

Forest History Today



MESSAGE FROM THE PRESIDENT

Looking Back as We Look Forward

STEVEN ANDERSON

The Forest History Society is about to reach an important milestone in its 72-year history. By early 2019, FHS will occupy the first building designed to accommodate its unique collections and important work of preserving and helping people use the documents of forest history.

Following its founding in 1946, under the auspices of the Minnesota Historical Society, FHS was an affiliate (and tenant) of Yale University and later the University of California–Santa Cruz. In the early 1980s, the Society moved to Durham, North Carolina, to be affiliated with Duke University. In Durham, FHS's home has been a repurposed, 1950s-era, 6,000-square-foot insurance building that for several years now has been inadequate to meet the needs of our growing collections. At 16,750 square feet, the new headquarters will not only provide much-needed space for the Society's archives and library but also add critical dedicated areas for digitization and processing, a soundproof oral history room, and flexible meeting space.

As we look forward to new opportunities it is also important to recognize how far we've come since 1946. I thought it would be interesting to look back to the year of our founding and see what has transpired in American society vis-à-vis our relationship with forests. Reviewing events reminds us of the context of forest history and how it applies to some of our current challenges.

At the end of World War II, returning service members faced major shortages in jobs and housing. As couples married and began families, what we now call the Baby Boom began. Within a few short years, jobs returned, incomes rose, and housing construction increased, placing significant stress on natural resources, especially forests. Industrial timberlands had already been heavily harvested in support of the war effort; now, public land-management agencies were asked to increase their timber output to keep up with demand.

The implications were many. As disposable income rose, people embraced outdoor recreation and ventured into more remote public lands, many affected by postwar tree harvesting. The resulting conflicts over resource use led to the promulgation of environmental laws in the 1960s and 1970s. Although the boom in housing eventually eased, harvesting on national forests and other public lands remained aggressive partly because of the fiscal incentives built into agency budgets. Litigation and gridlock ensued as these incentives clashed with the public's broadening environmental concerns. In response, as logging on public lands became more challenging, the forest industry again looked to private lands for timber.

From industry's perspective, investment in cooperative forest research during the last half of the twentieth century produced some of the most significant increases in forest productivity ever



seen. Industry reduced its dependence on timber from public lands and made long-term commitments to land management. Events external to the United States, such as the fall of the Soviet Union and increased forest production in South America and elsewhere, changed the price structure of raw materials. Combined with changes in U.S. federal tax laws, this led to the mass transfer of forestland during the past 30 years from vertically integrated forest companies to timber investment management organizations.

These events, the people, and the land are connected, and we to them. But these are just some of the stories that the Forest History Society's library and archives preserve and can share. And

they are from one country, and cover one short period of time. FHS has materials covering many countries throughout recorded history. The lessons to be found in our documents speak to us today and can inform future generations, but only if they are available for use. We must make the materials accessible to help researchers and writers reach and disseminate the most applicable information. We must be able to support or correct historical interpretation with integrity. It is important because facts matter.

Just a few short years after the establishment of the Society came the dedication of the Gifford Pinchot National Forest. At the ceremonies on October 15, 1949, Cornelia Bryce Pinchot, widow of the late founding chief of the U.S. Forest Service, stated, "Conservation is today more than ever a philosophy of dynamic democracy. Still to be conceived not only in terms of science and techniques, but primarily in relation to men and to women. Their needs. Their aspirations. Their social demands. That fact is what gives conservation its basic unity. As such it is central to the domestic and international objectives of the American people."

Her words are as relevant today as they were in 1949. The Forest History Society continues to link the past to the future by documenting the evolution of conservation philosophies and the changing demands people place on our forests.

An expanded, state-of-the-art FHS headquarters will be the new nexus for forest and conservation history inquiries from around the world. With greater capabilities than any previous generation could have imagined, it will serve as a research home for our members, a source of pride for the greater forest and conservation community, and a treasure trove for current and future generations.

