuilt and expanded its budget and staff, building a more coherent administrative organization. The problem was that it wasn't organizing around a coherent mandate or mission. Its work was still directed by what one Interior official described as "the crazyquilt patchwork of public land laws, altered and mended and embroidered to meet the exigencies

The Bureau's first emblem, unveiled in 1954, captured the agency's resource extraction–focused mission and purpose. Critics said it simply illustrated the moniker Bureau of Livestock and Mining.

of the moment, [and which did not] add up to a national land policy and program."[9] To be clear, this wasn't a gap between congressional goals and BLM experience; rather, Congress had no national land policy and program in mind.

BLM's first emblem, unveiled in 1954, captured the agency's mission and purpose. From top to bottom are a land surveyor, a lumberjack or logger, an oil derrick worker, a rancher, and a miner, with oil wells and other industrial infrastructure on the right side, and Conestoga wagons, representing the heritage of land disposal, on the left. If anything, the emblem simply illustrated the moniker Bureau of Livestock and Mining.

2. MULTIPLE-USE MANAGEMENT, 1964

People generally refer to the Federal Land Policy and Management Act of 1976 as the agency's "organic act" when talking about BLM's multiple-use mission. But FLPMA did not initiate multiple-use management in BLM, nor was it even the agency's first multiple-use mandate. It simply affirmed and permanently codified what the agency was already doing. The year 1964 is a more important inflection point for the origins of multiple-use management at BLM.

Two forces came together in the 1960s that reshaped federal land management more broadly, placing growing pressure on BLM and Congress to develop a more comprehensive approach to public land management. The first was outdoor recreation. After World War II, Americans increasingly had leisure time and disposable income, and outdoor recreation surged. The 1950s saw a steady flow of reports and articles with titles like "The Crisis in Outdoor Recreation"—a number of which were written by a former BLM director, Marion Clawson.[10] Congress established the Outdoor Recreation Resources Review Commission in 1958 to address the "crisis," and Congress funded initiatives in the national parks and forests to dramatically expand outdoor recreation infrastructure.

BLM remained in a curious position. Outdoor recreation was certainly expanding on the public lands, but the agency was still approaching such pursuits as a land disposal, rather than management, issue. Its primary authority was to sell or lease public lands for outdoor recreation. Congress codified BLM's peripheral recreation status in the Wilderness Act of 1964 by not including BLM public lands. What is more, the agency's public lands did not appear on most national atlases, so they were largely invisible to Americans traveling across the country to visit parks, forests, and wildlife refuges. But as Americans flocked to the public lands, Congress and BLM had to decide how recreation fit into the agency's mission.

The second force was a growing ecological consciousness in America. An increasing number of Americans were coming to see the environment not simply as a collection of resources but as an integrated web of relationships, and this vision demanded a more comprehensive approach to management. There was no greater champion of this vision in the 1960s than Interior Secretary Stewart Udall, whose department oversaw BLM.

Those forces led to congressional action. Congress established the Public Land Law Review Commission in 1964 to consider federal land and resource law in its entirety and recommend improvements. Its 1970 report, *One Third of the Nation's Land*, was critical in shaping FLPMA in 1976. But of more immediate importance, Congress in 1964 passed the Classification and Multiple-Use Act as well, giving BLM temporary authority to classify public lands for disposal under existing law or for retention and multiple-use management. Interior and BLM leaders capitalized on this authority and worked to remake the agency on the Forest Service model of multiple-use conservation, placing resource development programs like range management and timber in a larger conservation context. This was reflected in BLM's next emblem, unveiled in 1964 and still used today. The absence of any signs of development or industry, or even human presence, stands in stark contrast to its predecessor. In a way, it is an aspirational vision of what Secretary Udall had talked about.

3. THE ENVIRONMENTAL TURN, 1970

The 1970s are often called the environmental decade. Almost every major federal environmental statute constituting our national environmental policy was passed or amended between 1969 and 1980, responding to a public call for comprehensive and coherent environmental protection. BLM began to build a more expansive multiple-use management mission in the 1960s, but 1970 was a pivot point in the shift

toward more ecologically oriented multiple-use management.

In the National Environmental Policy Act of 1969, Congress declared a national policy to "encourage the productive and enjoyable harmony between man and his environment." When he signed NEPA into law on January 1, 1970, President Nixon said, "The nineteen-seventies absolutely must be the years when America pays its debts to the past by reclaiming the purity of its air, its waters, and our living environment."[11] This goal met the public demand for a comprehensive policy of environmental protection.

BUREAU OF LAND MANAGEMENT

The Bureau's current logo, unveiled in 1964, with its absence of any human presence, stands in stark contrast to its predecessor and can be seen as aspirational.

More importantly, it reflected an ecological reframing of multiple-use management. The real power of NEPA wasn't in its lofty statement of purpose but in its procedural requirements that agencies prepare an environmental impact statement for each "major federal action with significant impacts on the environment" and that citizens have opportunity to enforce this process through the courts.

NEPA had three significant effects on BLM: its public participation requirements opened the agency's decision making in new ways to all Americans; it exposed the agency to extensive new litigation; and most importantly, it led BLM to hire more diverse staffers with social science expertise, known collectively as "ologists": ecologists, sociologists, economists, and biologists, to name a few. NEPA thereby altered the BLM's workforce and culture.

One Third of the Nation's Land also recommended a more coherent framework for BLM's public lands. Over the next ten years, Congress passed a shower of legislation that affirmed and expanded the agency's multiple-use management and environmental responsibilities. The Endangered Species Act of 1973, for example, prohibits federal agencies from taking any action that would jeopardize a listed threatened or endangered species. Like many statutes over the years, ESA simply added a new responsibility to BLM's already full plate, producing both intended and unintended consequences. But ESA did not help BLM refine multiple-use management.

4. RESHAPING MULTIPLE-USE MANAGEMENT AND POLITICS, 1976

With passage of the Federal Land Policy and Management Act in 1976, Congress finally gave BLM a permanent multiple-use mandate. The basic framing was identical to the National Forest Management of 1976, passed for the Forest Service as its new organic act. In FLPMA, Congress finally declared what most people already expected—that public lands would remain in permanent federal ownership—and Congress therefore repealed a wide range of land disposal statutes.

FLPMA made BLM's mission both more coherent and more complex. On the one hand, it provided a set of overarching goals and values for balancing multiple uses. Furthermore, it created a new, comprehensive land-use planning process modeled after, and later integrated with, the preparation of environmental impact statements. The new process ensured a multidisciplinary approach to planning for all resource management programs and opened decision making to extensive public participation and review. The process thus accelerated the changes that NEPA initiated in the early 1970s, solidifying BLM's expansive multiple-use mission as defined by FLPMA:

> that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.[12]

On the other hand, FLPMA added new authorities and responsibilities that have made BLM's work more controversial. Two examples will suffice. First, the act gave BLM comprehensive law enforcement authority, although it also directed the agency to achieve "maximum feasible reliance" on contracts with local law enforcement. The new law enforcement program that followed, albeit with very limited staffing, was a visible reminder to western states and counties that these were federal lands under federal authority, not federally owned lands under local authority. And tension between federal and local law enforcement has been a recurring issue in Congress and in many parts of the West. Second, FLPMA extended the Wilderness Act to BLM, directing the agency to review its lands for wilderness characteristics and to make recommendations by 1991. The agency finished its review of the lower forty-eight states by 1980, establishing 919

wilderness study areas totaling more than 23 million acres. Wilderness review and designation have been contentious developments, particularly for an agency that historically had emphasized economic resource development.

Nevertheless, in the midst of the 1970s oil crisis, the BLM remained firmly committed to energy development and continued to support other kinds of economic development on public lands.

5. THE SAGEBRUSH REBELLION, 1979

FLPMA may have given BLM a new, comprehensive mandate, but it didn't create any new, unified support for the agency. Indeed, FLPMA's passage and implementation under the Carter administration sparked a wave of protest in the West called the Sagebrush Rebellion. It was led by both Democrats and Republicans who had a material interest in the public lands and who waged it primarily through state legislative action that claimed ownership of federal public lands. Constitutionally, the rebellion was a states' rights challenge grounded in the Tenth Amendment. The rebellion continued for three years, finally fizzling out when Ronald Reagan's Interior secretary, James Watt, told western governors to take what they wanted from the public lands. The Sagebrush Rebellion was an inflection point not so much in BLM as in the broader politics of public lands.

Reagan won a landslide election in 1980 in part because he brilliantly harnessed wide-ranging frustration with the federal government's growing role in areas like civil rights, gender equality, environmental protection, and workplace safety. Reagan had campaigned on a promise to get government off our backs: "Government is not the solution to our problem," he said, "government is the problem."[13] FLPMA had given the BLM new authority, but it was now caught in a national, partisan debate over the legitimacy of federal authority in many areas of society.

6. ECOLOGICAL MANAGEMENT, 1992

When Vice President George H. W. Bush ran for president in 1988, he pledged to be "the environmental president." Like other conservative environmentalists, President Bush supported environmental protection but attacked federal regulation as overbearing. He had promised that environmental protection and economic growth were not mutually exclusive and that under his leadership, both could flourish. This both-and approach was good for BLM, given its multiple-use mandate, but the agency stumbled in a very public way in the Pacific Northwest when the northern spotted owl and ESA essentially shut down logging on federal lands. By the time Bush ran for reelection in 1992, he had shed his environmental president claim, instead condemning ESA as a sword that destroyed American families.

Upon succeeding Bush in 1993, President Bill Clinton promised to resolve the spotted owl crisis, and the BLM and Forest Service worked with other federal agencies on a comprehensive ecosystem management plan for all federal land in the spotted owl's habitat. Given the requirements of the ESA, the compromise plan hardly met environmentalists and industry in the middle. Essentially, it established stringent protections for the owl and other vulnerable species and produced only a trickle of timber from the more than 2.4 million acres of forests known as BLM's O&C land in Oregon.[14]

The Bush administration had inaugurated a decade of new conflict over the public lands. BLM embraced ecosystem management and developed new capacities to manage large ecological systems. It placed greater emphasis on ecological priorities, such as riparian area health in range management. The Clinton administration put many areas of public lands on the map, quite literally, by creating national monuments across the West, which were then incorporated into the National Landscape Conservation System. All these changes were met with a new wave of conservative rebellion often referred to as the War for the West. Unlike the Sagebrush Rebellion a decade earlier, this rebellion was waged almost exclusively by Republicans. And this time, western Republicans had a national, conservative infrastructure of think tanks, foundations, and political advocacy organizations that gave them allies across the country.

The War for the West was really a national struggle over the scope and purpose of the federal government, which in the West naturally entailed federal lands. States' rights remained important, but this time, the national conservative rebellion integrated frustrations over property rights, gun rights, and religious expression rights as well. And in addition to state action, this rebellion was advanced by the County Supremacy Movement—conspiracy-driven militias, politically ascendant gun rights groups, and others that challenged federal authority—making it both a more expansive and a more dangerous rebellion. Though BLM employees had always dealt with threats and intimidation in the course of their work, there is good evidence that threats and risks increased substantially during this period.

7. NEW PARTISAN CHALLENGES, 2009

The next inflection point for the bureau arrived not because the agency changed fundamentally but because it entered a new, and more dangerous, chapter of partisan confusion. In 2009, Congress passed the Omnibus Public Land Management Act, which

among other things created new BLM wilderness areas and codified them in the National Landscape Conservation System (renamed the National Conservation Lands in 2000). The act passed with strong bipartisan support, reflecting the persistent bipartisan interest in outdoor recreation. But 2009 also marked the birth of the Tea Party and its armed wing, the Patriot Movement. The general goal of the Tea Party was pruning government back to its eighteenth-century roots. What is more, it was a populist rebellion, and its members argued that they, rather than the courts, had ultimate say over what the Constitution meant. Over the next decade, the extreme conservative positions and actions of the Tea Party and Patriot Movement became mainstream in the Republican Party.

Right-leaning ideology has increased hostility toward federal agencies, including BLM, and has reignited efforts to dispose of the public lands despite widespread popular opposition. It has produced an even more expansive and public militia movement. These, in turn, contributed to the 2014 standoff in Bunkerville, Nevada, between federal law enforcement officers and supporters of the Bundy family, and two other armed standoffs in Oregon and Montana. In each case, Oath Keepers, Three Percenters, and other militia groups mobilized quickly to thwart federal enforcement of basic land laws. The threat has been compounded by the rise of groups like the Constitutional Sheriffs and Peace Officers Association, whose members assert that as elected county sheriffs, they can nullify any federal or state laws with which they disagree. And it has been compounded by members of Congress who continue to press for BLM to eliminate law enforcement officers or at least disarm its agents.

J. T. SOHR, FLICKR.COM/PHOTOS/BLMOREGON/8555289958/

A BLM wildland fire crew takes a break in Oregon, 2008. Managing fire on the BLM's 245 million acres is becoming more and more challenging due to climate change.

8. TOO EARLY TO TITLE, 2020

BLM is likely at another inflection point. Riding a wave of populist antigovernmentalism, which had grown out of the Tea Party and Patriot Movement, Donald Trump vowed to dismantle the executive agencies. His administration routinely condemned civil servants and promoted conspiracies about a "deep state" that plotted against liberty, and it left agency posts empty or filled them with people in an acting capacity. And Trump's pardons for Oregon ranchers Dwight and Steven Hammond and Maricopa County (Arizona) Sheriff Joe Arpaio signaled that the administration would not support BLM's full legal authority. This created a demoralizing environment in which to work.

Yet 2020 was also a positive inflection point: Congress passed the Great American Outdoors Act with bipartisan support, and Covid, though deadly, swelled the ranks of outdoor recreationists. After all, if you want social distancing, the public lands are an ideal destination. In the midst of deeply polarized politics and public attacks, it is reassuring to see that Americans support at least some aspect of public lands management, and this is confirmed in poll after poll. Indeed, a majority of Americans even support the Biden administration's pledge to protect thirty percent of American lands and waters by 2030 under its so-called 30 x 30 Plan, and with ten percent of the nation's land under its purview, BLM will play a critical role.

But the biggest change for BLM is energy development. Although Biden's temporary moratorium on new oil, gas, and coal leasing was struck down by the courts, a permanent moratorium remains a possibility, portending an uncertain future for BLM's largest program, by revenue. Debate over federal energy development will likely dominate public lands politics for the next several administrations and congresses, but the Biden administration is already planning to reduce the cost of solar development on public lands. Imagine BLM and its public lands with extensive solar and wind farms and no oil, gas, or coal development.

THE NEXT SEVENTY-FIVE YEARS

The Bureau of Land Management has for seventy-five years been responding to changes in public land politics and the western economy. As its 1954 emblem suggests, it focused initially on the orderly disposal of federal land and resources, but over time, it gained new and diverse responsibilities for goals like wilderness preservation and endangered species protection. Its mission has become more comprehensive and more complex, and the current level of bitter partisanship in American politics offers little hope that the agency will be able to resolve the tensions inherent in that mission. The demands that Americans make on the public lands will continue to shift.

BUREAU OF LAND MANAGEMENT

For its diamond anniversary year, BLM leaders invited the public "to reimagine your public lands and the 245 million acres of possibilities they offer from conservation, to recreation, and commercial."

Several issues may provide early signals about upcoming changes. The first is simply the state of American democracy. For much of BLM's history, its managers have found some success in working with communities on compromises in its multiple-use management. But the current partisan vitriol, facilitated by fissiparous media, national interest groups, and large corporations, leaves little space for BLM managers and community members to find common ground. And the problem isn't simply ideological conflict. A growing percentage of Americans seem to accept that violence may be necessary to achieve their political goals, making it all but impossible to build a sense of safety and trust in public land negotiations.[16] Unless these dynamics change, it is very difficult to see how the agency will reduce conflict over the lands it manages.

A second issue is climate change. At the very least, decarbonizing the economy requires reducing fossil fuel development and increasing renewable energy sources like solar, wind, and hydropower. The United States has made progress in reducing carbon emissions primarily by switching from coal to natural gas in the power sector. If the nation can find bipartisan will to go further, the next step is changing land-use priorities. Phasing out the leasing and permitting of federal oil, gas, and coal deposits and permitting solar and wind development on public lands would dramatically alter the agency's budget and the balance of multiple-use management. Such a shift away from carbon-based energy seems likely, but how quickly will it happen and how will it affect the agency and western communities?

The final issue to watch is the role of BLM's new nonprofit entity, the Foundation for America's Public Lands. Congress approved the foundation in 2017 and it was officially launched in January 2022.[17] Modeled after similar foundations that support the National Park Service, the U.S. Forest Service, and the U.S. Fish and Wildlife Service, the new foundation can create partnerships and raise funds in ways that federal agencies cannot. For better and for worse, this creates an entirely new arena in which Americans can influence the direction of public land management by BLM. If this foundation, like the other three, builds stronger conservation support for public land management from environmentalists, hunters, anglers, and local communities, how might this shift the agency's priorities?

Managing ten percent of the nation's land, the agency will always be caught between competing visions for land and resource management. It's safe to predict only that it will continue to face controversy and undergo shifts in its administrative priorities as Republicans and Democrats trade places in the White House.

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NOTES

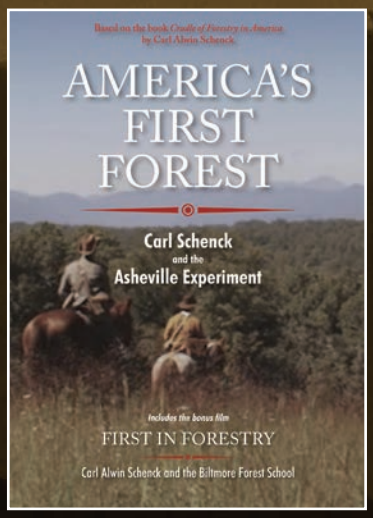
1. Max Fisher, "Stephen K. Bannon's CPAC Comments, Annotated and Explained," *New York Times*, February 24, 2017.
2. Lisa Friedman and Claire O'Neill, "Who Controls Trump's Environmental Policy?" *New York Times*, January 24, 2020.
3. The agency itself reported "more than 80 percent of the employees in affected positions did not relocate." See: Bureau of Land Management, "BLM FY 2022 Budget in Brief" (Washington, DC: Bureau of Land Management 2021), BH-12, at https://www.doi.gov/sites/doi.gov/files/fy2022-bib-bh007.pdf. Interior Secretary Deb Haaland said nearly 90 percent of headquarters staff retired, quit, or left for other jobs. Joshua Parlow, "Bureau of Land Management Headquarters to Return to D.C., Reversing Trump Decision," *Washington Post*, September 17, 2021.
4. "Republican Platform 2016," (Washington: Republican National Committee, 2016). In 2020, the party leadership adopted the 2016 platform without changes. "Preamble," https://prod-static.gop.com/media/Resolution_Platform_2020.pdf.
5. Lisa Friedman, "The Bureau of Land Management Is Moving Back to Washington," *New York Times*, September, 17, 2021.
6. "Federal Land Management Agencies: Additional Actions Needed to Address Facility Security Assessment Requirements" (Washington, DC: Government Accountability Office, 2019), https://www.gao.gov/products/gao-19-643.
7. Paul Hirt, *A Conspiracy of Optimism: Management of the National Forests since World War Two* (Lincoln: University of Nebraska Press, 1994).
8. I have kept notes sparse for space. Unless otherwise cited, the information in this essay comes from my publications: *The Nation's Largest Landlord: The Bureau of Land Management in the American West* (Lawrence: University Press of Kansas, 2009), and *This Land Is My Land: Rebellion in the West* (New York: Oxford University Press, 2020).
9. Quote in Skillen, *Nation's Largest Landlord*, 50.
10. For example, Marion Clawson, "The Crisis in Outdoor Recreation," *American Forests* 65, no. 3 (1959), 22–31, 40–41; and "The Crisis in Outdoor Recreation, Part II," *American Forests* 65, no. 4 (1959), 28–35, 61–62.
11. Skillen, *Nation's Largest Landlord*, 89.
12. U.S. Department of the Interior, Bureau of Land Management, ed., *The Federal Land Policy and Management Act of 1976, As Amended* (Washington, DC: U.S. Department of the Interior, Bureau of Land Management, Office of Public Affairs), 1, available at: https://www.blm.gov/sites/blm.gov/files/documents/files/FLPMA2016.pdf.
13. Inaugural Address, January 20, 1981, *The Public Papers of President Ronald Reagan*, Ronald Reagan Presidential Library, https://www.reaganlibrary.gov/ research/ speeches/inaugural-address-january-20-1981.
14. Oregon and California Railroad Revested Lands, known as the O&C lands, lie in a checkerboard pattern through eighteen counties of western Oregon. These lands are a large part of the critical habitat of the northern spotted owl.
15. See, for example, Lori Weigel and Dave Metz, "2021 Survey of the Attitudes of Voters in Eight Western States," Colorado College State of the Rockies Project (Colorado Springs, 2021); Morning Consult, National Tracking Poll #210541 (Washington, DC, 2021).
16. Aaron Blake, "Nearly 4 in 10 Who Say Election Was Stolen from Trump Say Violence Might Be Needed to Save America," *Washington Post*, November 1, 2021.
17. U.S. Department of the Interior, "Interior Department Announces Historic Launch of the Foundation for America's Public Lands," Press Release, January 19, 2022, https://www.doi.gov/pressreleases/interior-department-announces-historic-launch-foundation-americas-public-lands.

"I soon realized that German forestry was as impossible of success in the United States as was Indian or Swedish forestry. A brand-new sort of forestry was needed."

AMERICA'S FIRST FOREST

Carl Schenck & the Asheville Experiment

In 1895, at the magnificent Biltmore Estate nestled in North Carolina's Blue Ridge Mountains, German forester Carl Alwin Schenck began restoring the land using the "new" science of forestry. Then he established the Biltmore Forest School, the nation's first. Using a log cabin for their school house and George Vanderbilt's Pisgah Forest as their outdoor classroom, Schenck taught "his boys" how to manage a forest—and demonstrated how America could conserve *all* its forests. Based on Schenck's memoir *Cradle of Forestry in America*, the Emmy Award–winning documentary film *America's First Forest* tells the story of the birth of the American conservation movement through the efforts of one of its founders. The DVD includes this film and the 28-minute featurette *First in Forestry: Carl Alwin Schenck and the Biltmore Forest School*, adapted from *America's First Forest* and is ideal for classroom use.



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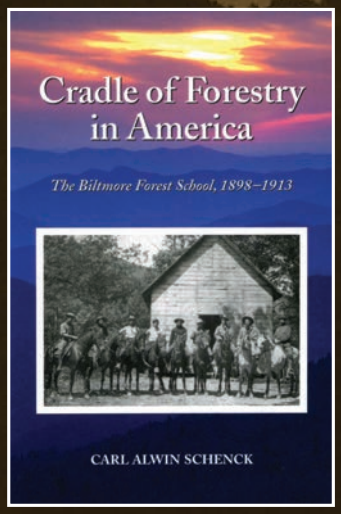

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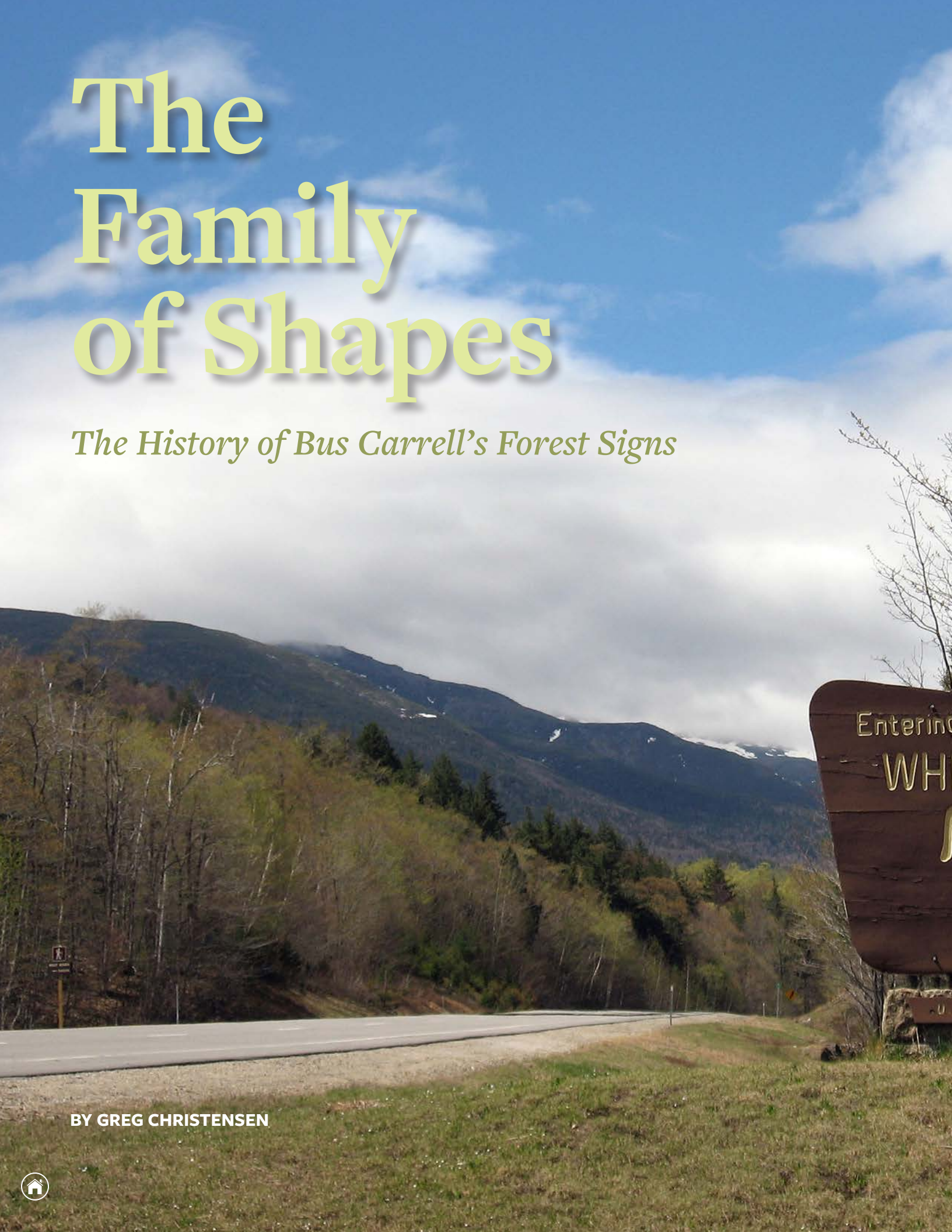
The Family of Shapes

The History of Bus Carrell's Forest Signs



BY GREG CHRISTENSEN

JAMES G. LEWIS

You know the shape of the sign. But do you know the history behind its simple design?

Government agencies aren't in the business of design. They're not set up to make things beautiful. Their priorities are efficiency and order, not typeface and color. The signs that identify government buildings and offices, and even their letterhead designs, vary from agency to agency, even within departments. Highway and speed limit postings, though uniform, are purely utilitarian. So it's remarkable that the U.S. Forest Service, a Department of Agriculture agency in charge of managing 193 million acres, has for decades produced signs that are not only recognizable but also appealing: people pull over, jump out of the car, and take a picture of their kids standing next to them.

Drive into any of America's national forests and you'll see them: large wooden trapezoids painted brown and cream, usually set on a low pedestal of stone. The shape is reminiscent of 1960s diner architecture, strikingly out of place in the forest. The colors are so neutral they border on nondescript. The letters are like a tween's refined attempt at cursive. The signs are flat-out unusual and yet instantly recognizable. They simultaneously demand our attention and defer to their surroundings. They're always on the side of the road, never hanging overhead in a gateway arch that could obscure a view. They're not cookie-cutter like highway or traffic signs. But their consistent coloring, font styles,

Designed in the 1960s to be both legible and eye-catching from a speeding car, the rounded trapezoidal shape is both of its time and timeless.

and placement make them kin. In fact, their creator referred to them as a "Family of Shapes." He had no formal design training, just a deep love for the forest. He was a ranger named Virgil Carrell, but everyone called him Bus.

"Bus" is one of those nicknames with a lost origin story. Not even his daughter Caroline, now in her seventies, can figure it out. "His mother called him Bus when he was young. Maybe because he was short? I really don't know."

He did look more like a school bus driver than a forest ranger. He was short and balding—even in his thirties. He wore glasses, and when required to dress formally, he showed a penchant for bowties. In a biopic, Bus might have been played by a young Wallace Shawn. But he had a palpable and contagious energy. Newspaper reporters described him as "genial" and "radiating pride and zeal."

Caroline remembers that zeal manifesting itself on hikes with her dad through the dense Douglas fir and ponderosa pine forests of Oregon. "Dad would call out the biological names of plants," she said. "He taught me north, east, south, west, and I never got lost. I was about four years old."[1]

Born August 8, 1914, Bus grew up in the Pacific Northwest, with all the outdoor values and sensibilities still found in the region. He was the son of railroaders—his father was an engineer and his mother a dispatcher tapping out telegraph messages to incoming trains. By 17, Bus was managing a sporting goods company in Seattle during the week and spending weekends maintaining trails in the Wenatchee National Forest. He was so drawn to the outdoors and the work he could do there, he enrolled in the University of Washington's College of Forestry while continuing his work in the Wenatchee as a forest guard and laborer. He graduated at 23 and continued working for the U.S. Forest Service as he had since 1931, finally receiving appointment as a forester in 1942. He was promoted to district ranger on the Mt. Hood National Forest in 1946.

THE BEGINNING

Estacada, Oregon, is a small town about halfway between Portland and the base of Mt. Hood. What began as a camp of workers building a hydroelectric dam on the Clackamas River became a base for lumberjacks working in a nearby logging camp. Once surrounded by meadows and dirt roads, Estacada became home to the Carrells when Bus was offered the position of district ranger for Mt. Hood's Clackamas River area. He found himself in charge of planning and executing the largest timber harvest of any ranger district in the United States.

Suburban communities were proliferating in postwar America, and national forests became the primary source for the expanding lumber industry. Meeting the increased demand for timber while protecting and replenishing the forests he loved was a balancing act for Bus. He was managing more than a quarter-million acres of mostly virgin forest that was producing enough lumber each year to build 8,400 five-room houses. Bus was also responsible for organizing fire prevention teams for a forest mostly devoid of large roads that could handle firetrucks. With only narrow trails carved into the forest, he oversaw the training of firefighters who could reach the backcountry on pack horses.

As part of his duties, Bus supervised grazing, search-and-rescue operations, and campground cleanup for the 22,000 campers and hikers who visited annually. With a summer staff of 45 that dropped to 24 in the winter, he became a master delegator. And he was so good at his job that within three years, he was named Outstanding Forest Ranger of the Year.

The honor came from the USDA secretary, a Coloradan named Charles

FOREST HISTORY SOCIETY PHOTO 0512_187

FOREST HISTORY SOCIETY PHOTO R9_351302


FOREST HISTORY SOCIETY PHOTO R9_351305

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FOREST HISTORY SOCIETY PHOTO R9_495655

The Forest Service used a variety of shapes, designs, and materials in its signage until Carrell's team established a set of standards. Until then, signs often lacked legibility and concision.

Brannon. Brannon invited Bus and his wife to take a cross-country train trip to accept the award in the nation's capital, the first time the Carrells had left the West. A photo of the ceremony shows Bus on stage at the Sylvan Theater in the shadow of the Washington Monument accepting the award from Secretary Brannon. He's wearing a double-breasted suit with wide lapels—clothing about as far removed from a ranger's uniform as Washington was from Estacada.

Perhaps the recognition gave Bus's career a little boost. As for so many other foresters, moving up the organizational ladder meant spending several years moving around the American West. At the Region 6 headquarters in Portland, Bus helped launch a forest education program that became the standard for national districts. From the Region 3 headquarters in Denver, he directed timber management for national forests in three states. Being named supervisor of the San Juan National Forest required moving the family to Durango, Colorado. And in January 1960, Bus was assigned to a position in the national headquarters. When the Carrells left the forests and mountains of the West for the monuments and meeting rooms of Washington, it was more than a drastic change of scenery for the family. It was an assignment unlike any Bus had previously encountered, or had even trained for.

THE NATURALIST AND THE DESIGNER

In the 1950s and 1960s, Americans began road-tripping. As more and more families began to camp, hike, fish, and boat, both the National Park Service and the Forest Service expanded and improved their recreation facilities to meet that demand. Then as now, the general public confused national forests with national parks. But to the agencies, which operate under different government agencies and exist for very different purposes, the distinction between a national forest and a national park mattered enormously. Wanting to differentiate between the two in the minds of visitors, the Forest Service's Division of Engineering was assigned a special project to "review and modernize the Forest Service's sign program." Equipped with zero design training but ample, well-honed management skills, Bus was named to lead the effort.

Design work that could shape public opinion was not a new concept to the Forest Service. Fifteen years earlier, the agency had launched a fire prevention campaign and assigned a young artist named Rudy Wendelin to help. Rudy, a versatile talent who started in the Forest Service around the same time as Bus, transformed a new character named Smokey—an anthropomorphic bear in a ranger's hat—into an icon. Wendelin would serve as Smokey's "caretaker" for three decades, creating hundreds of Smokey illustrations for the Forest Service between 1946 and 1973.[2] He also did other graphics and design work for the agency. When Bus was put in charge of the new signage project in October 1961, Wendelin was one of the first to join his team. Bus later described him as his right-hand man.

For some bureaucrats, creating a consistent look for signage would be a simple matter of coordinating color and font that could be read at high speed. A government agency that prioritized efficiency of resources over design might well have decided that "Welcome to [name goes here] National Forest" should be printed in standard Helvetica. White letters against a dark background (whatever color was calculated to be the most cost-efficient paint) would have been an easy solution, and easy to mass produce.

I spoke with Charles Spencer Anderson, a world-renowned designer, about all this. The work of the Minneapolis-based design firm that

bears his name has been exhibited in museums around the world and examples reside in the permanent collection of Museum of Modern Art in New York. When I asked his opinion of the typical government sign, he declared he abhors that approach. When asked about what Bus and his team created, he said, "Whoever designed these signs really gave a damn."[3] Familiar with the signs but not their creators, Anderson said, "I don't know if they had a sense of history when they designed these things, or if they knew how long they might be around, but it appears they understood the gravity of the assignment."

That burden of responsibility might have pushed others into worry and second-guessing their decisions. But for men who loved the forest, the task was an opportunity to do what any outdoor-loving group with a loose mandate and government financial backing would do. They took a road trip.

Bus, Wendelin, and the two landscape architects assigned to the team visited parks and forests, noting the designs of signs and markers, where they were placed, and what materials were used. They discovered signs that served as grand gateways and metallic eyesores on the roadside. Some were well designed; most weren't. They found monosyllabic signs bearing only the name of the location, cluttered messes where only the Forest Service shield was legible, or storied histories carved into wooden slats. What they didn't find was consistency.

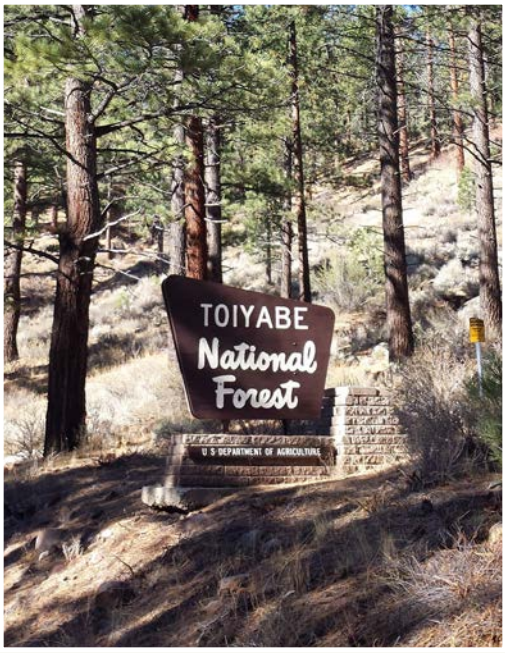
Bus summed up their findings in an essay titled "Signs to Complement Natural Beauty." Writing in the first person, his style is whimsical and familiar. He's your buddy and your slightly overeager tour director. He opens with what reads like a conversation between two old friends: "For a quick look at the signs of our day, let's locate our credit cards, jump into the family car, and take off to see America first. On our way, allow me to point out some things about signs you might like to know."[4] Two aspects of Bus's personality become apparent in the essay: Bus the Naturalist and Bus the Designer.

Bus the Naturalist is concerned with how the signs affect the landscape. In his essay, he expresses gratitude that the Highway Beautification Act of 1965 limits the placement of signs on any road constructed with federal aid. He suggests that the best signs blend naturally with the environment. He expresses the need to have "competent stewardship over our priceless natural resources." Effective signs "tell us the rules" of an area—fire prevention, for example. But rather than simply state that effective signs can help control forest fires, Bus the Naturalist takes the reader aside to explain that forest fires cause not only scars on the land but "also loss of payrolls, recreation pleasures, fish and game, and loss of the soil, which in turn makes scouring, muddy, low-quality waters." It's a digression only someone with his outdoor values and firsthand experience would instinctively make.

Bus the Designer is punctilious, as all good designers are. The following quotes from his essay reveal his understanding of form and function and reflect the approach that led to today's national forest signs:

- "A sign is good when its function is achieved without calling attention to itself."
- "The text must be readable, brief, and above all, accurate . . . The text should develop no more than one topic and have a warm tone."
- "It is wise to use the best materials available at a reasonable cost. To keep costs low, signs should be uniformly standard and simple. A sign does not have to be the gaudiest, the biggest, and the most colorful to be the best one."

JAMES G. LEWIS



COURTESY OF THE AUTHOR

JAMES G. LEWIS

BRIAN TRUSKEY, FLICKR

JAMES G. LEWIS

COURTESY OF THE AUTHOR

Carrell's signs emphasize the location's name instead of that of the Forest Service's. In addition, having one style designated for a national forest or grassland only and other styles for other units subtly conveys information at a glance.

- "Signs and their supports need to be proportionate, well balanced, and constructed with materials which can stand the test of time."
- "Wood has proved its worth for many years. It blends naturally with the rural environment. It is attractive, and this must be a component of all signs. It is available, easy to shape, fit, preserve, paint, color, and maintain. Wood is also inexpensive. But it must be used right."[5]

Bus the Naturalist and Bus the Designer collaborated to create the Family of Shapes we recognize today.

DESIGNING "MINI-MONUMENTS"

Charles Spencer Anderson describes Bus's national forest signs as "mini-monuments." The rounded trapezoid shape and script font are typical of 1960s design, a reflection of a postwar, prosperous country in the pursuit of happiness. Born from midcentury American style, they feel tastefully retro today. The magic of Bus's design is that it feels both natural in any decade and at home in the forest.

Anderson explains the dichotomy this way: "The materials let them blend into the environment, but their design helps them be noticed. So, they do two things at once, which is really a tricky balance. It's a contrast between the natural materials and then this weird shape that comes out of the blue. There are a lot of contradictions going on here, but it's incredible how well they work."

Bus's Family of Shapes was implemented in the mid-1960s and has since been used to mark not just the entrances and boundaries of national forests and national grasslands but also the hiking trails, ranger stations, and scenic overlooks within them. It's notable that the signs do not all include the equally iconic Forest Service shield. But Bus's brown trapezoid is so iconic, it's even aped on stickers, key chains, and other souvenirs in recreational havens like Lake Tahoe and Jackson

COURTESY OF BUD UNRUH

In 2003, Bus Carrell stood beside a sign identifying the place where his career began.

Hole—not to signify that they're official Forest Service merchandise (they aren't) but as a memento of being outdoors. The Family of Shapes has come to symbolize not just Forest Service boundaries but recreation in nature itself.

Today, the design and use of the Family of Shapes are carefully prescribed in a lengthy and doctrinaire document titled *Sign and Poster Guidelines for the Forest Service*. More than 600 pages long, it outlines everything from sign maintenance and repairs (for pollen and fungus "wash the surface with a 3- to 5-percent sodium hypochlorite solution") to the numerically correct hexadecimal colors (the yellow-cream is #23695, the brown is #20059).[6] The Family of Shapes is used to designate America's 154 national forests and grasslands, as well as features like national scenic rivers and national volcanic monuments—all places under the Forest Service's aegis. Each marker still identifies the surrounding area in script known only as "national standard logotype." Although Smokey Bear makes an appearance in the document (his likeness stands next to fire condition rating signs that alert travelers to that day's danger level), neither Rudy Wendelin nor Bus Carrell is mentioned.[7]

BACK TO THE BEGINNING

In 2003, Bus traveled back to Estacada, where he began his work as a forest ranger. His protégée Bud Unruh took a photograph that shows Bus standing next to the Mt. Hood National Forest entrance sign. The photograph is not famous but it is poignant. The brown-and-cream sign would not have existed when Bus worked there. It shows both his origins in the Forest Service and his greatest contribution to it.

"Good design is about making something that adds richness to people's lives," says Anderson. "If you removed these incredible signs with the stone and the weird shape and the hand-routered type and just put up a cheap highway sign or a computer-printed billboard, the contrast would be pretty stark. Thank God they don't look like that. There are too many things that look that way now."[8]

When Bus died in 2014, at age 100, his passing was noted not just in his adopted hometown of Florence, Arizona, but also in the communities in the national forests of the Pacific Northwest and Colorado where he had worked.

Bus's grandchildren are aware of their legacy. "We tell them to place their hands over their hearts each time they pass one of Grandpa's signs," his daughter Caroline says.[9] But Bus's legacy is more than familial. It's cultural. Every year, hundreds of thousands of Americans road-tripping across America enter national forests. And it's no small number that stop the car and tell the kids to go stand by the trapezoid emblazoned with the national forest's name. It's a family picture with the Family of Shapes.

Greg Christensen is a writer and advertising creative director based in Dallas, Texas. He began researching Bus Carrell after a drive through Targhee National Forest and has since helped design thanksbus.com to increase awareness of Bus Carrell's legacy.

NOTES

1. C. J. Dennison, interview with the author, April 2020.
2. James G. Lewis, "Smokey Bear: From Idea to Icon," *Forest History Today*, Spring/Fall 2018: 14.
3. Charles Spencer Anderson, interview with the author, March 2020.
4. Virgil R. "Bus" Carrell, "Signs to Complement Natural Beauty," in *Yearbook of Agriculture 1967* (Washington, DC: Government Printing Office, 1967), 253.
5. Carrell, "Signs to Complement Natural Beauty," 253–56.
6. Engineering Staff, *Sign and Poster Guidelines for the Forest Service* (Washington, DC: USDA Forest Service, 2013), 16-3.
7. Engineering Staff, *Sign and Poster Guidelines*, 10C-1–10C-3.
8. Anderson, interview.
9. Dennison, interview.

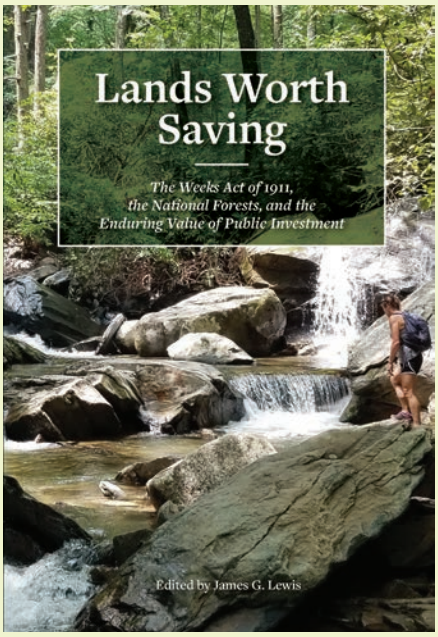
Lands Worth Saving

James G. Lewis, ed.

In 1911, Congress passed the Weeks Act, one of the most transformative conservation laws in U.S. history. Designed to establish national forests in the East, the Weeks Act has helped restore more than 24 million acres around the country. The law also provided a cooperative agreement between the U.S. Forest Service, the states, and private landowners to fight forest fires. This framework is also used today for combating climate change, protecting endangered species, and managing urban forests.

Today, with America's forests now under threat from invasive plants, insects, and diseases and from human impact, the Weeks Act and the lands it has saved face an uncertain future. In this collection, drawn from *Forest History Today* and newly updated, leading historians, conservationists, and legal experts explore the history, impact, and future of natural resource management under the law. By examining what the Weeks Act has done for America, they can help us better understand what's at stake for the nation's public and private forests in the century to come.