Your support over the years has put the Society in a position to serve audiences more effectively in the future. Students, teachers, journalists, landowners, and many others will benefit. We hope you will now join others in supporting the Forest History Society's work with a contribution to the Building on History Campaign and through your ongoing support of the Annual Fund. □

CONTENTS

FALL 2017

Forest History Today

A PUBLICATION OF THE
FOREST HISTORY SOCIETY
DURHAM, NC

Vol. 23, No. 2
Fall 2017
Published June 2018



FOREST HISTORY
SOCIETY

EDITOR

James G. Lewis

EDITORIAL CONSULTANTS

Sally Atwater and Dianne Timblin

CONTRIBUTING EDITORS

Andrea Anderson,
Steven Anderson, Janet Askew,
Jason Howard, and
Eben Lehman

DESIGN

Zubigraphics

Forest History Today is published by the Forest History Society to keep readers apprised of the best forest history writing and FHS activities.

Please send article proposals to Jamie Lewis, 701 Wm. Vickers Avenue, Durham, NC 27701, 919/682-9319 or e-mail to: james.lewis@foresthistor.org.

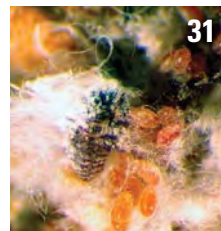
ON THE COVERS

Front: "Indian 'Wickiup' in North fork country," Charles H. Shinn, U.S. Forest Service
Back: Walt Disney's Bambi, USDA National Agricultural Library

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



FEATURES



-
- 3 Native American Land Ownership in California's National Forests
LARISA K. MILLER
- 14 Slow Awakening: Ecology's Role in Shaping Forest Fire Policy
STEPHEN F. ARNO
- 22 Causes and Consequences of the First Lumber Boom in the Gulf South
MASON C. CARTER AND JAMES P. BARNETT
- 31 The Plight of the Hemlock in Eastern Forests
SARA DEFOSSETT
- 40 "New Faces, Same Old Values": A History of Discrimination in the Forest Service
JAMES G. LEWIS
- 48 The Trouble with Thoreau's Wilderness
RICHARD W. JUDD
- 56 "Freedom in the Midst of Nature": German Prisoners of War in Riding Mountain National Park
MICHAEL O'HAGAN

DEPARTMENTS

-
- 63 Biographical Portrait: Charles William Garfield (1848–1934)
JOSEPH J. JONES
- 68 History on the Road: Catoctin State Park
THOMAS J. STRAKA AND JAMES G. LEWIS
PHOTOS BY PATRICIA A. STRAKA
- 73 Books of Interest
JASON HOWARD, EBEN LEHMAN, AND JAMES G. LEWIS

EDITOR'S NOTE

by James G. Lewis

I was recently talking with someone about our new building, which we expect to move into come the autumn of 2018. As part of the conversation, I was explaining what the Forest History Society does—that we are a library and archives open to all researchers, and that we hold records from all kinds of organizations—from the tree huggers to the tree cutters, is how I characterize it. We provide them access to the facts, but it's up to them to assemble them and form their own interpretations. "It's like our new building," I said. "Facts are the foundation of history. The documents and photographs our building will house are a historian's construction materials. Historians can go through and select their materials, and then build their structures of interpretation on top of that. Some are small, like articles. Those might be houses. Books are like office buildings. But each historian designs their own building. And our library will be like a city, home to a combination of houses and buildings—in this case, journals and books."

I could've kept going with the analogy but stopped for fear of boring my friend. So instead I said that even though he wasn't a historian, I hoped that once the building opened, he'd come visit so I could give him a tour. After all, you don't have to have studied architecture or be a structural engineer to enjoy walking around Home Depot, looking at tools and supplies you'll never use. You can pick them up and hold them, and then put them back.

Later on, I revisited the analogy. A historian is like an architect. We have the latitude to design (write) the structure (article or book or film) however we want. But we all have to obey the same basic rules of design: start with facts to build a foundation, and then construct interpretations that are solid and sound and, we hope, will be used and useful. Fail to do these things and no one will want your building—meaning, your work won't get published.