James G. Lewis is the author of *The Forest Service and the Greatest Good: A Centennial History* and has served as editor of *Forest History Today* since 2007.



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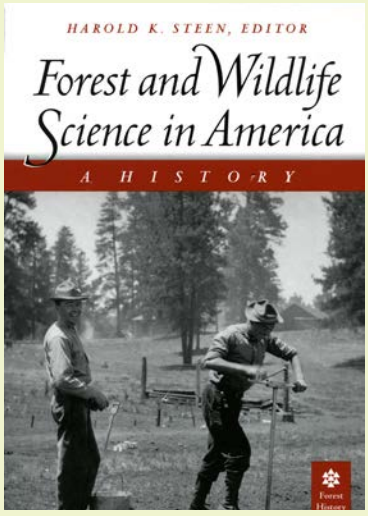

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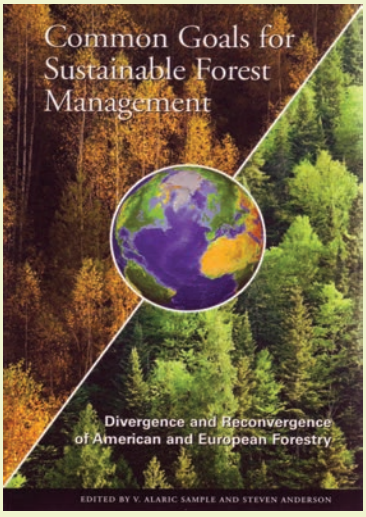

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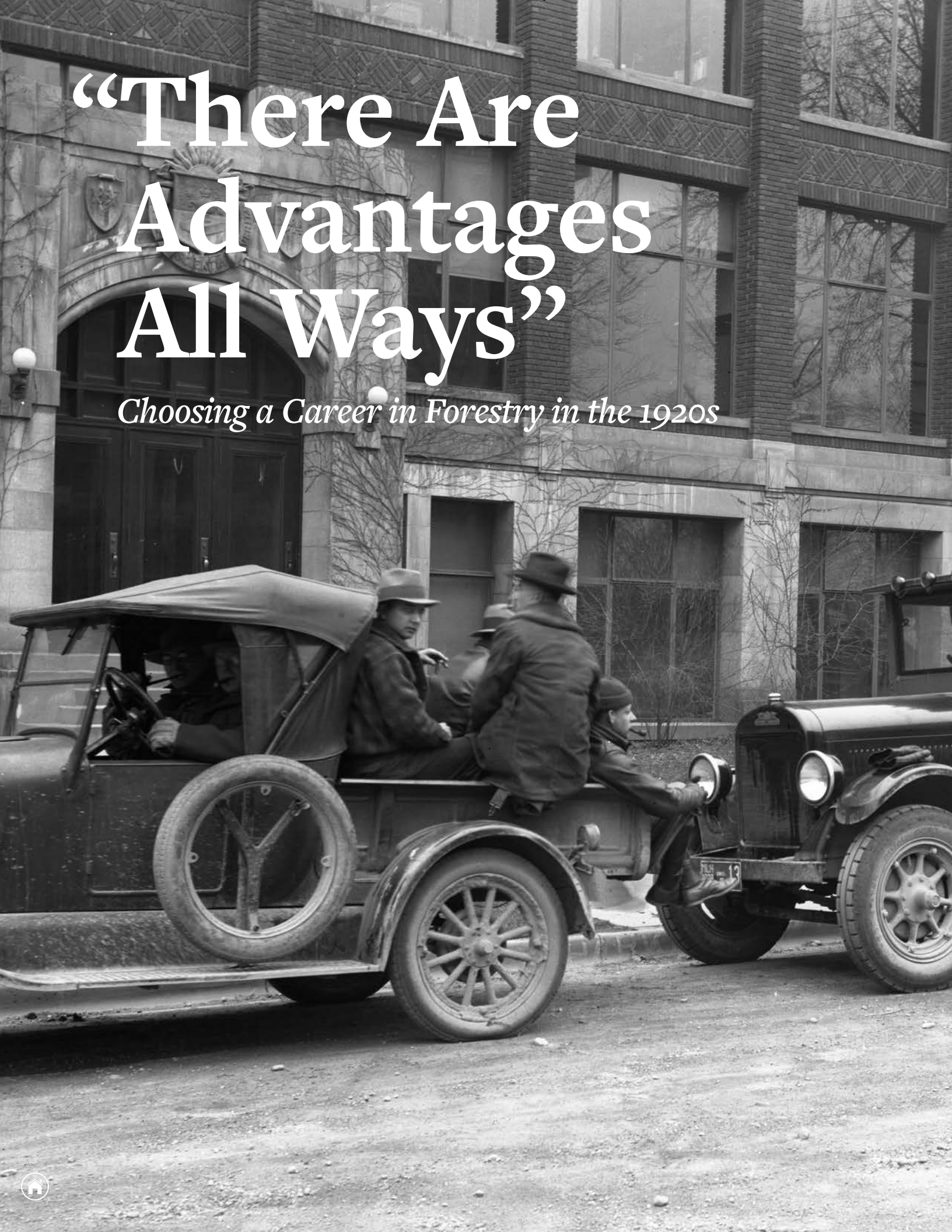

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Robert Winters' forestry career began at the University of Michigan in 1920, around when this photo was taken. It is believed he is the one in the truck without a hat on.

BY MARGARET W. ANDREWS

"Two roads diverged in a yellow wood,
And sorry I could not travel both..."
—Robert Frost

In June 1925, Robert K. Winters, twenty-three years old and a newly minted master of science in forestry from the University of Michigan, stepped off the train in Wenatchee, Washington, to start his probationary year in the U.S. Forest Service. For a diamond in the rough born into a working-class family, forestry offered the allure of a secure, stable life. Forty-two years later, he retired from the Forest Service in Washington, D.C., as the director of the Division of International Forestry, with many accolades and publication credits to his name.[1] However, when he arrived in the Pacific Northwest, a career in the Forest Service was not a foregone conclusion. Over the next five years, he considered an academic career path before firmly committing to the agency. After making that decision, he never looked back.

This article is based mainly on the 1925–1926 letters my father, Robert K. Winters, wrote at least weekly from Washington and Oregon. Most letters went to his birth family, but several are to Ellura Harvey, his college sweetheart and future wife, all of whom were in Michigan at the time. Through these accounts, we see the maturation of their author as he tries to find his way in the Forest Service, then only two years older than Winters himself.

LIVING THE RUGGED LIFE

Bob Winters's initial job in Wenatchee was as Forest Service

liaison with the Cascade Lumber Company, which had bought several small patches of government timber. His task was to see that the trees to be sold from these patches were all marked, that the marked trees were all cut, and that no unmarked trees were cut. He had to scale the logs coming from the government land and inspect to see that brush was properly piled for burning.[2] He confesses in his diary that he may have spoken rather lightly of scaling logs to family members who would have been unfamiliar with forestry:

> The term [scaling] means determining the number of feet of lumber a log will yield. . . . Most logs are scaled several times. Where the various steps of logging are done by "piece work" the logs that each pair of fallers falls have to be scaled in order to know how much they have earned. The same is true for all the other steps. The "skidders" require a special scaling, as do the "loaders" . . . The scaler is . . . of some consequence. If he is not fair and impartial the men become very indignant.[3]

While working as the Cascade Lumber liaison, Winters lived a rugged life, and he seemed proud of doing the heavy physical work that was part of his job—walking miles and climbing steep slopes. "I worked pretty hard the last couple of days tho. I have to go and inspect areas to see if the loggers piled their brush properly, and cut down the dead snags. Inspection sounds easy, but climbing over the hills to do the inspecting is *not* easy."[4]

The government timber he was overseeing was distributed among three camps; he lived in one and traveled to the others, each about four miles distant.[5] He told his family, "I spend my time running over here to see if they are living up to the specifications here. Then I scale logs over there, and go inspecting somewhere else. It is interesting enough in a way, but I am not terribly enthusiastic about it."[6] Although the camp he lived in had two big bunkhouses, holding about forty men each, as a Forest Service man he lived on the hillside above the camp "in a 7×7 tent. Still there is room; it is just cozy. . . . At the side of my house I have a washstand, and at one corner hangs a heavy canvas bag that holds drinking water carried from the spring."[7]

His physical separation from the loggers was mirrored by social separation. "[At] all the other camps I have been in [for previous summer jobs] there have been others of like interests to talk to or do things with. Here there are so few, and those few so different in taste that it makes it hard."[8] And "I like to come to know people, and like to be well liked; it seems to give a feeling of usefulness, as tho you were doing some good in the world."[9]

More serious than loneliness was boredom. He found that his job did not keep him busy enough. "This last week has been pretty unsatisfactory too. I hate to have to try and figure out something to put in my time at. I can line up work for tomorrow & next day, but after that I don't know what I might do to put in my time. Some folks would thrive on a job like that, but not me."[10]

In late July 1925, Winters complained of blisters on both feet; a month later, the second toe on his right foot was swollen and sufficiently painful to keep him awake at night.[11] The doctor who came weekly to the camp said it was a sprain and told him to stay off it as much as possible.[12] A few days later, fearing permanent injury, Winters went into Cle Elum, Washington, to see another doctor and have an X-ray taken. He was again told it was a strain and advised to stay absolutely off that foot. He proceeded to do his scaling on crutches.[13] He went as far as Wenatchee to see another doctor and get another X-ray and received another diagnosis: an abscess. There was more rest and then discouragement. "I truly don't know what is the matter, and I don't believe the Doctor does either."[14]

FROM WENATCHEE TO WHITMAN

His injury brought direct experience with the business side of the Forest Service. In September 1925, he was moved to the Wenatchee headquarters so that he could stay off his injured foot.[15] There he was set to "cataloging data from files, and entering property transfers on cards, just getting an idea of the office routine."[16] The office staff consisted of the forest supervisor, whom he found "grouchy most of the time"[17]; the forest examiner, who also served as acting supervisor; the head clerk, who was a wonder and knew "the red tape of the office and the records of all kinds by heart"; and two stenographers.[18]

Two events in September 1925 pleased him. He learned that he had been proposed for membership in the Society of American Foresters. "I received such a thrill over it. . . . I wonder who proposed my name. I am not elected by a long ways, but even to be proposed so soon is quite gratifying."[19] A few days later he learned he would be transferred to the Whitman National Forest—headquartered in Baker, Oregon—at the beginning of October to spend the rest of his probationary year and get additional timber sale experience. "I like the move in a way because it will give me a chance to see more country, and get a wider experience. The Whitman Forest is one of the best ones in the whole service from the standpoint of timber sale work."[20]

He was also pleased to discover some advantages of government employment. "The beauty of it is that my expenses are paid on this move.

U.S. FOREST SERVICE PHOTO #340670, GERALD W. WILLIAMS COLLECTION, OREGON STATE UNIVERSITY SPECIAL COLLECTIONS

Winters was introduced to research fieldwork at the Blue Mountain Ranger Station, seen here in 1935.

The time I lost when the doctor told me to stay at home is taken from my 15 days of sick leave, so I do not lose any time, and the Gov't is going to pay my doctor bill, even for my expenses coming into Wenatchee from Casland" to see the doctor.[21]

He liked the Whitman National Forest immediately. "The timber here is essentially a forester's paradise—open stands of pure yellow pine that really are park-like—No underbrush and few . . . steep slopes . . . makes hiking simple." Moreover, on his arrival he was introduced to research fieldwork at the Blue Mountain Ranger Station, his intermittent base, "counting & recording seedlings on experimental plots that were laid out in 1914, & have to be gone over each year to check up on the number of seedlings that have started." This was temporary, however. His long-term assignment in the Whitman Forest was to work "on a study of 40,000 acres of cutover land. . . . It will be very similar to cruising. We go 8 times thru a section and record all trees & reproduction on a strip 66 feet wide. Then we map what we find & record the bigger trees on a record sheet."[22] This was the sort of forestry he wanted to do. "I know I am going to like the work much better than scaling."[23]

The research contrasted with his initial Forest Service experience, which he characterized as mere business:

> From what I see these [Forest Service] fellows just run around, mostly tending to business. Handling sales, issuing permits etc. I would like to get into something where I can see that I am doing something that is forestry, not *business*.[24]

There certainly is a great difference between theory and practice. Perhaps some day the difference will not be so great. Most of the theory is in the higher offices and the practice is in the hands of nontechnical men. When they get schoolmen who understand the aims of forestry in the Ranger positions perhaps they will get more true practice of forestry.[25]

Further to his interest in scientific forestry, it is notable that, within a month of his joining the Forest Service, he had started a silviculture research project of his own. "This afternoon I started to gather cones. You see I hope to run some experiments next winter, & am collecting seed now. I managed to get a hat full of cones. I will put them in the sun today & open & then catch the seed that fall out."[26]

Day to day, he still performed a variety of tasks on the Whitman Forest, but when there had been rain, "everything else stops & everyone goes out to burn [brush]." He was taught "the art of brush burning, as we are supposed to supervise, but I have been working with a kerosene torch like a good fellow."[27] There was also marking of trees for the next season's cutting.[28] He continued to hone his scaling skills and was

pleased when he and a fellow scaler were able to agree "within .09% of each other."[29] He was much busier on the Whitman than when working from the Wenatchee headquarters; in one day, he scaled logs for eighteen flatcars, as many as in a two-week period at his previous location.[30] He also had more contact with his superiors—some of whom he found more congenial than those in Wenatchee.[31]

He met R. H. Westveld, a Forest Service silviculturist from the Pacific Northwest Experiment Station in Portland.[32] Westveld's description of his work at the station reinforced Winters's interest in research work and also suggested that emphasis on science differed within the agency. "I became real enthusiastic. I may have to wait a while, . . . Westveld was in the Service 2 years before he was appointed to the Exp. Sta."[33] Three weeks later, he wrote, "The new Calif. Sta. probably will be started next year. Should I try for that? . . . Or should I try to get transferred to the eastern country. More true forestry is practiced there than there is out here, and they are doing more in the way of planting & botanical experimental work."[34] Winters resolved to speak to his supervisor about "initiating action for my transfer to Exp. Sta. work."[35] And after thinking about the implications for a few weeks, he did so.[36]

It is clear that scientific forestry, which viewed timber as a product to be harvested and conserved and required knowledge of the quantity and type of forest products, the rate of forest reproduction, and appropriate methods of protection and harvesting, figured prominently in his career expectations. His university training had prepared him for such work, and since the Forest Service (at least in its higher echelons) also championed this, a career in the agency seemed appropriate.[37]

TO TEACH OR NOT TO TEACH

An alternative career path, in academia, appeared in July 1925, a mere few weeks after his arrival in Wenatchee and even before his official swearing in to the Forest Service.

> Thursday I received . . . a rather unexpected letter from the Washington State College. It seems that they are looking for a man to take charge of a nursery for them, and also do some teaching if necessary. Somehow they got my name, and wrote to find out if I would be interested in the job. This is not an offer. They probably sent out several letters like mine, and will pick the most likely one to offer the job to. The largest salary they can pay to start with is $1800 per yr., with one month's vacation. The college is located at Pullman, a short distance from Spokane. I understand it is a nice little town.[38]

Winters prudently did not decline this opportunity outright: "I wrote them a letter, giving my history and qualifications and references."[39] He was, however, far from turning to academia as a principal career focus.

> I am going to use this half offer and the offer, if one comes[,] to good advantage here. I wrote the Supervisor a letter stating that the college had written me that they wanted a man, and asked him if it would be possible to go to Pullman for a few days to look things over, providing it seemed advisable. I do not expect to make a trip to Pullman, as it would cost around $20 I expect, but I took that way of letting him know that perhaps I could get a job elsewhere. Maybe it will help boost me up [the Forest Service ladder] a bit faster.[40]

In fact, he was uncertain about career plans. A few days later, he wrote,

> As I thought about it today I don't know but I might take it if [the college] should offer it to me. A lot would depend upon what the future prospects might be, but I might consider it seriously. . . .
>
> In a college you usually can do some outside work in whatever line you are interested. I like this idea of nursery work and reforestation. There will be more of that needed as the years go on. Handling a nursery will be practical experience along a line that will help me to be able to teach silviculture, in which I am sure interested.[41]

However, in the same letter he wrote with enthusiasm that his supervising ranger commended a fire plan he had devised and that he had likely stood sixth in the nationwide qualifying exam for a Forest Service appointment.[42] In the event, he decided to get on with his present placement and wait to see whether he got a firm offer from Washington State College.[43]

Thus, later in 1925 he was still considering university teaching, for which he could consider his Forest Service experience as preparation. As he wrote to his mother, "I am not so sure but that a teaching job offers the best solution. By nature I am more of a student, and like to learn things. . . . If I come east & see some of that country I would be broadened, & better qualified for a teaching job in a few more years."[44] He knew of a professor who was said to have been held back professionally for want of field experience.[45]

Winters's consideration of careers was influenced by his mother, a long-time confidante and adviser. As he wrote to her in October 1925,

> All of these things I would like help on; I wish I could come home and talk them over and get encouragement. . . . Think things over, please, and tell me what you think should be done in the several cases. . . . There are advantages all ways, I suppose, and you see how inadequate and unsatisfactory paper discussions are. You don't wonder that it appears to be worth a considerable expense in order to talk things over with Ellura, for really, next to myself she is most concerned."[46]

Ellura Harvey was the woman to whom he had recently become engaged. Her importance in his life naturally influenced his career considerations very directly: would she do well as a Forest Service wife? He encountered some women who seemed to flourish as wives of men assigned to jobs in the field. "Mrs. Furst [who was living at a ranger station with her husband] was out with 'hobbed' boots, knickers, middy, tallying the seedlings in a note book. She could spy the tiny one-inch pines in the grass as well as anyone."[47] On the other hand, he saw other women in the field who were unhappy away from town life. The wife of a lumberjack had told him, "It would not be so bad if I could see someone once in a while, but to be alone with 3 small children all day is pretty lonesome for me."[48]

Winters considered that working at the experiment station "might not be so bad, for Ellura could go along, and she would enjoy it. Westveld, the Exp. Sta. man that was here, says his brother's wife takes a temporary appointment in the summer & helps her husband, receiving $90 per month & expenses."[49] When asked about living in the West, Ellura was "perfectly wonderful; she is willing to come anywhere, but she doesn't know what it means to be way out here, and alone, as I do. Willingness to come is one thing, but happiness and contentment after getting here is another."[50] He maintained his opinion that "Experiment Station work is the worst [assignment] as far as being home is concerned. Away about 7 months of the year & home about 5. The first few years that might not be so bad, . . . but not permanently."[51] He concluded it was not "wise to bring a girl into the 'sticks' for other than vacations."[52]

Bob and Ellura shared an active Methodist faith but differed in class background. She came from a comfortable middle-class home in a small Michigan town where her father was a leading attorney and her mother a prominent hostess.[53] Ellura had great social poise and confidence; Bob, although a bright and industrious young man, lacked these. He came from a working-class family that often struggled financially. His father was barely literate and worked as a manual laborer. His mother had a public-school education and had taught school. She was fiercely ambitious for her three sons, giving Bob, the eldest, as broad a cultural experience as she could. The family moved from Holland, Michigan, to Ann Arbor, home of the University of Michigan, when he was of university age. She took in roomers while he worked his way through university by means of manual jobs.[54] To start his career out west in the Forest Service, he had to borrow money for the trip from his brother, mother, and grandmother.[55]

The loneliness and boredom mentioned above may have contributed to the bouts of what Winters called "homesickness" that he experienced from time to time. He had spent a summer in the forests of California, earning money for his university expenses, so the shock of wilderness life was unlikely to be the cause. He believed one bout was caused by the departure of a Forest Service colleague, another by regret over missing his university homecoming celebrations.[56] His mother suggested that a very hard year at university was responsible for an early episode.[57] It is not clear exactly to what she was referring, but given his academic work, remunerative work, and courting of Ellura, he had certainly been stretched. Both his mother and Ellura wrote encouraging letters in response to what he called his "sob" letters. He replied to Ellura, "You are so encouraging, and try to cheer me up. . . . I am trying hard not to feel that way any more . . . it is not good for me to be sad."[58]

His homesickness—likely depression—may have been reinforced by worries about how his mother would adjust to Ellura's importance in his life, a concern he made clear when he wrote, "I think, Mother, that I will enclose a few of Ellura's letters. I don't believe you know her quite as I do. Perhaps you may be a bit surprised. I would a bit rather you would not show them to the general public, because parts are rather personal, but I don't mind if you read them, because I want you to know what a wonderful girl I really have. You will return them, won't you?"[59] Indeed, Ellura got the most detailed accounts of his western life and often got them first: "I wrote all of the details of the trip to Ellura & she will send you the letter to read."[60] And on another occasion: "I plan on buying some [pictures] and sending them to Ellura and she will forward them to you."[61]

This routing of correspondence indicated a change in Winters's interpersonal relationships, and his mother presently responded by saying that she would henceforth limit her suggestions. However, the son asked that she not do that. "Mother, your letter was simply splendid. I don't think you fall in the #2 class at all, and I do wish you would write the things that you said you mustn't. You know, I don't have to do the things [you] suggest."[62]

ROBERT K. WINTERS COLLECTION, FOREST HISTORY SOCIETY PHOTO COLLECTION

After completing his doctorate in 1930, Winters joined the technical staff of the Southern Forest Experiment Station in New Orleans, seen here with the clerical staff in 1932. Winters is at the left end of the third row.

In October 1925, shortly before Winters wrote of asking for a transfer to the Experiment Station, he and Ellura began to plan a meeting during the Christmas holidays. He figured that between the legal holidays and his earned vacation days, he had ten or eleven days available. "We would each come half way. I don't have much of an idea how much it would cost—enough, no doubt. But, there are some things that I would like very much to decide, and I can't very well decide them alone."[63] In the end, he went all the way to Michigan for Christmas, leaving on December 19, 1925.[64] He and Ellura were together in both Ann Arbor and her hometown of Benton Harbor, and according to her mother it was "a pleasure to see him and Ellura together. They are so genuinely happy and they don't care at all who knows it."[65]

When he returned from his Michigan visit, having had opportunities to discuss his future with both Ellura and his mother, he seems to have been more settled in his mind. "I'm pretty well content, for now we have some plan, something definite toward which to work."[66]

MAKING TOUGH CHOICES

Although this is not spelled out in his letters, he had settled on pursuit of a career in the Forest Service. Hence his decision not to pursue a college teaching post when he was again contacted about the Washington State College position:

> I had another letter from that Pullman job, at the State College. It seems as tho there was some misunderstanding, with the result that funds were not available last fall. They think they have funds now, and plan to begin hostilities about March 1. They want to know if I am still interested, adding that the maximum salary they feel able to pay is $2,000 per year instead of $1,800 as before. I wrote and told them that I felt that experience of a broad and general nature was what I needed, that I hoped to move as often as possible in the next few years, & that I expected some day to teach. I wrote as nice, and interested a letter as I could, and perhaps he may remember me at a time when I want to be remembered.[67]

His letters do not suggest that money was an important factor in his decision. Having grown up poor, he clearly understood the importance of financial security, but in his written discussions he did not compare the monetary rewards of potential careers.

His plans seem also to have included an element of self-improvement. His Christmas contact

with Ellura's family may have encouraged her to seek to add to his polish. "Ellura wants me to try to write something too, so under the urgent pressure I'm studying grammar and composition out of a little book I have, so that I may write things better. Trying to put on a polish, if such a thing is possible."[68] Subsequently, he wrote "Diary of a Forest Service Scaler,"[69] and a few days later, an untitled diary.[70] He had not done this sort of writing since the lonely days of the previous summer.

Winters's surviving letters were regular up to December 13, 1925, when there was a break due to his Christmas trip back to Michigan, and then resumed on January 17, 1926. There were just two more and then a break until late May 1927, when he described a three-day trip from Washington state to Baker, Oregon, via Portland. Then there was another break until July 4, 1927. In that letter it is clear that Ellura had been west to visit Bob in July the previous year and that their wedding was imminent. The paucity of letters over the eighteen months prior to their wedding leaves significant gaps in his career-choice reporting.

Fortunately, an audio tape Winters made late in his life tells of a decisive opportunity that came in the spring of 1927. The previous Christmas, when he had again gone to Michigan for the holidays, he and Ellura had decided that they would be married the coming summer. He was already looking for married accommodations in Baker when an offer came from the University of Michigan for one of four junior instructorships in its School of Forestry and Conservation, part of a major departmental reorganization. He could work on his doctoral degree and would do some teaching, for which he would be paid $100 per month. After a flurry of letters, he and Ellura decided he should accept this offer.[71]

He clearly saw the University of Michigan offer as a step toward furthering his career in the U.S. Forest Service, not a deviation from it: he applied for and received a leave of absence from the Forest Service for the academic year and returned to work for the agency during the summer vacation. He followed this pattern for the succeeding three years as well.[72]

Bob and Ellura were married in Benton Harbor on September 3, 1927. They settled in Ann Arbor, where he was considered a member of the faculty of the University of Michigan.[73] Ellura, who had received her master's in education the summer of 1927, also worked, first as a university marker, and then as director of the Methodist Wesley Foundation. Bob completed his PhD in the spring of 1930. In the fall of that year, he and Ellura moved to New Orleans, where he worked at the Forest Service's Southern Experiment Station.[74]

As he had anticipated, considerable absence from home was indeed part of his experiment station work, but this did not seem to interfere with marital happiness. During the next decade, while based in New Orleans, he was part of a comprehensive survey of the timber resources of the Forest Service's Southern Region and was often away from home, where Ellura remained, busy as a housewife and then mother.[75] During these years they again resorted to frequent letters, which again seemed to serve them well.[76] As he advanced in his career, so did the amount of time he spent in offices, doing the sort of business he had disparaged in 1925, but which allowed him to return home to his family each night. At one point in his career, he spent two years with the Agency for International Development to establish a forest products laboratory in East Pakistan (now Bangladesh). After his retirement in 1967, he served fifteen years as an international forestry consultant for the Society of American Foresters. Throughout, he remained happy in his marriage, dedicating a book that was

AMERICAN FORESTRY ASSOCIATION COLLECTION, FOREST HISTORY SOCIETY

Winters in 1938, when his Forest Service career was well underway.

his initial retirement project to Ellura, "My enthusiastic companion on many an exciting adventure."[77] She had helped increase his self-confidence and his social polish both directly and indirectly through her own upbringing and social experience. In the end, he had chosen not only the right career path but also the right partner to accompany him.

CONCLUSION

Why did Robert K. Winters commit to government employment instead of a career in academia? He left no written explanation, so I can only speculate. Perhaps his three years back at university convinced him that government was a better fit. Perhaps the onset of the Great Depression in 1929 as he was finishing his doctorate highlighted the greater financial security of government work. In any case, the New Orleans Experiment Station provided the sort of scientific forestry work that he had desired since the summer of 1925.

Although he might well have gotten an experiment station

assignment without more graduate work, education was a trusted route to advancement. He may also have considered higher education a more flexible route, surmising that graduate degrees have at least some influence when one seeks professional work and can also offer an alternative career in academia.

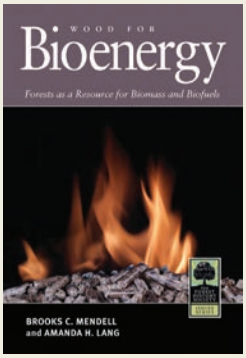
Winters tried out both government service and academia for five years. He first went west, away from his fiancée, to earn sufficient money to marry her. The Forest Service was a convenient vehicle for this, but some of its work did not appeal. However, the experience taught him that what he really enjoyed was intellectual work, which he had discovered could be pursued in both academia and government service. He then spent time sampling both career routes. Not every young person has the luxury—or the necessary intellect, which was evident to his superiors in both spheres—of being able to switch career paths for half a decade. Ultimately, he chose government service and stayed with it, rejecting offers over the next four decades that came from both academia and private companies.[78] Perhaps his choice on completion of his graduate study in 1930 is less significant than his loyalty over the years. The insecurity he remembered from his impoverished childhood initially led him to keep alternatives in hand, and then encouraged him over the years to stay with the familiar—government service.

Margaret Andrews is Associate Professor Emerita in the Department of History at Washington State University, and is the eldest child of Robert Winters. She is the co-editor of Letters from Chittagong: An American Forestry Couple's Letters Home, 1952–54 *(1994).*

NOTES

1. For example, Robert K. Winters, ed., *Fifty Years of Forestry in the USA* (Washington, DC: Society of American Foresters, 1950); Robert K. Winters, *The Forest and Man* (New York: Vantage Press, 1974); Robert K. Winters, "Beginnings of Forestry in India," *Journal of Forest History* 19, no. 2 (1975): 82–90.
2. To his family, June 27, 1925.
3. Diary, August 6, 1925.
4. To his family, July 12, 1925.
5. To his family, July 5, 1925.
6. To his family, July 19, 1925.
7. To Ellura, July 12, 1925.
8. To his family, July 12, 1925.
9. To Ellura, July 18, 1925.
10. To his family, August 2, 1925.
11. To his family, July 26, 1925; August 23, 1925.
12. To his family, August 26, 1925.
13. To his family, August 29, 1925.
14. To his family, September 4, 7, 13, 1925.
15. To his family, September 4, 1925.
16. To his family, September 7, 1925.
17. To his family, September 13, 1925.
18. To his family, September 7, 1925.
19. To his family, September 7, 1925.
20. To his family, September 19, 1925.
21. To his family, September 19, 1925.
22. To his family, October 5, 1925.
23. To his mother, [October 2, 1925].
24. To his family, July 19, 1925.
25. To Don, September 15, 1925. Don was one of Bob's brothers.
26. To his family, August 4, 1925.
27. To his family, October 8, 1925.
28. To his mother, November 29, 1925.
29. To his mother, February 19, 1926.
30. To his family, November 15, 1925.
31. To his mother, [October 2], November 22, 1925.
32. Officially the Pacific Northwest Forest and Range Experiment Station, it is now the Pacific Northwest Research Station. It was established in 1925.
33. To his family, October 5, 1925.
34. To his family, October 25, 1925.
35. To his family, October 5, 1925.
36. To his family, November 15, 1925.
37. Winters, *The Forest and Man*, 285–300.
38. To his family, July 12, 1925.
39. To his family, July 12, 1925.
40. To his family, July 12, 1925.
41. To his family, July 19, 1925.
42. To his family, July 19, 1925.
43. To his family, July 19, 1925.
44. To his family, October 25, 1925.
45. To his mother, November 22, 1925.
46. To his family, October 25, 1925.
47. To his family, October 5, 1925.
48. To Ellura, July 18, 1925.
49. To his family, November 8, 1925.
50. To his family, November 8, 1925.
51. To his family, November 8, 1925.
52. To his mother, February 19, 1926.
53. Ellura Moon Harvey (Mrs. William P.). Her obituary in the *Benton Harbor News-Palladium* (reprint for funeral, c. November 9, 1939) characterized her as devoting "much of her time to civic and club work as well as . . . multiple church activities."
54. Robert K. Winters, oral history interview, audio tape 1/3, side 2, Box 1, Robert Kirby Winters Papers, Bentley Historical Library, University of Michigan,
55. To his family, August 4, 1925. He borrowed a total of $254: $169 from his grandmother, $25 from his brother, and $60 from his mother.
56. To Ellura, July 22, 1925; to his mother, [October 2] 1925.
57. To his family, August 2, 1925.
58. To Ellura, August 28, 1925.
59. To his family, August 4, 1925.
60. To his family, September 4, 1925.
61. To his family, September 19, 1925.
62. To his family, November 8, 1925.
63. To his family, October 25, 1925.
64. To his mother, December 13, 1925.
65. To his mother from Mrs. W. P. Harvey, January 6, 1926.
66. To his mother, January 17, 1926.
67. To his mother, January 10, 1926.
68. To his mother, January 17, 1926.
69. February 27, 1926.
70. "Diary March 7, 1926."
71. Winters, audio tape 3/3, side A.
72. Winters, audio tape 3/3, side A.
73. University of Michigan Alumni Association, *Michigan Alumnus*, vol. 34 (Ann Arbor: Alumni Association of the University of Michigan, 1927), 154.
74. Information from Robert K. Winters, foreword to *Letters from Chittagong: An American Forestry Couple's Letters Home, 1952–54*, eds. Margaret W. Andrews, John L. Baker, and Fritz Blackwell (Columbia, MO: South Asia Books, 1992). Winters reviewed that material before it went to press. His dissertation was entitled "Stem Form of White Oak."
75. Photographs taken in these years show travel in Texas, Virginia, Mississippi, and other southern locations. Forest History Society, Inventory of the Robert K. Winters Photographs 1930–1939, Forest History Society Photograph Collection, Library and Archives, Forest History Society, Durham, NC, https://foresthistory.org/research-explore/archives-library/fhs-archival-collections/inventory-robert-k-winters-photographs-1930-1939.) The author, Ellura and Bob's eldest child, was born in New Orleans in 1932.
76. Winters kept these for many years but destroyed them before his death.
77. Winters, *The Forest and Man*, [n.p.].
78. The author heard the pros and cons of such offers discussed over the family dinner table. (See note 75.)

FOREST HISTORY SOCIETY ISSUES SERIES



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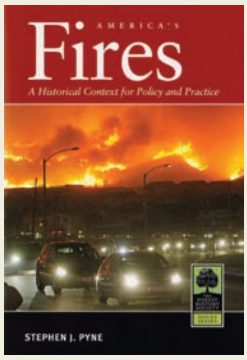

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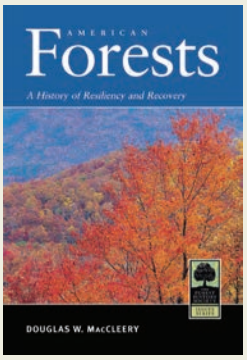

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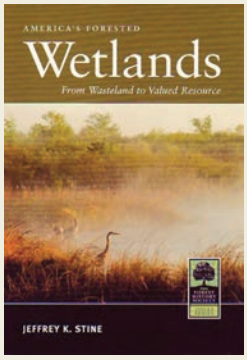

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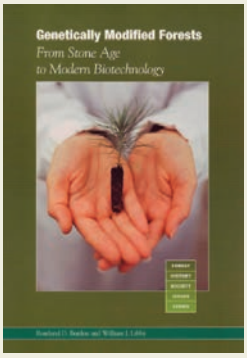

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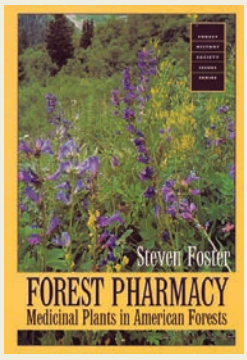

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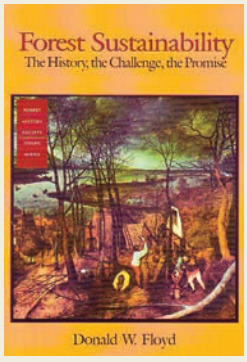

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75 YEARS OF THE FOREST HISTORY SOCIETY

By James G. Lewis

In December 1945, Theodore Blegen, a history professor at the University of Minnesota, met with a group of historians and forest industry leaders concerned with how the history of the state's forest industry was being interpreted and portrayed. He urged them to form an organization that would preserve and make available the records of lumber companies to researchers and journalists. To facilitate this, on June 12, 1946, the Weyerhaeuser family gave a start-up grant that established the Forest Products History Foundation of the Minnesota Historical Society.

The founders wanted the organization to focus on industry, but on a national scale, with some attention given to Canada. That national focus impelled the foundation to change its name in 1953 to the less-cumbersome American Forest History Foundation and to legally separate from the Minnesota Historical Society in 1955. Two years later, to reflect having expanded focus beyond industry to forest history in general, and to make fundraising easier, the foundation's leadership decided on another transformation: the institution would become a membership organization called the Forest History Society. Seventy-five years after its founding, the Forest History Society is still the world's only research library and archive dedicated to the history of how humans have interacted with forested landscapes around the world.

To accommodate its growing collections, FHS moved cross-country three times within a twenty-year span, with the last of these moves being from California to Durham, North Carolina, in 1984. Then, in 2019, FHS moved once more—this time just three miles, not three time zones—into its first purpose-built home. Space is no longer a concern: the archive has 7,500 linear feet of shelf space, and the new library's square footage equals that of the previous building.

The society's initial core programs encompassed identifying and collecting archival source materials, assembling a comprehensive bibliography, and publishing monographs and reference books in the new field of forest history. Conducting oral history interviews, producing a scholarly journal, and convening symposiums (and publishing their proceedings) soon followed. The 1980s and 1990s saw the addition of environmental education and public outreach programs that, because of the internet, can and do engage people around the world.

Over the last few decades, the scope of scholarship and archival holdings have been expanded to include underrepresented populations in forest history like women and African Americans. Though the scope of its scholarship and holdings have continually broadened over the last seventy-five years in response to the times, the Forest History Society's mission remains fundamentally the same today as in 1946 when it was founded: to collect, preserve, and disseminate our shared forest and conservation history, and for the Forest History Society to be the world's leader in that effort.

1946
The Forest History Society (FHS) is founded as the Forest Products History Foundation of the Minnesota Historical Society, with Rodney C. Loehr as director.

Logo from 1948–1950

1950
Loehr returns to full-time teaching at the University of Minnesota, reporting twenty publications.

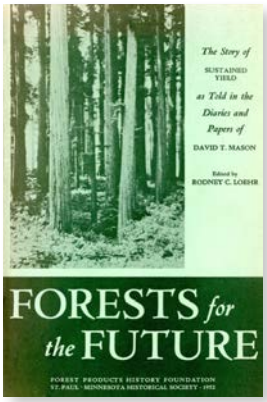
Assets of $11,000.

First director, Rodney Loehr

SOURCES: "Forest History Society Highlights, 1946 to 2006," *Forest History Today* Spring/Fall 2006: 54–55; Thomas R. Cox, "A Tale of Two Journals: Fifty Years of *Environmental History*—and Its Predecessors," *Environmental History* 13 (January 2008): 9–40; and Harold K. Steen, "The Forest History Society and Its History" (typescript; Forest History Society records).

1952
Elwood R. "Woody" Maunder recruited as Loehr's successor.

Publication of *Forests for the Future: The Story of Sustained Yield*, the society's first book-length work.



1958
Newsletter is replaced by *Forest History*, an illustrated quarterly journal.

1964
Moves to Yale University and becomes affiliated with its school of forestry and university library.


Page Six

Forest History Society Moves HQ to Yale U.

NEW HAVEN, Conn.—Yale University will become a center for research in the field of forest history on July when the Forest History Society, Inc., moves its office and library from St. Paul, Minn., to the Yale School of Forestry.

The affiliation of the society with Yale, effective July 1, was announced jointly today by President Kingman Brewster, Jr., and Dr. Frank H. Kaufert of St. Paul, president of the Society. An independent non-profit educational corporation, the Society will receive support from Yale and office space in Marsh Hall.

President Brewster also announced the appointment of two members of the Society's professional staff to positions at Yale. Elwood R. Maunder, executive director of the Society, has been named Curator of Forest History in Sterling Memorial Library and the School of Forestry. Joseph A. Miller has been named Research Associate in Forest History, also jointly in the Library and the School.

The Forest History Society was formed in 1946 as a special unit of the Minnesota Historical Society concerned with the history of forestry in the Great Lakes region. Since then it has expanded its interests to cover the whole field of forestry and forest-based industries in North America. It became an independent corporation in 1955.

The Society has emphasized the preservation of primary source material, especially personal papers and business records of individuals throughout the continent," he said and firms. With the cooperation of more than 40 universities and historical societies in the United States and Canada, it has established depository libraries at those institutions where its collections are kept and made available for use by scholars.

Another major aspect of the Society's work has been a program of oral history interviews. More than 50 forestry leaders, foresters, educators and others active in the early growth of North American forestry have already provided valuable supplements to the written record from their personal experiences.

The Society has sponsored several historical monographs and publishes the quarterly journal, Forest History.

Dr. Kaufert, who is dean of the University of Minnesota School of Forestry, today hailed the affiliation as "the next logical step in the development of a unique experiment in historical research."

"For the past 15 years, the Society has built up rich regional collections of original sources of North American forest history and has encouraged their systematic scholarly exploration and publication there.

"Yale University, with its long tradition of leadership in forestry and conservation education and historical scholarship, provides the Society with a most fitting academic home in which to continue its work with libraries, archives, and colleges and universities throughout the continent," he said

1950

1953
Renamed the American Forest History Foundation.

First oral history interview is conducted; more than 300 will follow.

Begins certification program for forest history repositories across U.S. and Canada to receive archival materials.

Logo from 1951–1961

1955
Becomes independent of the Minnesota Historical Society.

1956
Forest History Sources of the United States and Canada, the society's first major reference work, is published.

1957
Renamed Forest History Society; becomes a membership organization.

Begins publishing *Forest History Newsletter*.

Accessions the records of the Society of American Foresters, first major collection.


FOREST HISTORY NEWSLETTER

Volume 1 SPRING 1957 Number 1

The father of a newborn baby is usually indulged in his partiamable pride in the new arrival. And it is much the same with an editor who views a new publication. So may we introduce our FOREST HISTORY NEWSLETTER, which though it be not the most beautiful specimen of the printer's art, yet by fatherly hindsight, "is little an important need!"

The Forest History Foundation, Inc., now carries on its program in most of the states and provinces of the United States and Canada. And all through that area a growing number of friends and persons interest in forest history are trying in a variety of ways to help us. This NEWSLETTER is intended to stimulate the growth of that program. It will be a telegraphic facilitator to let everyone know what everyone else is doing in the field of forest history.

If you've made a great manuscript find—tell it! If you have a problem—share it! If you have a question—ask it! If you're working on a project—describe it! We want your questions, comments, reports. Even your criticisms will be welcome.

ANNUAL MEETING—Businessmen, foresters, and historical scholars, both vocational and avocational, comprising the Board of Trustees met in St. Paul May 17 and 18 for the annual meeting. This marks the completion of the Foundation's second year of independent existence and the main topic to be considered in the program for the next five years.

GREELEY BIOGRAPHY—The first biographical study of William B. Greeley has been started by George T. Morgan, graduate student at the University of Oregon, Eugene. The Greeley family has made the Colonel's personal papers available and has given Mr. Morgan permission to use them for this. Write Morgan c/o Forestry Department if you have any anecdotal material, especially those on his early career as a forester.

REDWOOD BIBLIOGRAPHY—Professor Emanuel Fritz, Chairman of the California Forest History Committee, has his long-awaited bibliography of redwood literature almost ready for publication. It has, he was reading galley proof when your editor visited him in his San Francisco office last month.

WEYERHAEUSER HISTORY—Allen Sevona and Ralph Hidy are heading into the home stretch on their history of the Weyerhaeuser Timber Company and its related companies. The research is nearly complete—more than three years of it, and the book will possibly be out in 1958. Several other forest products companies are showing an interest in following the Weyerhaeuser lead.

LOGGING LINGO—W. F. McCulloch's "Woods Words" is being readied for early publication by the Champion Press (Ilford

1960

1960
Begins bibliographic compilation as parallel project to archival guide.

Logo from 1961–2002

75 YEARS OF THE FOREST HISTORY SOCIETY

Harold K. "Pete" Steen, FHS's third director

1978
Maunder retires, succeeded by Harold K. Steen.

Assets of $148,000.

1984
Acquires its first computers.

FHS moves to Durham, North Carolina, purchases headquarters building, and becomes affiliated with Duke University.

Timber
Forest conservation society chooses affiliation with Duke

1969
Moves to the University of California, Santa Cruz.

1976
A biennial book award is established.

1970

1980

1972
Creates two awards for best forest history articles.

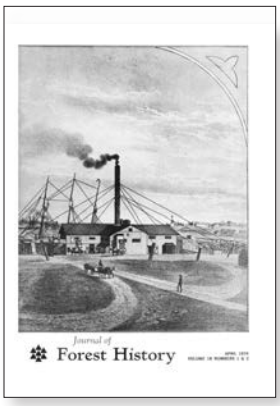
1966
Publishes first conference proceedings.

1979
Endowment drive earns first $1 million.

Begins active involvement with International Union of Forestry Research Organizations.