My job as this magazine's editor is a bit like being a city planning commissioner, and the magazine is a planned community within the larger city called Forest History. I know there are designated city limits to build within (our maximum page count), and that the buildings will be restricted in size (the word limits for each article). The community has two districts: Features and Departments, the latter of which includes Biographical Portrait, History on the Road, and Books of Interest. There are variances within each (different topics, different article lengths), and every neighborhood (issue) will look different from the others yet seem familiar.

Sometimes I work with historians whose "structures" I enjoyed helping them build before. In this neighborhood they include Thomas Straka ("History on the Road: Catoctin State Park"), Joseph J. Jones ("Biographical Portrait: Charles William Garfield"), and Stephen Arno ("Slow Awakening: Ecology's Role in Shaping Forest Fire Policy"). Tom's subject struck a chord with me. I



remember as a child listening to my dad talk about Camp David and the not-so-secret emergency Pentagon site just north of it as we drove past on the way from our home in western Maryland to Gettysburg. Like Tom with his work on iron furnaces, Joseph continues contributing excellent work on the forest history of Michigan. Steve's article is like a repurposed building. I had originally published it on our blog, *Peeling Back the Bark*, in 2014. Given the continued relevance of the topic, it's been updated to reflect the scholarship that's come out since, so it's worth revisiting. The same is true of my own article. The ongoing problem of discrimination in the U.S. Forest Service,

which I first wrote about in 2005 in a book, became front-page news in March 2018, so I posted a relevant excerpt on our blog. I've revised that introduction and am repurposing it yet again here. Eben Lehman and Jason Howard of the FHS library staff once again helped "construct" Books of Interest.

Architects whose work is less familiar to me will contribute to keeping Forest History thriving and growing in different directions. Larisa Miller's article, "Permitting Native Americans in California's National Forests," touches on an aspect of U.S. Forest Service history not often visited—what the agency tried to do about the Native Americans living on national forests at the time the federal government established them. Mason Carter and James P. Barnett examine the causes of the first lumber boom in the Gulf South, which had run its course by the time the Great Depression hit, and its consequences. Richard Judd discusses "The Trouble with Thoreau's Wilderness." The trouble is not with a piece of land owned by Thoreau but with our (mis)interpretation of Thoreau's interactions with wilderness. Michael O'Hagan brings to light a topic I first heard him discuss at an American Society for Environmental History conference—how German POWs employed in Canada's timber industry during World War II found "Freedom in the Midst of Nature." Of course, any community worth visiting has trees worth saving. And so, in this one, Sara deFossett documents the efforts of several groups trying to save hemlock trees in eastern forests from the hemlock woolly adelgid.

Lastly, my thanks to my fellow "commissioners." It's reassuring, to say the least, for me to have someone of the caliber of Sally Atwater doing the copy editing and providing editorial feedback. The same is true of Kathy Hart and Zubigraphics. She somehow interprets and implements my cryptic instructions to produce a beautiful magazine.

I hope you enjoy visiting our fair city and will continue to come back. □

The establishment of national forests in California affected nonreservation Native Americans in what was then called District (now Region) Five of the U.S. Forest Service. Their attempts to secure homesteading permits within the national forests encountered several obstacles—not the least of which was misguided thinking on the part of advocates within the federal government.

NATIVE AMERICAN LAND OWNERSHIP

IN CALIFORNIA'S NATIONAL FORESTS

When President Theodore Roosevelt reserved nearly twenty million acres of California's timberlands as national forests, his progressive conservation vision undermined the agenda of reformers working to secure land for the nonreservation Native Americans of northern California. The reformers

had viewed the forests as prime targets for more Indian home sites, but the lands' new status as national forests seemed to lock out Indians and other settlers.

In 1906, when agricultural land in the forests was opened to citizen settlers, noncitizen Indians who were living in California's national forests lacked legal status. Their homes had been included inside national forest boundaries; now they were subject to displacement by whites participating in a final homesteading rush. Protecting thousands of Indians under threat seemed urgent to Office of Indian Affairs and Forest Service officers in the field, yet a decade later only 137 Indian households had been secured.