1977
Begins publication of newsletter *Cruiser*.

1981
Produces *Timber on the Move*, the first of two documentary films in the 1980s.

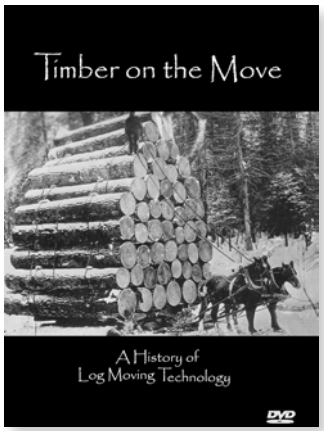


Journal of Forest History

1974
Forest History renamed *Journal of Forest History*.

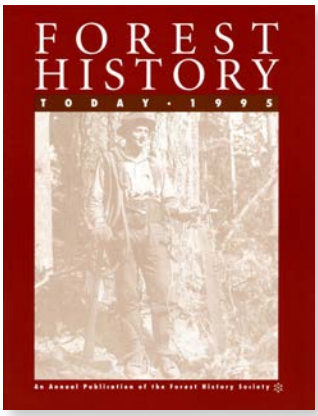
The Forest History NEWSLETTER

Cruiser newsletter



Timber on the Move
A History of Log Moving Technology
DVD

1988
Durham headquarters is refurbished and doubled in size. Archive is named for Alvin J. Huss.



1995
Begins publishing magazine *Forest History Today* for members.

Work begins on middle school environmental education curriculum.

Title of "executive director" changed to "president."

1996
Forest & Conservation History is replaced by *Environmental History*, co-published with American Society for Environmental History (ASEH).

1986
Establishes the F. K. Weyerhaeuser Forest History Fellowship for Duke graduate students.

1993
Forest History Society Issues Series is launched with *American Forests: A History of Resiliency and Recovery*.

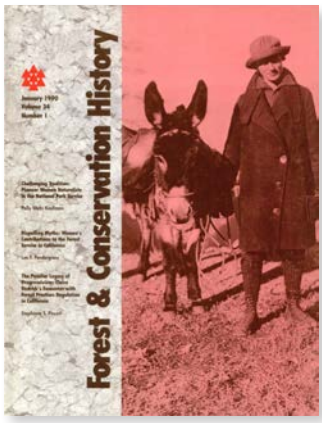
1990

1987
Establishes the John M. Collier Award for Forest History Journalism.

1991
Biennial book award is renamed in honor of Charles A. Weyerhaeuser.

1994
Searchable bibliography and archival guide databases are posted on the Internet.

1998
Agreement with the U.S. Forest Service reached to house and curate its history reference collection. U.S. Forest Service History section of the website is launched.



1990 Journal is renamed *Forest & Conservation History*.

Alfred D. Bell Jr. Travel Grants endowed.

1997
Steen retires and is succeeded by Steven Anderson.

Assets of $5.5 million.

FHS's fourth president, Steven Anderson

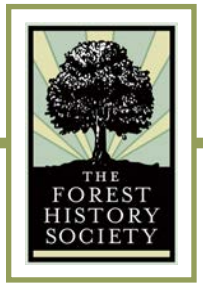
1999
FHS newsletter *Cruiser* relaunches as *Forest Timeline*.

75 YEARS OF THE FOREST HISTORY SOCIETY

2000
FHS establishes Lynn W. Day Endowment for Forest History Publications and the Alvin J. Huss Endowment for Digitization and Outreach of the archives.

FHS begins digitizing its photograph collection and posting images online.

Logo from 2002–2016



2001
FHS and ASEH merge respective awards for best history article into the Leopold-Hidy Award.

Middle school environmental education curriculum "If Trees Could Talk" is made available on the internet.

2003
Environmental History is made available online through the History Cooperative.

2004
Charles A. Weyerhaeuser Book Award is changed to annual award.

2005
FHS joins with ASEH and the European Society for Environmental History to establish the International Consortium of Environmental History Organizations; they begin planning the first World Congress in Environmental History for 2009.

2006
FHS's publications exceed 200 books, manuscripts, and published oral histories.

Assets of $8.5 million.

2008
Two-year project to catalog all FHS archival collections using Encoded Archival Description (EAD), the accepted standard, begins.

FHS launches its blog *Peeling Back the Bark*. Other social media (Twitter, Facebook, etc.) efforts soon follow.

2009
Forest Timeline newsletter becomes a digital-only publication.

2010

2015
Walter S. Rosenberry Fellowship is established for a graduate student attending a university in North America.

2013
Fire at FHS necessitates moving out of the building for nearly a year.

2019
FHS moves to its new headquarters, its first building specifically constructed as a library and archive.

U.S. Forest Service funds digitizing and posting of some 5,000 biographical files from its history reference collection at FHS.

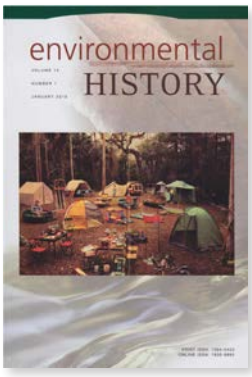
2021
Monthly webinar series focusing on current concerns of social justice, the pandemic, and climate change is launched.

FHS marks 75 years in muted fashion due to ongoing pandemic.

FOREST HISTORY Society

2020

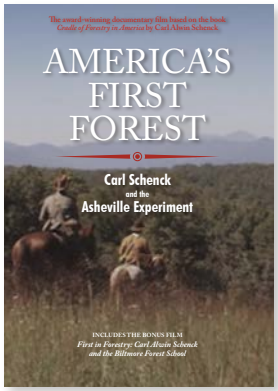
Logo adopted in 2017



2010
FHS board of directors determines that more space is needed and soon launches a campaign to fund a new building.

FHS and ASEH begin publishing *Environmental History* in partnership with Oxford University Press.

2016
FHS documentary *America's First Forest: Carl Schenck and the Asheville Experiment* debuts on public television stations around the country and wins a regional Emmy Award.



2017
FHS breaks ground for its new headquarters.

Assets of $12.2 million.

2020
In-person research is temporarily suspended due to Covid-19 global pandemic.

SMITHSONIAN INSTITUTION ARCHIVES, ACCESSION 90-105, SCIENCE SERVICE RECORDS, IMAGE NO. SIA2008-0060

Ecologist William L. Bray was an expert on the vegetation of western Texas.

William L. Bray (1865–1953)

By Char Miller

In 1899, Professor William L. Bray of the University of Texas–Austin spent a fortuitous evening with Gifford Pinchot, then head of the USDA Division of Forestry, at the latter's home in Washington, D.C. Afterward, the chief forester, impressed by Bray's ecological expertise, hired him as a "Collaborator," or a special agent. Bray's task was to write a pair of reports assessing natural resources in Texas, with a special focus on those landscapes in greatest need of conserving—the Piney Woods and the Edwards Plateau.[1]

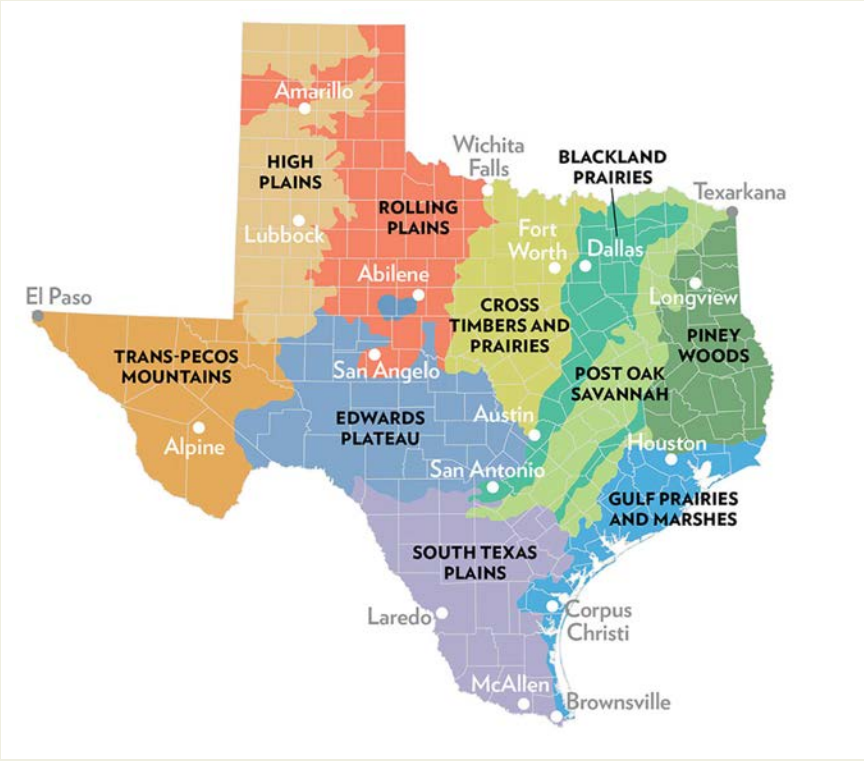
These reports furthered Bray's professional career and advanced his teaching (his research led him to develop the first classes on forests and forestry in the state).[2] They also signaled Bray's keen awareness of the region's economic value and conservation potential.[3] Moreover, they offer a striking set of analyses of the environmental pressures and human challenges that confronted those living in, and off, these resource-rich areas. If Texans hoped to address some of the dilemmas they faced and realize economic opportunities, Bray asserted, they would have to adopt a rigorous commitment to conservation that balanced economic needs with environmental protections. To achieve this balance, and ensure a more sustainable future, Texans also would need to ensure collaboration between competing industries and seemingly distinct geographical regions. Protecting the resource-rich regions of the state, he averred, must be a multigenerational commitment, a cooperative venture, and a governmental priority.

Although the reports reinforced Bray's growing reputation as a formidable scholar of and advocate for the conservation of the state's forests, his innovative scholarship has been largely forgotten. Forest historian Robert S. Maxwell, for example, credits W. Goodrich Jones, a banker-turned-activist, for "much of the motivating force for reforestation and conservation in Texas. A tenacious advocate for tree planting across the state, Jones lamented that the state's pinelands were being harvested so quickly that they might disappear within a quarter-century."[4]

Bray was similarly concerned about the disappearance of the Texas pineries, and the two men shared a conviction that the state government and timber companies needed to encourage reforestation to ensure the logging industry's survival. Yet whereas Bray demanded the

implementation of state or national mandates and regulations in his 1904 *Forest Resources of Texas* report, Jones "urged that the commercial forest belt be held by companies in large fenced tracts, and that a sustained yield program should be enforced."[5] To build support for these ideas, in 1910 Jones helped establish the short-lived Conservation Association of Texas, and when that organization folded four years later, he organized the Texas Forestry Association; through this later organization, he lobbied the state legislature to create a department of forestry (which it did, but without adequate funding). In the end, Maxwell observes, Jones "was a catalyst who produced action by the decision-makers."[6]

By contrast, Jones acknowledged Bray as the progenitor: "Much of the credit of inaugurating the first real work in forestry in our State," Jones wrote in 1915, "is due to Prof. William L. Bray, who in the year 1900 was botanist of the Texas university and published the only reliable work that has ever been done on Texas forests." More pointedly, Bray's insights significantly challenged those who "in that year and even now discredit the idea that there could ever be an end to the Texas forests."[7] Such praise from the man regarded as "the Father of Texas Forestry" makes Bray's absence from the history of Texas forestry all the more curious.



TEXASINVASIVES.ORG, ADAPTED FROM GOULD, ET AL.

The Edwards Plateau region comprises an area of central Texas commonly known as the Texas Hill Country. According to TexasInvasives.org, the "region is home to a whole host of rare plants and animals found nowhere else on earth."

A PERIPATETIC CAREER

Born in Burnside, Illinois, on September 19, 1865, the ninth of William and Martha Bray's thirteen children, William L. Bray was educated in local public schools. After high school, Bray earned a teaching degree at Missouri's Kirkland Normal School (now Truman State University) and spent the next several years as a teacher and administrator in Iowa and Missouri. Showing his inclination toward the social gospel, he took a twelve-month leave to direct the YMCA in Fresno, California. During his free time, the intrepid young man spent his summers studying the Midwest's biota and cultivated a special interest in the region's tallgrass prairies. To expand his botanical expertise, he decided to go back to college, matriculating at Cornell University from 1889 to 1891.

Rather than completing his studies at Cornell, however, Bray transferred to Indiana University, where he received his first degree in botany in 1893; while there, he signaled his emerging commitment to research, publishing an article with one of his mentors.[8] The next year he completed a master's in botany at Lake Forest University (now College)—with more articles to his credit—and, while teaching there, began his doctoral work at the nearby University of Chicago. In 1896, midway through his studies, Bray traveled to Germany to spend a year in the lab of Heinrich Gustav Adolf Engler, a noted botanist, at the Royal Botanical Garden in Berlin. He then returned to Chicago to complete his dissertation in 1898, finishing up a year after accepting a teaching position at the University of Texas. The move placed him near the despoiled landscape that would be the focus of his work for the next decade.[9]

After ten years in the Lone Star State, however, Bray resigned to become a full professor at Syracuse University, a decision probably made easier because his wife hailed from upstate New York.[10] He became head of the Department of Botany, then

organized the university's new College of Agriculture, and was appointed acting dean of the school's new College of Forestry. Later he served as dean of the university's graduate division and, in 1915, became a charter member of the Ecological Society of America.[11] These commitments came at the cost of his scholarship, one of his admiring colleagues wrote. "It is regretted that so able a man did not continue to publish and produce more research." That said, because of his "keen perception in the laboratory and the field and his well-organized mind, all of Dean Bray's publications have remained of great value to the present." This assertion only underscores the significance of Bray's Texas-based research: it was there that he made his mark and became the state's leading scholarly promoter of a deeper understanding of its diverse ecosystems and the pressing need to conserve these varied resources.[12]

It was in Texas that he made his mark and became the state's leading scholarly promoter of a deeper understanding of its diverse ecosystems and the pressing need to conserve these varied resources.

A PRESCRIPTION NEVER FILLED

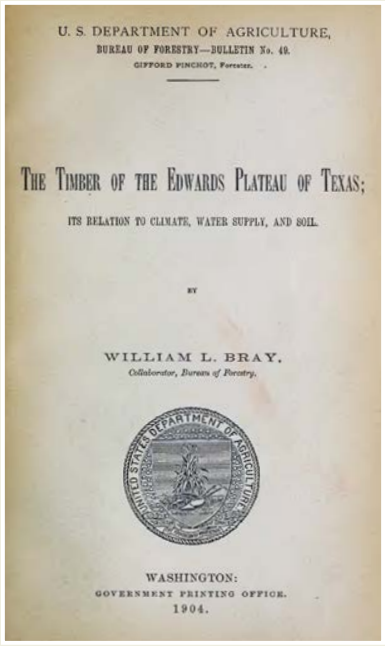
Bray's influence on forestry in Texas was magnified as well because unlike his contemporaries, he recognized that the ecological imperatives and social needs of the Edwards Plateau were as important as the Piney Woods. Given that the "welfare of the Edwards Plateau itself and the Coastal Plain adjacent to it strongly demand the retention of permanent timber covering on the plateau," it was necessary to develop a proactive forest policy that involved "the purchase and reservation of timber tracts" in that rumpled terrain.[13]

This strategy to produce long-term sustainability gained fuller explication in *The Timber of the Edwards Plateau: Its Relation to Water Supply, Climate, and Soil*, published in 1904. Here again Bray pursued an ecological approach to the issue that emerged as a result of his fieldwork. He roamed the plateau and its environs, cutting up and down the Balcones Escarpment, moving back and forth between the communities beneath it, from Austin to San Antonio. Along the way, he assessed the interplay between the region's ecology, geology, and geography; its climate, precipitation, and soils; and vegetative cover. He also calibrated how this physical realm interacted with the human economy.[14]

That was the cause of considerable concern: the speed with which people were exploiting the plateau's upland resources had a direct bearing on downstream environmental damages. "For our present purpose the important considerations concerning the Edwards Plateau are, that it is a vast receiving area for rainfall, and that its structure is such as to give special significance to the behavior of water after it is precipitated."[15] What he meant by "special significance" is water's rapid downhill movement. Periodically, floodwaters ripped through each of the cities that hugged the Balcones Escarpment, at times fatally so. The Colorado River routinely inundated Austin; San Antonio suffered repeatedly as its eponymous river swept all in its path.[16]

Bray focused on the condition of upstream terrain. There, in the first decades of the twentieth century, two stories were emerging. The first was that cedar was quickly gaining ground on former grasslands; mesquite and cactus were also making inroads.[17] One reason for the transition was settlers' suppression of the fires that once had burned off the brush and allowed grass to retain its dominance. This shift came coupled with human activities that were compromising the health of local ecosystems. Trees—cedar and oak, particularly—were being clearcut to provide fuel and building materials and to clear land for agricultural production. The grasslands, in turn, were being overgrazed by large herds of cattle, goat, and sheep. The combination of interrelated effects intensified the threat of flooding. It is "a matter of common observation that forest denudation is followed by marked changes in the character of stream flow and the permanency of the springs."[18]

The managerial goal must be to regenerate forest and grass cover as well as a "deep layer of rich soil covered by an unreduced debris of fallen leaves and twigs."[19] Once that had been achieved, the dense tree canopy and porous ground would deflect and absorb heavy precipitation, a result that Bray argued would restore the Edwards Plateau's ecological functions. What was true of the Texas plateau would also be true across the U.S. West. The Edwards Plateau's downstream relation to its coastal plain, he wrote, was like that of "the Sierras to the San Joaquin Valley in California, the Wasatch Mountains to the irrigable lands of the Great Salt


U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF FORESTRY—BULLETIN No. 49.
GIFFORD PINCHOT, Forester.

THE TIMBER OF THE EDWARDS PLATEAU OF TEXAS;

ITS RELATION TO CLIMATE, WATER SUPPLY, AND SOIL.

BY

WILLIAM L. BRAY,
Collaborator, Bureau of Forestry.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

U.S. SERVICE FOREST

To prevent further environmental damage to the Edwards Plateau, in this report Bray pleaded for "absolute ownership and management by the State."

Lake basin, and the Rocky Mountains to the high Plains in Colorado."[20]

To better manage this relationship required thoughtful policies and effective interventions. Yet Bray held out little hope that "individual enterprise" alone would make this happen, "although if cooperation between private owners and the State could be brought about, it would result in mutual gain."[21] Instead, conservative stewardship of the all-important "rough breaks of the margins of the plains"—like the Piney Woods—needed greater oversight. "Nothing short of the absolute ownership and management by the State will suffice."[22]

One other vital commitment was necessary. Those who lived within the full extent of the river systems that rose in the Edwards Plateau and flowed to the Gulf of Mexico needed to recognize, value, and act on their shared experience. "The rice planter on the coast wants the most constant flow possible of the Colorado, Guadalupe, San Antonio, and other rivers."[23] Those ranchers and farmers occupying "the inner border of the coastal plain want the largest possible flow of artesian water." Inhabitants of the plateau, in turn, needed to preserve and build up their soils while maintaining the level of soil moisture "near enough to the surface to be available for crops."[24] Regardless of the differences in their economic activity and where they lived and worked, what bound these individuals together was water. "All desire to see destructive floods prevented," he wrote, "all want this water held back to be given so as to be utilized."[25] That being so, if these disparate groups learned to think like a watershed, they could establish cooperative land-management schemes that would benefit them individually and collectively.

Bray's prescriptions gained little headway in the succeeding years. The state's fledgling conservation movement did not begin to take off until the mid-1910s, after he had left Texas.

Bray's prescription was consistent with what geologist John Wesley Powell had declared in 1890: that upstream and downstream interests must collaborate if settlement in the arid West was to endure.[26] But whereas Powell thought cooperation was uniquely critical for the survival of Anglo settlers living west of the 100th meridian, Bray applied that same logic to those living to the meridian's east. "At the last it will rest with cattlemen of the plains and the ranchmen of the hills whether their pastures are worn out by overgrazing and their hills denuded by unwise cutting," He observed. "In the long run, these men will find that they can both pasture the plains and market the timber without destroying the protective value of a grass cover on the one hand or a timber cover on the other."[27] By joining together in voluntary association based on mutual need and a shared dependence on nature, they could construct a new human community.

Bray's prescriptions gained little headway in the succeeding years. The state's fledgling conservation movement did not begin to take off until the mid-1910s, after he had left Texas. But his ideas continued to persuade, at least within the Forest Service. In September 1921, W. W. Ashe, a Forest Service scientist, met with the Texas State Water Board and reiterated Bray's arguments about the need for the state to intervene in the management of the plateau and its river basins. Ashe urged the construction of flood-control infrastructure downstream and forest-and-grassland conservation management upstream and suggested that creating a national forest on the Edwards Plateau could demonstrate the importance of conservation management. That never happened.[28] By the late 1920s, Texas had placed some of its remaining forested lands in the eastern pineries in four tiny state forests.[29] A decade later, federally funded dams began to be slotted into some of the upper reaches of

the plateau's rivers. Only after World War II did these major watersheds come under the management of such entities as the Lower Colorado River Authority and the San Antonio River Authority, which regulate the water in their respective basins but do not manage the lands from which that flow arises, as Bray had urged.[30]

Bray's arguments for state-mandated conservation were far ahead of his time—and ours. That would not have bothered him. Rather, it confirmed that his primary scientific goal was to gather benchmark data, elucidate the nuances of ecological conditions, and explore the subtle interplay among climate, soils, and precipitation, research that could and should shape public policy. It "behooves a democracy to take a long look ahead," Bray noted in 1925. A century later, Texas continues to struggle to enact Bray's conservation prescriptions to make the state more resilient, sustainable, and environmentally enriched.[31]

Char Miller is a frequent contributor to Forest History Today. *He last wrote about W. W. Ashe and watershed stewardship in the 2020 issue. He is the author of* West Side Rising: How San Antonio's 1921 Flood Devastated a City and Sparked a Latino Environmental Justice Movement *and the forthcoming* Natural Consequences: Intimate Essays for a Planet in Peril.

NOTES

1. Andrew Denny Rodgers III, Bernhard *Eduard Fernow: A Story of North American Forestry* (1951; Durham, NC: Forest History Society, 1991), 484, notes Bray's visit with Pinchot. A longer version of this essay appeared first as "A Long Look Ahead: William L. Bray and Early Texas Conservationism," *Southwestern Historical Quarterly* 125, no. 3 (January 2022): 251–69
2. In developing his forestry class, Bray consulted with Carl A. Schenck, founder of the Biltmore Forest School, and Bernhard Fernow, inaugural director of the New York State College of Forestry at Cornell University. William L. Bray to Carl A. Schenck, Dec. 12, 1901, Biltmore Estate Manuscript Collection (Biltmore Estate, Asheville, NC), 2.1/1 Box 5, Folder 12; William L. Bray to Bernard Fernow, Aug. 19, 1901, Box 1, B. E. Fernow Papers (Division of Rare and Manuscript Collections, Cornell University Library, Ithaca, NY).
3. William L. Bray, *Forest Resources of Texas* (Washington, DC: Government Printing Office, 1904); William L. Bray, *The Timber of the Edwards Plateau: Its Relation to Water Supply, Climate, and Soil* (Washington, DC: Government Printing Office, 1904).
4. "Paper by W. Goodrich Jones on Texas Timber Resources," in *A Short History of Forest Conservation in Texas, 1880–1940*, ed. Robert S. Maxwell and James W. Martin (Nacogdoches, TX: School of Forestry, Stephen F. Austin State University, 1970), 47.
5. Robert S. Maxwell, "One Man's Legacy: W. Goodrich Jones and Texas Conservation," *Southwestern Historical Quarterly* 77 (January 1974): 380.
6. Maxwell, "One Man's Legacy," 380; Ronald F. Billings, "Bringing Forestry to Texas: The First Quarter-Century of the Texas A&M Forest Service," *Forest History Today*, Spring/Fall 2016, 38–44.
7. W. Goodrich Jones, "Forestry Work in Texas a Necessity," *Houston Post*, April 18, 1915.
8. Carl H. Eigenmann and William L. Bray, "A Revision of the American Chiclidae," *Annals of the New York Academy of Sciences* 7 (1894), 607–624; W. L. Bray, "Notes on Pediastrum," *Proceedings of the Indiana Academy of Science*, 1891 (Terre Haute, IN: Press of Moore & Langen, 1892), 49. Eigenmann's scholarly influence is noted in Fernandus Payne, "Carl H. Eigenmann," *Proceedings of the Indiana Academy of Sciences* 37 (1927): 35–47.
9. "Notes and News," *Botanical Gazette*, July 1896, 380; "Notes and News," *Botanical Gazette*, August 1896, 190; Mildred E. Faust, "William L. Bray," *Bulletin of the Torrey Botanical Club* 82, no. 4 (1955): 298–300; John Thomas Patterson, "A History of Biology in the University of Texas," *University of Texas Bulletin* No. 2425 (Austin: University of Texas, 1925), 48–60; William L. Bray, "The Xerophytic Flora of Texas" (PhD diss., University of Chicago, 1898); "Notes and News," *Botanical Gazette*, August 1898, 152.
10. Faust, "William L. Bray"; Anders S. Saustrup, "Bray, William L.," *The Handbook of Texas Online*, https://www.tshaonline.org/handbook/entries/bray-william-l.
11. Rodgers, *Bernhard Eduard Fernow*, 482–85; Frank N. Edgerton, *A Centennial History of Ecological Society of America* (Boca Raton, FL: CRC Press/Taylor & Francis Group, 2015), 1–28.
12. Faust, "William L. Bray"; Saustrup, "Bray, William L."
13. Jones, "Forestry Work in Texas a Necessity," 48–49.
14. Bray, *The Timber of the Edwards Plateau*.
15. Bray, *The Timber of the Edwards Plateau*, 9.
16. Char Miller, *Westside Rising: How San Antonio's 1921 Flood Devastated a City and Sparked a Latino Environmental Justice Movement* (San Antonio, TX: Trinity University Press, 2021).
17. Cedar in this context is in fact a juniper, *Juniperus ashei*; see F. E. Smeins and S. D. Fuhlendorf, "Biology and Ecology of Ashe Juniper," Texas Natural Resources Server, https://texnat.tamu.edu/library/symposia/juniper-ecology-and-management/biology-and-ecology-of-ashe-juniper/.
18. Bray, *Timber of the Edwards Plateau*, 25; making extensive use of Bray's foundational report is Lisa O'Donnell, *Historical Ecology of the Texas Hill Country* (Austin, TX: City of Austin, Wildland Conservation Division, 2019), http://www.austintexas.gov/edims/document.cfm?id=321715.
19. Bray, *Timber of the Edwards Plateau*, 28.
20. Bray, *Timber of the Edwards Plateau*, 29.
21. Bray, *Timber of the Edwards Plateau*, 30.
22. Bray, *Timber of the Edwards Plateau*, 30.
23. Bray, *Timber of the Edwards Plateau*, 29.
24. Bray, *Timber of the Edwards Plateau*, 29.
25. Bray, *Timber of the Edwards Plateau*, 29.
26. John Wesley Powell, "Institutions for the Arid Lands," *Century Magazine*, May 1890, 111–116.
27. Bray, *Timber of the Edwards Plateau*, 29.
28. Char Miller, "Reclamation Project: Rediscovering W. W. Ashe and the Origins of Watershed Stewardship," *Forest History Today* Spring/Fall 2020: 41.
29. Sieckle State Forest (1924: 1,722 acres); Goodrich State Forest (1926: 1,725 acres); Fairchild State Forest (1926: 2,740 acres); Kirby State Forest (1929: 625 acres). Masterson State Forest (550 acres) was established in 1985. See "Texas State Forests," https://tfsweb.tamu.edu/mmm/jun2019/.
30. Char Miller, "'Greed for Land': W. W. Ashe and the Environmental Roots of the 1921 Flood in Central Texas," *Southwestern Historical Quarterly* 125 (July 2021): 62–73; John Williams, *The Untold Story of the Lower Colorado River Authority* (College Station: Texas A&M University Press, 2016); Vivian Elizabeth Smyrl, "San Antonio River Authority," *The Handbook of Texas Online*, https://www.tshaonline.org/handbook/entries/san-antonio-river-authority.
31. William L. Bray, "Botany and the State," *University of Texas Bulletin* No. 2545 (Austin: University of Texas, 1925), 10.

PHOTOGRAPHER UNKNOWN; DELORES CROW SMITH COLLECTION; COURTESY MHC

Maxville, Oregon: A Logging Ghost Town

By Silas Lobnibe and Mary Oberst

Can a ghost town be brought back to life? Gwendolyn Trice, executive director of the Maxville Heritage Interpretive Center (MHIC) in Joseph, Oregon, is going to find out. MHIC's mission is to collect, preserve, and interpret the multiracial history of the former logging community of Maxville and similar communities throughout the West.[1]

Maxville's history is rooted in a forgotten aspect of America's forest industry history. As timber supplies in the Upper Midwest and South dwindled at the close of the nineteenth century, lumber companies began moving into the Pacific Northwest. By the early 1900s, companies were moving entire towns by rail, and workers either came along or migrated later. By the 1920s the lumber migration corridor to the American West was in place, attracting Black loggers from the South.

The Bowman-Hicks Lumber Company, based in Missouri, was one of those companies. In 1923 it established the town of Maxville in the state's northeast corner and recruited experienced White and Black loggers from around the country. Most of the White workers came from the Deep South and Midwest, as well as parts of Oregon. Of the sixty or so Blacks, most came from Arkansas, Mississippi, or Louisiana, where Bowman-Hicks had lumber mills.[2] Bowman-Hicks carved Maxville out of the forest. In its heyday, between 1924 and 1933, Maxville was home to about four hundred residents—making it one of the largest towns in Wallowa County overnight.

WHY PRESERVE MAXVILLE?

Gwendolyn Trice first heard of Maxville in 2002, when she learned that she was the daughter of a Maxville logger. Her father, Lafayette "Lucky" Trice, was nineteen years old when he arrived in Maxville from Arkansas. But Gwendolyn knew her father only as a respected African American businessman and civic leader in La Grande, some forty miles southwest and a lifetime away from Maxville. Lucky died in 1985; in 2002, during a casual conversation with a family friend, Trice learned that he had been recruited in 1923 to work as a logger in Maxville.

Trice began to retrace her father's life in Maxville and discovered overlapping cultures: the Nez Perce tribal members who were forced off their land in 1877; the Black loggers of Maxville; the Chinese laborers who helped build the state's major railroad lines; the Japanese immigrants who

Maxville loggers, circa 1926. Workers pose with their tools, which include cross-cut saws, a stamp to mark the felled timber, and poles for log-scaling.

cleared the land for the logging and farming industries; and the Greek immigrants who helped build and maintain the logging railroads and trestles that Maxville depended on for moving lumber to market.

To tell the story of Maxville, in 2008 Trice opened the Maxville Heritage Interpretive Center in Joseph, forty miles away. "Nobody talked about it," Trice says about Maxville's multiethnic citizenry. "If I hadn't started this [center], the history would be gone."

The Bowman-Hicks Lumber Company chose a dangerous time in Oregon's history to bring Black loggers to its new operation. In 1920, the state had only 2,114 African Americans, three-quarters of whom lived in Portland. Oregon's constitution, passed in 1857, still contained an exclusion clause nearly seventy years later: "No free negro, or mulatto, not residing in this state at the time of the adoption of this constitution, shall come, reside, or be within this state, or hold any real estate, or make any contracts, or maintain any suit therein." Although the clause was rendered moot by the Fourteenth Amendment to the U.S. Constitution and was never enforced, it was not repealed by voters until 1926.[3]

Racism and nativism were very much on the rise at the time Bowman-Hicks set up Maxville. The Ku Klux Klan, having established itself in Oregon only two years before, claimed thirty-five thousand members in more than sixty local chapters. Klansmen quickly won elections at local, county, and state levels in 1922 and helped elect as governor the nativist Walter Pierce, who hailed from the same mountainous region as Maxville.[4] A mix of federal and state laws and policies restricting the rights of Chinese and Japanese immigrants were also in place.

Despite that overt hostility, Bowman-Hicks moved forward with Maxville. Sources differ on whether the company was indifferent to Oregon's constitution and racial history, simply chose to ignore it, or intentionally defied it. At any rate, the company "had more important tasks to tackle, which was harvesting timber to supply the masses," writes one historian, and Maxville thrived for the next ten years.[5]

Thus, Maxville's story highlights a unique moment of inclusion in a difficult racial history that some Oregonians still struggle with today. Maxville tells an important story of how people of color have been at the center of Oregon's history and have shaped the state's history.

MAXVILLE THEN

Most of the forest workers, including Trice's father, traveled to an existing logging camp by rail, in boxcars, to just outside Wallowa. The company built a new town for them and their families, both White and Black, at nearby Bishop's Meadow. The town was originally named Mac's Town, after Bowman-Hicks superintendent J. D. McMillan, but the name soon became Maxville.

Unlike most timber towns in Oregon, Maxville housed entire families, and that fact alone made the town distinctive. Homes for Whites were built with shiplap; the Black homes were decidedly more makeshift. Trice says that Black workers who brought their wives were required to provide proof of marriage; common-law marriage was not allowed.

Although the town was built for both White and Black loggers, it was laid out according to the usual southern Jim Crow rules for logging camps: residents were segregated by marital status (single men lived in boarding-style houses) and ethnicity. The town also segregated the schools, building a school for Whites at one end of town and a Black school at the other. MHIC has created a street map of the town, reconstructed from the memory of elders.

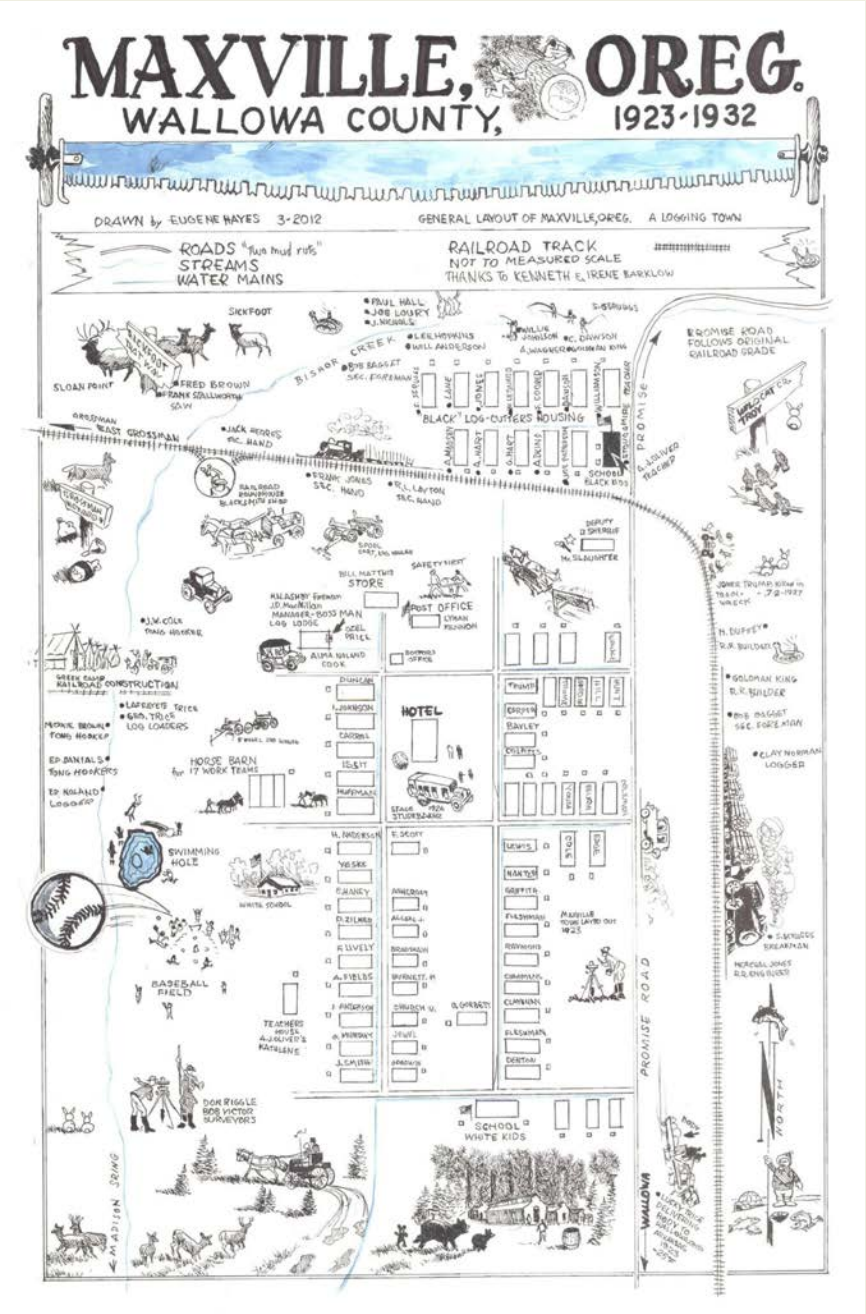
As Wallowa County's largest town, Maxville boasted a post office, a medical dispensary, a company store, a hotel, a horse barn, a blacksmith, and a roundhouse to turn the log-train engines. The lumber company ran its business from a large log building, which also served as a meeting place for residents of Maxville.

To profitably haul huge ponderosa pine logs from the forest, felled trees were skidded, using steam engines, steam donkeys, and Maxville's seventeen draft horses. Workers also used elaborate timber chutes to move logs. Jobs were typically segregated based on ethnicity. Working in teams, Blacks used crosscut saws to fell the trees, and many also had experience as log loaders, log cutters, railroad builders, tong hookers, and section foremen. Their primary expertise was logging, although there are first-hand accounts of Black workers who repaired and maintained the railroad engine. The White workers were section foremen, tree toppers, saw filers, contract truck drivers, and bridge builders; Greeks specialized in railroad building. Because of the nature of timber-felling work, however, the work teams were integrated despite the segregation of jobs.

LIFE IN MAXVILLE

Most of the Maxville houses lacked electricity and indoor plumbing. Residents traversed mud in the spring and fall. In winter, snow storms were common and winter temperatures could dip to minus twenty degrees.

The Bowman-Hicks Company included a baseball club in its business



MHIC AND IRENE BARKLOW FOR HER PERMISSION TO ILLUSTRATE HER ORIGINAL MAP

The Maxville town site map (not to scale) was created from the memories of the elders and illustrated by Wallowa County artist Eugene Hayes.

model to provide a recreational outlet for workers, and Maxville had a baseball field and two baseball teams, segregated except during regional tournaments. In the 1930s, the combined Maxville team earned a tournament win against the nearby town of Elgin. Maxville also had a swimming hole created by a spring and a natural land formation; based on an old photo, the swimming hole was available to all.

The surviving White residents of Maxville tend to describe the relationship between Blacks and Whites as largely absent of racism. White homesteader Alen Dale Victor recalls, "[A]s soon as the blacks moved into town, everybody got along with them. . . . We got along fine."[6] Ester Wilfong Jr., whose father was a Black logger, offered a different point of view: "[Y]ou did what you were supposed to do and keep your mouth closed and not step out of line, and you would get along fairly well."[7] Nevertheless, the Black loggers at Maxville drew the attention of the local Ku Klux Klan. In the mid-1920s, a mob of local Klansmen came to Maxville to intimidate the Black loggers. According to Trice, the White superintendent dehooded the leader and declared, "Get out, you are not welcome here. We know who you are."[8]

There are two likely reasons for this racial détente. The first is human nature. Says Trice, "People were connected in many different ways. They worked alongside one another. They had to rely on one another. The families saw each other every day. People became friends."[9] The second reason is economic: Maxville's 400 residents—timber workers and their families—were a boon for Wallowa County's economy. Many of the surrounding homesteaders, ranchers, and shop owners—KKK or not—also worked as loggers and mill workers. The needs of Maxville residents, especially for food, translated into jobs for locals and steady demand for goods.

The Great Depression and the consequent downturn in the lumber market caused Maxville's decline. When the logging operation ceased, Bowman-Hicks closed the town in 1933. Some families migrated to California to continue work in the logging industry, but Lucky Trice moved to La Grande. In the mid-1940s, a severe winter storm destroyed most of the remaining structures in

PHOTOGRAPHER UNKNOWN; MAY ANN HENDERSON COLLECTION; COURTESY MHIC

Using steam locomotives to transport lumber sixteen miles to the mill in Wallowa was not always a smooth operation. Regardless of race or ethnicity, workers cooperated to correct the situation.

PHOTOGRAPHER UNKNOWN, LIVELY COLLECTION, COURTESY MHIC

Maxville's segregated baseball teams merged when they competed against other local teams.

Maxville, leaving only the deserted company headquarters. And then Maxville truly became a ghost town.[10]

AND MAXVILLE NOW

Today the Maxville town site is private property, owned by Manulife Investment Management. At first glance, one sees few indications that four hundred people once lived here. A closer inspection, however, reveals an old water pump, the remains of the machinery workshop, some railroad and logging equipment, and the four-acre town dump. A few miles away, also on private land, stands the last of Maxville's wooden railroad trestle bridges, still spanning a gully.

The large log building that served as the Bowman-Hicks Lumber Company headquarters is gone, but only because Trice persuaded the property owner to allow her to save the building by properly documenting, dismantling, and storing it off-site.[11]

As of February 2022, MHIC has raised the funds to purchase all 96 acres of Maxville's original town site, as well as 144 acres of forested land surrounding it. Trice sees the land as 240 acres of opportunity for the community, the Maxville Heritage Interpretive Center in nearby Joseph, local schools, and the general public.

When the land purchase is finalized, the reassembled log building will serve as a space for research and education, in tandem with the MHIC Museum in Joseph. (The hope is to start reconstruction in 2023, the centennial of the town's establishment.) Trice plans to begin a robust educational program that will offer archaeological research, historical information, forestry education, and a seminar in land stewardship. In addition, she is working to offer an Outdoor School program, a legislatively mandated opportunity for every fifth or sixth grader in Oregon schools to stay overnight for up to five days outdoors—unplugged from electronic devices and engaging in natural sciences programs and experiments.[12]

Trice has already recruited several local schools and universities to help her understand and interpret the land. Rory Becker, an archaeology professor at Eastern Oregon University, says, "I think that there is a lifetime of work out there, archaeologically speaking . . . [The site] also can provide training, education, and real opportunities for folks to engage in that past."[13]

PHOTOS COURTESY MHIC

Students from Eastern Oregon University and Clatsop Community College documented and measured the log building before its disassembly in 2015.

Gwendolyn Trice in the doorway of the now disassembled log building in 2011.

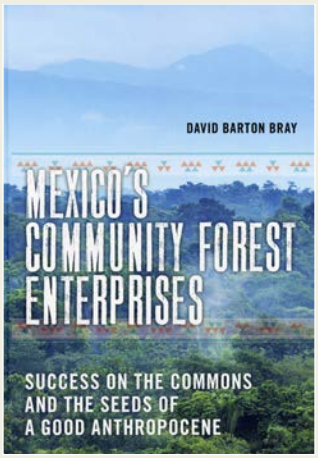
In the meantime, the MHIC Museum in Joseph is open to visitors. If you can't travel to this remote part of Oregon, you can see a collection of videos, photographs, and oral history interviews on the MHIC website at www.maxvilleheritage.org. Early on, Trice captured on video some of the former residents of Maxville; Oregon Public Broadcasting ran an episode of *Oregon Experience* called "The Logger's Daughter," which features some of those interviews.[14]

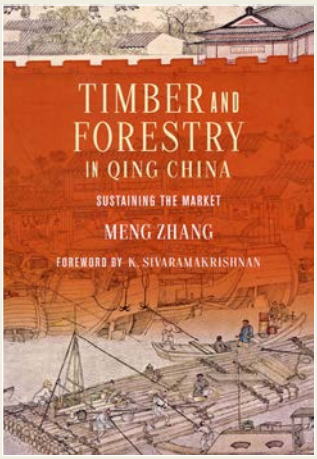
Says Trice, "When I arrived here . . . , nobody was interested in the Maxville story. . . . But now we've got a museum in the middle of Joseph and we're loved! In summer, we get hundreds of visitors every month. America is changing, doggonit!"[15]

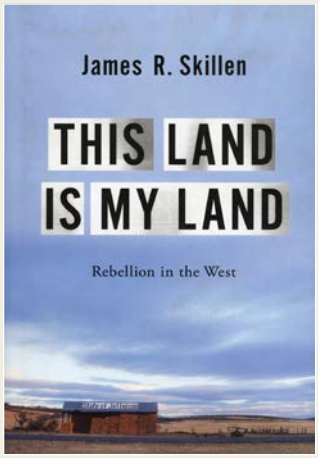
Silas Lobnibe is a recent graduate of the University of Oregon School of Journalism and Communication. He is a legislative assistant to State Senator Akasha Lawrence Spence and serves on the Maxville Heritage Interpretive Center's board of directors. Mary Oberst currently serves on the Oregon Geographic Names Board and the Oregon Encyclopedia *editorial board.*

NOTES

1. Most of the information in this column derives from three sources: the MHIC website, which includes oral histories and photographs, https://www.maxvilleheritage.org/our-story; *The Oregon Encyclopedia*, which includes entries on the Ku Klux Klan and Maxville, www.oregonencyclopedia.org; and S. Renee Mitchell, "Reaching Back for Truth," *Oregon Humanities*, August 24, 2017, https://www.oregonhumanities.org/this-land/stories/reaching-back-for-truth/.
2. Kayla Tunstall, "Maxville: The Town of Oregon's African American Loggers," *Filson Journal*, https://www.filson.com/blog/profiles/maxville-the-town-of-oregons-african-american-loggers/; see also Jack Reid, "I Wanted to Get Up and Move," *Forest History Today*, Spring/Fall 2016, 6–7.
3. Oregon voters passed the Fourteenth Amendment in 1868. Greg Nokes, "Black Exclusion Laws in Oregon," *The Oregon Encyclopedia*, https://www.oregonencyclopedia.org/articles/exclusion_laws/.
4. Robert R. McCoy, "The Paradox of Oregon's Progressive Politics: The Political Career of Walter Marcus Pierce," *Oregon Historical Quarterly* 110, no. 3 (Fall 2009): 390–419.
5. Tunstall, "Maxville."
6. Alan Dale Victor, interview by Gwendolyn Trice, date unknown, transcript on Maxville Heritage Center website, https://www.maxvilleheritage.org/oral-history-collection/alen-dale-victor. His name is sometimes spelled Alen, as it is in the interview.
7. Ester Wilfong Jr., interview by Gwendolyn Trice, date unknown, transcript on Maxville Heritage Center website https://www.maxvilleheritage.org/oral-history-collection/ester-wilfong-jr-maxville-elder-interview.
8. Quoted in Tony Perrottet, "The End of the Trail," *Smithsonian Magazine*, May 2021, https://www.smithsonianmag.com/travel/travel-guidebook-oregon-past-present-180977454/ (accessed February 4, 2022).
9. Perrottet, "The End of the Trail."
10. Grace Murray, "Defiance and Diversity in a Forgotten Oregon Ghost Town," *Daily Emerald*, January 12, 2021, https://www.dailyemerald.com/arts-culture/defiance-and-diversity-in-a-forgotten-oregon-ghost-town/article_f2f8d270-5485-11eb-801d-d7485bdf4d6f.html.
11. Steve Tool, "Saving Maxville Cabin," *Daily Astorian*, December 7, 2018, https://www.dailyastorian.com/news/local/saving-maxville-cabin/article_54281f2c-098f-55ce-a39a-c89748a1f5bc.html (accessed February 4, 2022).
12. For more on Outdoor School, see https://friendsofoutdoorschool.org/statewide-ods and https://friendsofoutdoorschool.org/what-is-outdoor-school.
13. Murray, "Defiance and Diversity."
14. Program available at https://www.opb.org/television/programs/oregonexperience/article/the-loggers-daughter-/.
15. Perrottet, "The End of the Trail."







BOOKS

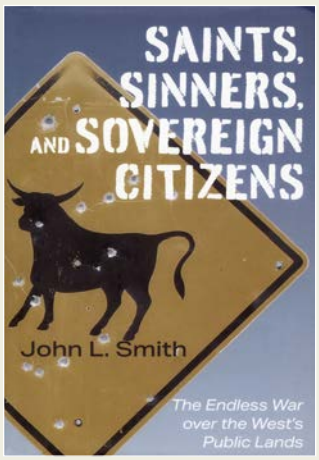
Who should steward forests for people in the developing world? The government? Private landowners? Or the communities dependent on them for their livelihoods? In ***Mexico's Community Forest Enterprises: Success on the Commons and the Seeds of a Good Anthropocene*** (University of Arizona Press, 2020), David Barton Bray shares scientific evidence for Mexico's social and environmental achievements and how it became a global model for common property forest management, sustainable socioecological systems, and climate change mitigation in developing countries.

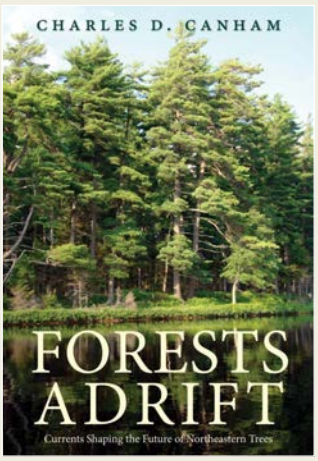
Sustainable forest management and how it led to taking a different approach to land ownership to make that possible is at the heart of Meng Zhang's ***Timber and Forestry in Qing China: Sustaining the Market*** (University of Washington Press, 2021). It became absolutely necessary during the Qing period (1644–1912), when China's population tripled and the demand for timber rose too. Though historians have often depicted it as an era of reckless deforestation, this comprehensive new study shows a more complex reality: innovative property rights systems and economic incentives that convinced landowners to invest years in growing trees emerged to develop renewable timber resources that provided a reliable source of timber for markets hundreds of miles distant in China's southwestern region. This history offers parallels to, and lessons to be learned about, today's concerns over deforestation, climate change, and global commodity trade.

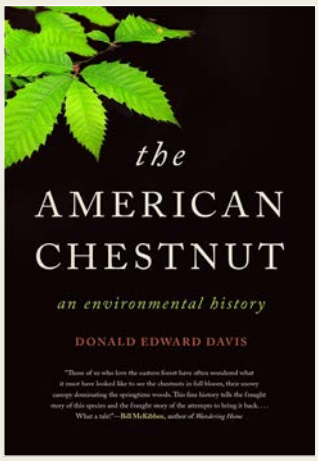
Brett J. Butler, a research forester with the U.S. Forest Service, brings two decades of research experience to ***America's Family Forest Owners*** (Society of American Foresters, 2020). Collectively, family forest owners maintain 272 million acres, which is 39 percent of the total forestland in the United States—more than any other ownership group. His findings about the nature and state of America's family forests, ownership patterns and characteristics, landowners' attitudes, forest management practices, programs and policies, and future directions are essential for anyone who seeks to understand these important forestland owners.

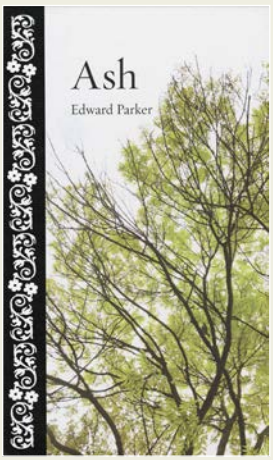
The grazing rights battle between Nevada rancher Cliven Bundy and the federal government, which resulted in an armed standoff in 2014, garnered international media attention. Two books place the Bundy conflict in the larger context of the Sagebrush Rebellion. This long-running effort to turn the West's federal public lands over to state or local control has at times enjoyed support from the White House and congressional leaders. The issues that led to it continue to simmer. Historian James R. Skillen's ***This Land is My Land: Rebellion in the West*** (Oxford University Press, 2020) examines the history of the conservative rebellion, while journalist John L. Smith's ***Saints, Sinners, and Sovereign Citizens: The Endless War over the West's Public Lands*** (University of Nebraska Press, 2021) offers the perspective of someone who witnessed the standoff.

As a forest ecologist, Charles D. Canham uses new theoretical models to predict how forest ecosystems in the northeastern United States









will change and adapt to various future scenarios. He concludes his book, ***Forests Adrift: Currents Shaping the Future of Northeastern Trees*** (Yale University Press, 2020), with the results. But first he looks at both the impermanence and the resilience of forest ecosystems in the Northeast, one of the most densely forested regions in the country, offering a historical perspective on logging, fire suppression, disease, air pollution, invasive species, and climate change since the arrival of European settlers.

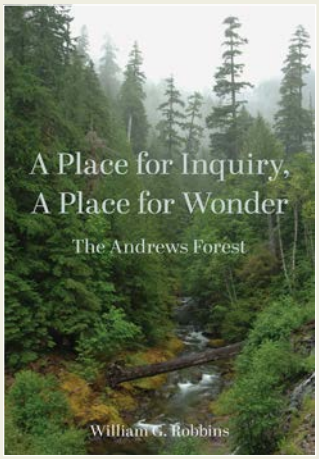
Two iconic trees that at one time could be found throughout the Northeast and beyond are the subject of excellent studies. Donald Edward Davis's ***American Chestnut: An Environmental History*** (University of Georgia Press, 2021) and Edward Parker's ***Ash*** (Reaktion Books, 2021) offer rich histories of each and remind us of their roles in shaping both the natural environment and material culture. Parker charts the evolution of this magnificent genus across the entire northern hemisphere from its origins 44 million years ago to its current 43 species. He also looks at topical issues threatening the survival of ash trees, such as the emerald ash borer beetle and the ash dieback fungal infection. Davis traces the history of *Castanea dentata* from Native American prehistory to the present, including recent attempts to genetically modify the species.

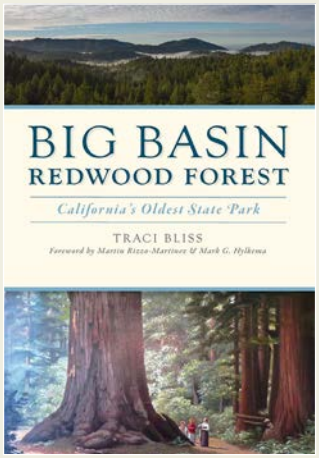
The H. J. Andrews Experimental Forest was founded in 1948 by the U.S. Forest Service due east of Eugene, Oregon, in the Cascade Mountains. It comprises almost 16,000 acres of the Lookout Creek watershed and, since 1980, has been part of the Long-Term Ecological Research network. In ***A Place for Inquiry, A Place for Wonder: The Andrews Forest*** (Oregon State University Press, 2020), historian William G. Robbins sets the history of the Andrews Forest within the broader context of state and national affairs (such as the northern spotted owl controversy) and argues for its importance to environmental science and policy.

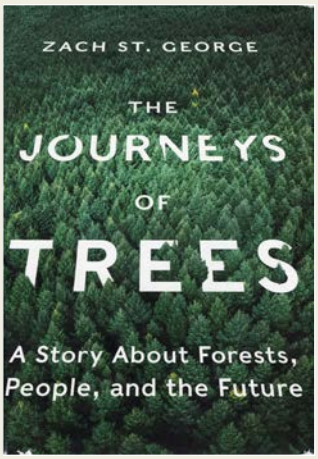
Established in 1902, Big Basin State Park is located just south of the San Francisco area. Its creation was the result of an unprecedented effort by the Golden State's citizenry. In ***Big Basin Redwood Forest: California's Oldest State Park*** (The History Press, 2021), Traci Bliss offers a beautifully illustrated history of that effort, as well as a discussion of ongoing issues with managing the park for public use such as recovery from the CZU Lightning Complex fires in August 2020.

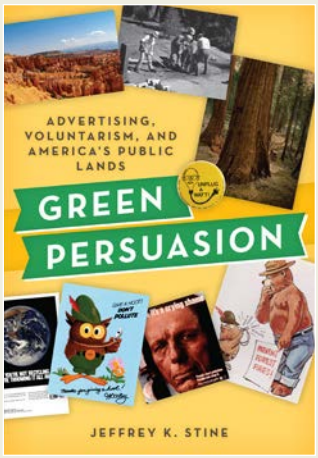
Forests naturally migrate, but obstacles—humans, invasive species, and climate change—are interfering with that movement. In ***The Journeys of Trees: A Story about Forests, People, and the Future*** (W. W. Norton, 2020), Zach St. George, a science reporter, explores the evolving movements of forests by focusing on five trees around the world: giant sequoia, ash, black spruce, Florida torreya, and Monterey pine. The author meets people on conservation's front lines, from an ecologist studying drought to an evolutionary evangelist with plans to save a dying species. St. George treks through the woods with activists, biologists, and foresters, each with their own role to play in the fight for the uncertain future of our environment.

Jeffrey Stein's ***Green Persuasion: Advertising, Voluntarism, and America's Public Lands*** (Smithsonian Scholarly







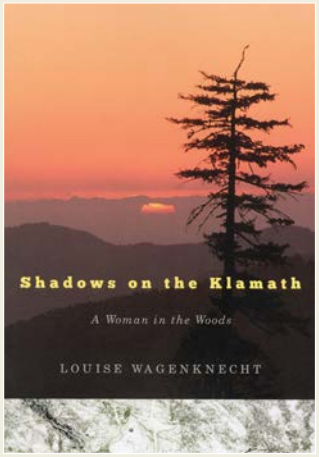


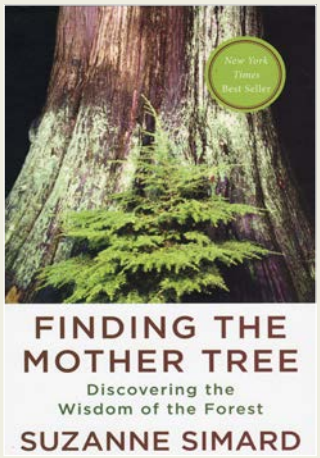
Press, 2021; free at scholarlypress.si.edu) starts by tracing the history and evolution of volunteer-based public lands stewardship in the United States as well as the Advertising Council's work promoting environmental causes, such as the Smokey Bear campaign. The book's focus, though, is on the Take Pride in America program. Launched in 1985 by the Reagan administration and overseen by the U.S. Department of the Interior, Take Pride was a public relations effort used to deflect attention from the administration's controversial environmental record. It built on the volunteer tradition by giving more responsibilities to volunteers, even shifting paying jobs to volunteers while simultaneously limiting federal funding for environmental protection. Subsequent administrations have revised, neglected, and readopted Take Pride in America; today, it still exists on paper but is not being promoted.

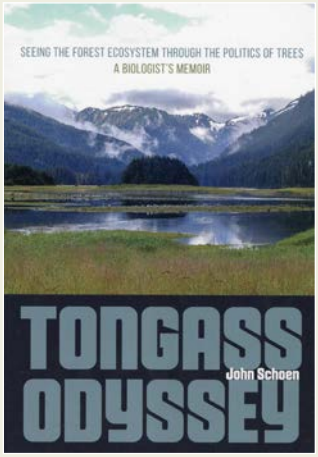
Of the thousands of wildland firefighters who battle California's blazes every year, roughly 30 percent of the on-the-ground wildland crews are inmates who can earn about five dollars a day. Approximately two hundred of those firefighters are women serving on all-female crews. Having spent years getting to know dozens of women in the fire camp program, Jaime Lowe provides an illuminating look at how the fire camps actually operate. In ***Breathing Fire: Female Inmate Firefighters on the Front Lines of California's Wildfires*** (Farrar, Straus and Giroux, 2021), Lowe captures California's underlying catastrophes of climate change, economic disparity, historical injustice, and the emotional and physical intensity of firefighting.

With ***Shadows on the Klamath: A Woman in the Woods*** (Oregon State University Press, 2021), Louise Wagenknecht completes her trilogy about life in remote northwestern California. In this new work, she recounts her years in the U.S. Forest Service, starting as a clerical worker on the Klamath National Forest before moving to a field position where she did everything from planting trees to fighting fires. Her story is about a Forest Service in transition as forest management practices began to shift. Not least among the changes was the presence of women in the ranks—a change that many in the Forest Service resisted.

Three books mix memoir with scientific work. Suzanne Simard's ***Finding the Mother Tree: Discovering the Wisdom of the Forest*** (Alfred A. Knopf, 2021) made headlines when published, and for good reason. It recounts the author's profound discoveries about communication among trees in the forest. Simard's research has demonstrated that trees are social, cooperative creatures connected through underground networks of roots and mycelium by which they communicate their vitality and vulnerabilities. They have communal lives, not entirely different from our own, and a complicated, interdependent cycle of life. At the center of their networks are the "mother trees": the mysterious, powerful matriarchal trees that connect and sustain the others that surround them. As a forest ecologist from a logging family in British Columbia, Simard also writes about her personal journey toward understanding who we are, where we fit in the







world, and how the mother trees nurture the forest in profound ways, much as families and societies maintain humankind.

In ***Tongass Odyssey: Seeing the Forest Ecosystem through the Politics of Trees—A Biologist's Memoir*** (University of Alaska Press, 2020), John Schoen offers stories related to his dealings in the Tongass National Forest. As a science-based manuscript, it addresses the ecological and political history of the past fifty years of the Tongass. It also considers the responsibility of conservation practitioners regarding the consequences of public lands and water management.

Conservation biologist, botanist, and conservationist Meg Lowman—aka "Canopy Meg"—has spent forty-plus years studying what is going on in tree canopies around the world, a place few people have been and even fewer have studied. Her memoir, ***The Arbornaut: A Life Discovering the Eighth Continent in the Trees Above Us*** (Farrar, Straus and Giroux, 2021), takes us on an adventure into the unexplored "continent" of the world's treetops.

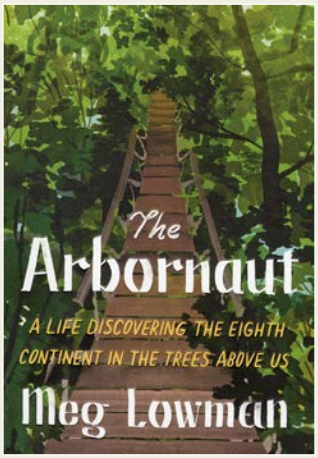
Next are books for the young forest history enthusiast. First is the picture-book biography ***Headstrong Hallie! The Story of Hallie Morse Daggett, The First Female "Fire Guard"*** (Sleeping Bear Press, 2021), by Aimée Bissonette, for ages six to ten. In the early twentieth century, the U.S. Forest Service wouldn't hire women to serve as fire lookouts, arguing they couldn't handle the physical challenges of the work. On the Klamath National Forest in northern California, the man in charge of hiring had no good male candidates and, hesitantly, recommended Hallie Morse Daggett for the job. As the first woman "fire guard" employed by the U.S. Forest Service, she served with distinction for fifteen seasons.

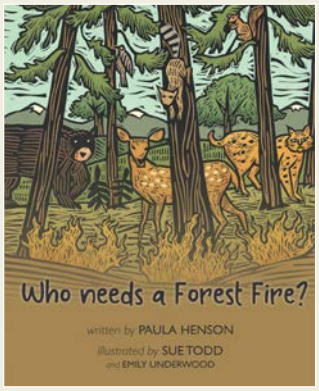
Paula Henson, a Los Angeles–based environmental educator, helps children ages five to nine understand the ecological role of wildfire in California in ***Who Needs a Forest Fire?*** (Terra Bella Books, 2021). Henson starts with how Native Americans used fire as a tool for thousands of years, then turns to the arrival of White settlers, who held opposite attitudes about fire. The imposition of a "no burn" policy by state and federal governments transformed the forest ecosystem, creating conditions that greatly contribute to today's major wildfires. A teacher's guide is available through the publisher's website.

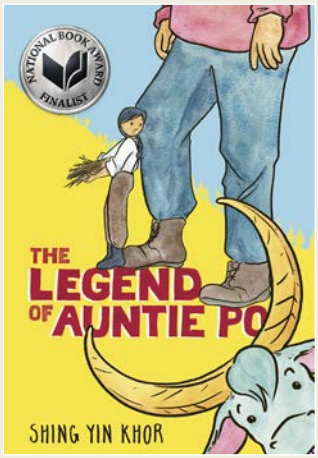
Shing Yin Khor's graphic novel, ***The Legend of Auntie Po*** (Penguin Random House, 2021), follows a 13-year-old Chinese American camp cook as she tells Paul Bunyan stories (reinvented as an elderly Chinese matriarch named Auntie Po) in a Sierra Nevada logging camp in 1885. Aimed at middle school–aged readers, this beautiful book (nominated for the National Book Award) brings to light underexamined aspects of logging camp life of that era, Chinese-American contributions to forest history, and issues of racial tumult following the Chinese Exclusion Act.

VISUAL MEDIA

Cypress (*Taxodium distichum*) has a rich legacy in southern Louisiana. Its haunting beauty has inspired art, folklore, music, film, and advertising. More than a century ago, the Atchafalaya Basin swamp



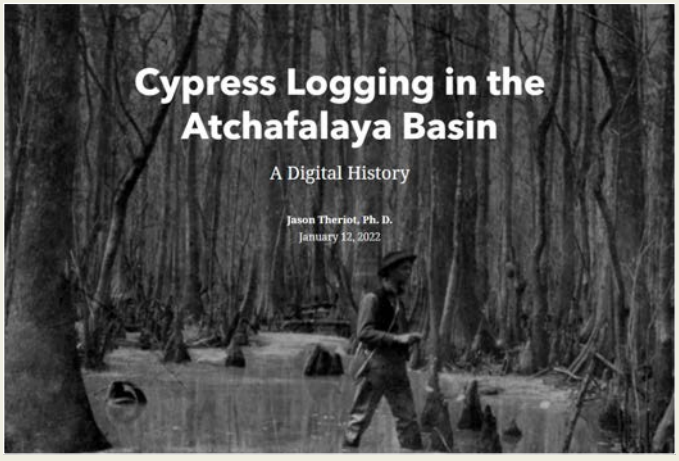


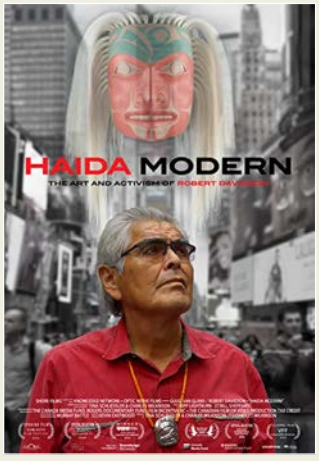


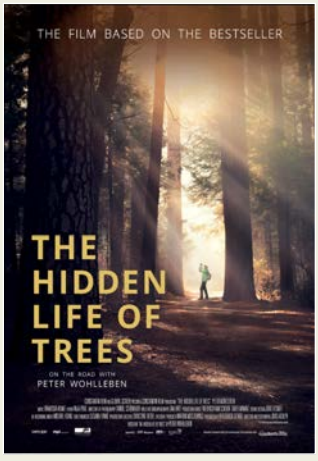
contained the largest and oldest cypress forest in the country. Jason Theriot, an independent historian and consultant, has created the ***Cypress Logging in the Atchafalaya Basin: A Digital History*** to document the story of the cypress logging industry, using images, maps, records, and personal testimony of people who had a long association with cypress. The exhibit is at https://tinyurl.com/mpbvuvv2.

Haida artist Robert Davidson is an internationally lauded printmaker, painter, jeweler, and carver of totem poles and masks. The documentary ***Haida Modern: The Art & Activism of Robert Davidson*** (Shore Films, 2020) features candid conversations with Davidson, along with commentary from art historians, politicians, musicians, and family members detailing the significance of Davidson's work. Central to the telling of Davidson's story is his carving the first totem pole raised on the island of Haida Gwaii in Canada's Pacific Northwest in more than a hundred years—a spiritual and political act credited with sparking a reawakening of Indigenous culture in the region and inspiring political activism involving Indigenous and non-Indigenous citizens alike.

The Hidden Life of Trees (Constantin Film, 2020) is based on the bestselling book by the same name written by German forester Peter Wohlleben. The film explores his experience (and thesis) that trees are able to communicate with each other and are sentient, while offering breathtaking nature footage as viewers travel with him through Germany, Poland, Sweden, and Vancouver.







Thank you for generously supporting the Forest History Society! This list includes gifts from July 1, 2020, to June 30, 2021.

**Denotes current and former board members. † Denotes deceased. Please contact Laura Hayden at (919) 660-0552 with any questions, errors, or omissions.*

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We are honored to recognize these individuals for their legacy commitment to the Society's future:

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WELCOME NEW FHS MEMBERS!

*We are delighted to welcome these new members who joined during fiscal year July 1, 2020 – June 30, 2021. Members indicated with an * hold joint membership in FHS and the American Society of Environmental History.*

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Roseburg Forest Products
Barbara Scheftner
Ashley Schulz
Gordon Stuart
Tanya Tellman
Timber Products Company
Joanne Tremelling
Robert Weise*
Western Forestry Contractors' Association

Anderson, Steve: Twenty-seven books from the *American Wilderness/ Time-Life Books* series; one record player; two vinyl LP records: *3 Little Pigs* (1961) and *Bambi* (1969).

Barber, Bill: Two books, *Buffalo City and the Blount Patent: A History of Logging the Dare Mainland* and *Tyrell Timber: A History of the Branning Manufacturing Company and Richmond Cedar Works* by Bill Barber.

Bathgate, Kristi: Two wooden boxes of original lumber company wood samples, given away as promotional items. Labeled "National Lumber Manufacturers Association and W. H. Sawyer Lumber Co."

Bissonette, Lauren: One book: *Campfire Stories: Tales from America's National Parks*, edited by Dave Kyu and Ilyssa Kyu.

Cadamatre, Brian: A photograph collection of A. B. Recknagel, ranging from private family photos to his forestry-related activities, i.e., touring the country looking at forest operations as well as summer camps. Includes a few photos with Dr. Bernhard Fernow, Albrecht Pagenstecher, among others.

Cantrell, Rick: Six banker boxes of forestry books, also SFI historical files.

Case, John P.: Twenty-eight books and U.S. Forest Service publications, mainly covering the histories of various national forests.

Courson, Greg: Personal (unpublished) memoir: "Blazing Gnomes: Seven Seasons with the U.S. Forest Service" by G. D. Courson; print manuscript and USB drive.

Dunsky, Steve: Two boxes of U.S. Forest Service publications, newsletters, clippings, files; some related to *The Greatest Good* documentary film.

Fournier, Craig: Books: *Guides for Controlling Soil Erosion and Stream Pollution on Logging Jobs in Southern Vermont* (Windham County Natural Resources Conservation District); *Tables for Estimating Board-Foot Volume of Timber* (USDA); *Field Reference Handbook for Service Foresters* (USDA); *Handbook for Rangers and Woodsmen* (Jay L. B. Taylor); *Instructions for the Scaling and Measurement of National-Forest Timber* (USDA); *Land Cruising and Prospecting* (A. F. Wallace); *Log Scaling and Timber Cruising* (J. R. Dilworth); *Elementary Surveying* (Russell C. Brinker and Warren C. Taylor); *The Pine Tree Shield* (Elizabeth C. Flint); *Camping and Tramping with Roosevelt* (John Burroughs); *Rangers of the Shield* (Ovid Butler, ed.); *The Log of a Timber Cruiser* (William Pinkney Lawson).

Godden, Dottie: A small collection of papers and documents of Jack A. Godden, related to fire suppression on the Nez Perce, Shasta-Trinity, and White Mountain National Forests.

Goldammer, Johann G.: One pallet of boxes from the Global Fire Monitoring Center (GFMC). Includes publications, books, brochures, etc., on forestry and forest fire from various countries.

Gunderson, Dave: Books: *The Hidden Northwest* by Robert Cantwell; *Mighty Men of the Forest* by Ray V. Fetterly; *A Day on the Ridge* by Gary Collins; *Rainforest Relations* by Melissa Leach; *People Managing Forests* edited by Carol J. Pierce Colfer and Yvonne Byron; *African Game Trails: An Account of the African Wanderings of an American Hunter-Naturalist* by Theodore Roosevelt (1988 reprint); *A Clearing in the Distance: Frederick Law Olmsted and America in the 19th Century* by Witold Rybczynski; *The Lagoon: How Aristotle Invented Science* by Armand Marie Leroi; *The Land of Ghosts: The Braided Lives of People and the Forest in Far Western Amazonia* by David G. Campbell; *The Swamp; Rising: Dispatches from the New American Shore* by Elizabeth Rush; *Nafanua: Saving the Samoan Rain Forest* by Paul Alan Cox; *The Story of Lytle Creek Canyon* by Virginia R. Harshman; *Zoro's Field: My Life in the Appalachian Woods* by Thomas Rain Crowe; *The Voyage of the Sanderling: Exploring the Ecology of the Atlantic Coast from Maine to Rio* by Roger D. Stone; *Small Stories, Big Changes: Agents of Change on the Frontlines of Sustainability* by Lyle Estill; *The Man Who Climbs Trees* by James Aldred; *The Language of Trees* by Steve Wiegenstein.

Huppuch, Charles: Books: *Park and Recreation Structures, Parts I–III* by Albert H. Good, National Park Service.

Iffrig, Greg (**L-A-D Foundation**): L-A-D Foundation (owners and managers of Pioneer Forest) published annual reports from 2008 to 2020.

Izlar, Bob: Four boxes of books and other publications relating to forests, forestry, and forest products of the U.S. South. This includes a small collection of the personal books of Clarence Korstian (founding dean of the Duke University School of Forestry). The donation also featured personal mementos collected by Izlar during his career, including items from various association meetings and other events. Additional items of note included historic naval stores relics (cup, aprons, and gutters), and used forest boundary markers (metal signs).

Karns, Jameson: An envelope of letters, postcards, and telegrams, sent by Carl Schenck to his wife, 1930s (approximately 90 items); *Frederike Schenck 1887: A Young Lady's Diary* (2010), published by Merck Corporate History; bound copy of "George Merck, 1867–1926: For His Children and Grandchildren, from Uncali"; copies of articles, including: "Forestry: A New Profession" by Leah Brickett and "Goethe and the Tree" by C.A. Schenck.

Kneipp, Thomas Leon: Small collection of photographs and clippings related to Leon F. Kneipp.

Lansing, William: Two signed copies of books by the donor: *The Mills that Built Coos Bay, Oregon and the Men Who Made it Happen*.

Leefers, Larry: Two boxes of publications related to the Symposium on Systems Analysis in Forest Resources, 1970s to 2000s

Leuschner, William: *Calders' Forest Road Engineering Tables* by Lester E. Calder, Douglas G. Calder.

Lint, Joe: Five boxes of publications, clippings, and research files materials related to the Northern Spotted Owl.

Mackovjak, Jim: Tongass National Forest map; *Pocket Guide to Alaska Trees*, 1950; *The Forestry Primer*, 1933; *The Distribution and the Mechanical Properties of Alaska Woods*; *Tongass National Forest*, 1940; *Guide to Alaska Trees*, 1974; *The Forests of Alaska*, 1910.

Miller, Janil: Program from 2003 World Conference on Natural Resource Modeling, June 17–19, 2003.

Niskala, George: Books: *Manual for a Short Course on Properties and Identification of Wood* by James Pastoret; *Bull Cook, Recipes and Practices* by George Leonard Herter; *California Heritage: A History of Northern California Lumbering* by William Henry Hutchinson.

Olberding, Susan Deaver: Historic report by A. C. Ringland on Italian land use, circa 1930s: *'Bonifica Integrale': The Italian National Plan of Land* by Arthur C. Ringland.

Peterson, James: Two copies of *First, Put Out the FIRE* by James D. Peterson.

Robertson, Peter T.: Special edition of *The Log* (Champion Paper and Fibre Co. publication), April 1960 – memorial issue on Reuben B. Robertson Jr.

Slagle, Edward S.: Book: *Recalling the Civilian Conservation Corps: The History of the CCC* by Edward S. Slagle.

Small, Gordon: "Forest Revenue Sharing: History, Alternatives, and Issues," thesis by Patrick H. Corts; *Forest Statistics for the Mountain Region of North Carolina, 1955* by James F. McCormack; *Forest Statistics for the Mountains of North Carolina, 1990; Forest Resources of the Mountain Region of North Carolina* by J. W. Cruikshank.

Summerville, K. O.: Two historic Herty cups; one preserved Longleaf pine catface.

Taylor, Frank: Book, *Generations of Pride: A Centennial History of International Paper* (1998).

Walters, Brandon: Seventeen books on forestry: *Free Market Environmentalism* by Terry L. Anderson and Donald R. Leal; *The Big Burn* by Timothy Egan; *Forestry Research* by the National Research Council; *Ecoagriculture* by Jeffrey A McNeely and Sara J. Scherr; *Investing in Nature* by William J. Ginn; *My Healthy Woods* by the Aldo Leopold Foundation; *Nature's Fortune* by Mark R. Tercek and Jonathan S. Adams; *The Nature Principle* by Richard Louv; *Wood Urbanism* by Daniel Ibanez, Jane Hutton, and Kiel Moe; *Harvesting the Biosphere* by Vaclav Smil; *Undervalued Hardwoods for Engineered Materials and Components* by the USDA; *Ochoco* by Rick Steber; *Genetically Engineered Forest Trees* by the Institute of Forest Biotechnology; *Forest Health and Biotechnology* by the National Academies of Sciences, Engineering, and Medicine; *American Chestnut* by Susan Freinkel; *Forest Products Laboratory, 1910–2010* by John W. Koning Jr.; *Fire Season* by Philip Connors.

White, Jane R.: Seven boxes of U.S. Forest Service diaries of Elijah Reese McKee from 1910–1928, documenting work on the Choctawhatchee National Forest in Florida. Donated by Jane R. White in memory of her mother, Grace Eleanor McKee White, daughter of Elijah Reese McKee.

HELP SAVE FOREST HISTORY!

That's what the people who gave the gifts shown here did. They contacted the Forest History Society about saving archival materials before they were lost forever.

If you know of a collection of documents, books, or photos in need of a permanent home, email the FHS library staff today at: **library@foresthistory.org**

The Forest History Society Awards program enables the Society to recognize research and writing in forest and conservation history and to stimulate further research into our understanding of the relationships of people and forests. The following is a list of awards for 2020–2021.

THEODORE C. BLEGEN AWARD

The Theodore C. Blegen Award recognizes the best article in the field of forest and conservation history that is not published in *Environmental History*. **Lee Whittlesey** won for "Abundance, Slaughter, and Resilience of the Greater Yellowstone Ecosystem's Mammal Population: A View of Historical Record, 1871–1885," published in *Montana The Magazine of Western History*. The article reveals that while subsistence hunting by indigenous inhabitants and Euro-American settlers affected the greater Yellowstone region's wildlife populations, it was unregulated commercial hunting and thrill killing that increased the number of mammals killed to the level of wholesale slaughter between 1871 and 1885.

CHARLES A. WEYERHAEUSER BOOK AWARD

The Charles A. Weyerhaeuser Book Award rewards superior scholarship and fresh insights in forest and conservation history. **David Fedman** won for *Seeds of Control: Japan's Empire of Forestry in Colonial Korea* (University of Washington Press, 2020). The book explores Japanese imperialism through the lens of forest conservation in colonial Korea—a project of environmental rule that outlived the empire itself. It examines the roots of Japanese ideas about the Korean landscape and the consequences and aftermath of Japanese approaches to Korean "greenification."

LEOPOLD-HIDY AWARD

Named for forester and ecologist Aldo Leopold and business historian Ralph Hidy, this award honors the best article published in the journal *Environmental History* during the preceding year, and is presented jointly by the American Society for Environmental History and the Forest History Society. **Elizabeth Hennessy** received the 2021 Leopold-Hidy Award for her article, "Saving Species: The Co-Evolution of Tortoise Taxonomy and Conservation in the Galapagos Islands," which uses a case study of Galapagos tortoises to explore "the question of how we understand what species are," a question of obvious, indeed crucial, importance in an era marked by rapid and ongoing extinction. It was published in the April 2020 issue.

JOHN M. COLLIER AWARD FOR FOREST HISTORY JOURNALISM

The John M. Collier Award annually recognizes an author for the best article about forest and conservation history published in a newspaper, trade publication, or general circulation magazine. **Gabriel Popkin** won in 2021 for the article, "Can Genetic Engineering Bring Back the American Chestnut?" published in the April 30, 2020, edition of the *New York Times Magazine*. It tells the story of an attempt through genetic engineering to rescue and restore the American chestnut tree, which was all but wiped out by 1940 because of a blight, to eastern U.S. forests. Popkin includes a summary of the environmental and cultural histories of the species and the fungus that decimated an estimated three billion trees.

FREDERICK K. WEYERHAEUSER FOREST HISTORY FELLOWSHIP

This is awarded annually to a student at the FHS university affiliate, Duke University, whose research is historical in nature and related to forestry, land use, or the environment. **Vivien Rendleman** is a PhD student in the Department of History at Duke University. She received the 2021 Weyerhaeuser Fellowship award for her project, "Unfree Soil: Empire, Labor, and Coercion in the Upper Mississippi River Valley, 1803–1861." Rendleman's dissertation asks how the geography of the Upper Mississippi River Valley shaped relationships of work and power in the nineteenth-century United States by centering the region's Native American people and their lifeways, as well as the historical role of non-human nature.

WALTER S. ROSENBERRY FELLOWSHIP IN FOREST AND CONSERVATION HISTORY

This annual fellowship provides a stipend to support the doctoral research of a graduate student attending a university in North America whose research contributes to forest and conservation history. **Kyuhyun Han** is a PhD candidate in the Department of History at the University of California, Santa Cruz, and is focusing on the study of human-animal relations in modern Chinese history, specifically focusing on the history of the People's Republic of China. Her research project, "Seeing the Forest Like a State: Forest Management, Wildlife Conservation, and Center-Periphery Relations in Northeast China, 1949–1988," challenges the premise that the Mao era was devoid of environmental protection policies by considering Chinese scientific discussions and conservation policy in the context

of the international development of environmental consciousness during that time.

FELLOW OF THE FOREST HISTORY SOCIETY AWARD

In 2021, the FHS board of directors unanimously and posthumously recognized **Peter Murphy** as Fellow of the Forest History Society, the Society's highest honor given to persons who have provided many years of outstanding leadership and service to the Society or many years of outstanding sustained contributions to the research, writing, or teaching of forest, conservation, or environmental history. Peter Murphy excelled at both. He joined FHS in 1986 and quickly proved an enthusiastic member. In short order, he joined the board of directors and served as chair in the 1990s. Peter was instrumental in strengthening relationships between the Forest History Society and Canada. He was coauthor of the FHS collaborative publication *A Hard Road to Travel: Land, Forests, and People in the Upper Athabsca Region*, one of his many books on forestry in Alberta and Canada, and he was the founding force behind the Forest History Association of Alberta.

ALFRED D. BELL JR. TRAVEL GRANT RECIPIENTS

Kelly Kay, an assistant professor of Geography at UCLA, conducted research for a project looking at the restructuring of the U.S. forest products industry, particularly with regard to ownership structures. This included changes such as the conversion to Real Estate Investment Trusts (REITs), and the selloff of land or processing facilities.

Tatiana Konrad is a postdoctoral researcher in the Department of English and American Studies at the University of Vienna, Austria. Her project traced the cultural history of climate change as reflected in literature, looking at transformations of the environment as well as of socio-political and eco-cultural thought since the Industrial Revolution.

Kerri Dean is a PhD candidate in American History, with minor fields of Environmental History and Museum Studies, at Claremont Graduate University in California. Her dissertation examined how the changing values attached to the Christmas tree in the United States have reflected shifts in American culture and society.

Bert Geyer is a lecturer in the Art and Design Department at Chicago State University. He visited FHS to research the history of the Nebraska National Forest, the Bessey Tree Nursery, and early tree planting efforts in Nebraska.

Ian Snider is a PhD candidate in Forest Resources at Clemson University. He used FHS resources to conduct an in-depth literature review on the history of draft animal logging in Appalachia and how it informs Artisan Forestry's future.

Shing Yin Khor is a Malaysian-American cartoonist and experience designer making stories about immigrants trying to find a home in nostalgic Americana. They examined the William B. Laughead Collection and other materials about the legendary figure Paul Bunyan.

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Other Publications

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George S. Long: Timber Statesman, Charles E. Twining, $19.95
Phil Weyerhaeuser: Lumberman, Charles E. Twining, $10.00
The U.S. Forest Service: A History (Centennial Edition), Harold K. Steen, cloth $30.00, paper $20.00

Digital Media Available from FHS

America's First Forest: Carl Schenck and the Asheville Experiment (55 min.); *First in Forestry: Carl Alwin Schenck and the Biltmore Forest School* (28 min.), $24.95 (DVD)
The Greatest Good: A Forest Service Centennial Film (2005), $18.00 (DVD)
The Greatest Good film soundtrack (2005), $15.00 (Audio CD)
Timber on the Move: A History of Log-Moving Technology (1981), $20.00 (DVD)
Up in Flames: A History of Fire Fighting in the Forest (1984), $20.00 (DVD)

For a list of oral history interviews available for purchase, visit: ForestHistory.org/ohi.

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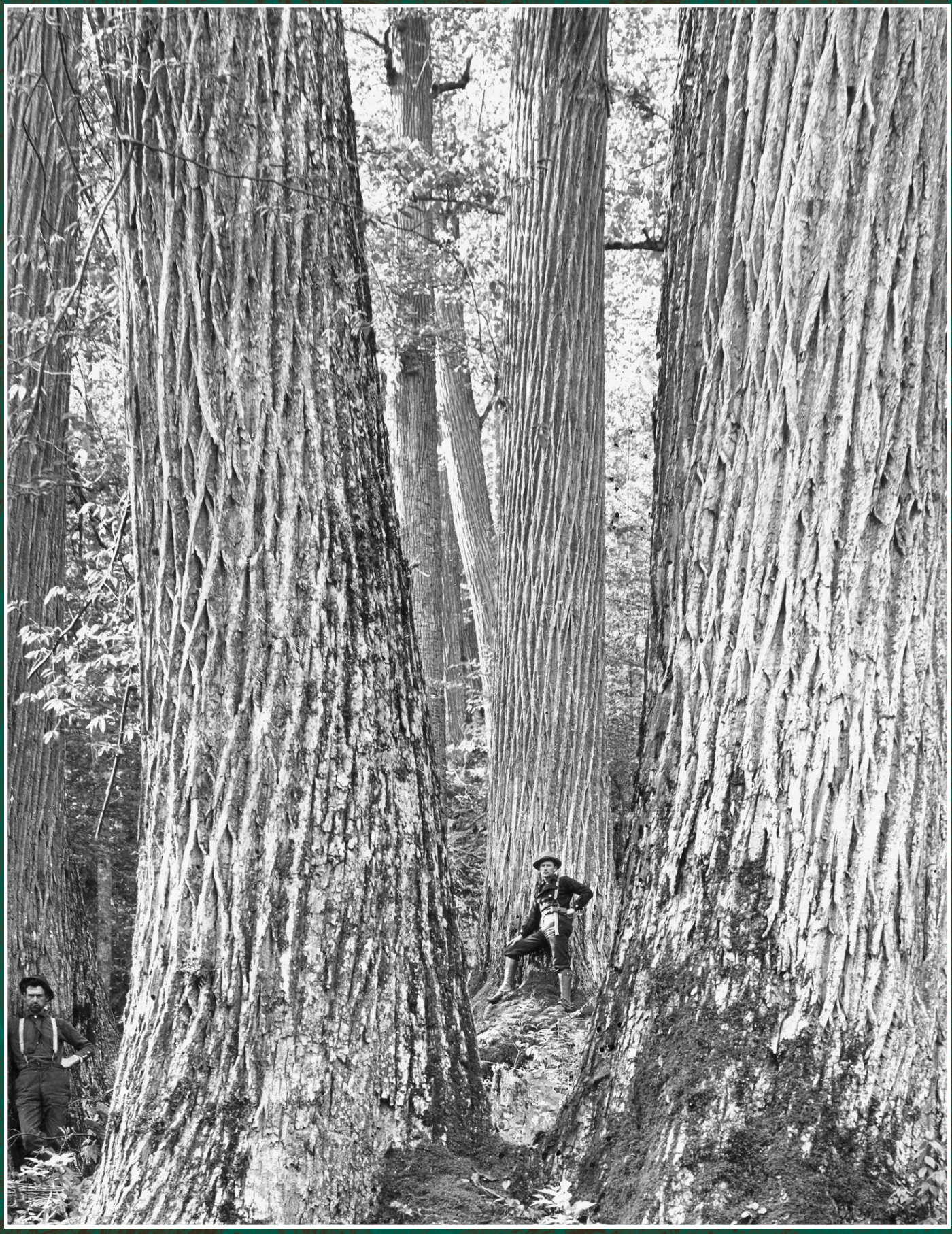

According to archivist Eben Lehman, this 1907 image of American chestnut trees "is by far the one most requested for use" in the Forest History Society's photograph collection. See page 5 to learn more.