ESTABLISHING NATIONAL FORESTS IN CALIFORNIA, 1891–1910

Through most of the nineteenth century, federal policy was to dispose of public lands by grants and sales to states, corporations, and individuals. An inkling of change occurred with the creation of several national parks, and then in 1891 a new law drastically altered federal land policy. The Forest Reserve Act authorized the president to set aside public lands containing timber as forest reserves. The reserves would be owned by the nation to serve the interests of all people. Although "'reserving' anything in the way of large amounts of public domain was simply

BY LARISA K. MILLER



Charles H. Shinn of the U.S. Forest Service took this undated photo on the Sierra National Forest. The original caption to it read “Indian ‘Wickiup’ in North fork country.” Shinn wrote in 1908, “We have it in our power to help them in perfectly simple, direct, and practical ways free from sectarianism or sentimentality.”

revolutionary,” as one historian of the Forest Service has characterized it, the law was enthusiastically applied in California.¹ By the end of the century the state had nine forest reserves totaling nearly nine million acres. Roosevelt created fifteen more national forests (as the forest reserves were renamed in 1907) and enlarged existing ones. By 1909 the gross acreage of national forests in California was almost twenty-eight million acres—accounting for a quarter of the state and much of California’s remaining public domain lands.²

Forest Service chief Gifford Pinchot observed that “public sentiment about the Forest Reserves varied according to the occupations of the people” and that California’s farmers, city dwellers, and progressives were “staunch” friends of forestry who wished to protect resources essential for drinking water, irrigation, and energy.³ For decades, private logging, mining, and grazing interests had exploited California’s publicly owned forests. These industries caused severe erosion of forest soils in the mountain watersheds, which could no longer hold and slowly release the water on which farms and cities relied. Because use of the new reserves promised to be scientifically controlled and sustainably managed, the national forests represented a means to safeguard water supplies vital to prosperity and growth.

Most westerners expected free access to the forage, timber, and mineral resources on lands in the public domain. The economic loss they experienced with the creation of the reserves fueled their hostility toward Roosevelt and the Forest Service. The reserves also represented a loss for advocates for the northern California Indians: they had eyed the unreserved public lands as permanent homes for the state’s many landless Indians, and now creation of the reserves pulled the rug out from under their plan.

DOCUMENTING LANDLESS CALIFORNIA INDIANS, 1905–1906

The northern California Indians were the surviving remnant of a once dense and diverse population. Eighteen treaties with California Indians had been signed in the 1850s, but the U.S. Senate refused to ratify them. Instead of reserving lands via treaty, the government created Indian reservations by executive action. But some reservations were blocked and others were moved or dissolved by whites who coveted the land. Eventually some thirty small, scattered reservations were established for Indians in southern California, but in northern California there were only three reservations in 1900. Most Indians lived outside the reservations, where their means of subsistence diminished as they were unrelentingly forced toward marginal lands. They had virtually no legal rights, protections, or government support.

The federal government investigated the conditions of the California Indians in 1905–1906. It tapped C. E. Kelsey, a lawyer and advocate for fairer treatment of Native Americans, to perform the work. Kelsey prepared a census of 11,755 Indians in northern and central California and reported that most were “without land.”⁴ He recommended that they be given small land allotments but noted that “it would be necessary to buy a considerable amount of the land, as there is very little land in the public domain left to allot them. Almost everything relied upon for this purpose has been included in the forest reserves.”⁵

California’s federal forest reserves were a moving target during the investigation. More than 4.5 million acres were added to them in 1905–1906, the fiscal year when Kelsey was working.⁶ The expanding reserves engulfed ever more Indian homes, but Kelsey was not deterred. He counted 1,181 Indians and 125 “mixed

Table 1. Indians on Forest Reserves in Northern California, 1905–1906, Compiled by C.E. Kelsey

County	Indian Heads of Families	Indians	Mixed-Blood Heads of Families	Mixed bloods
Fresno	26	69	3	11
Humboldt	43	188	0	0
Kern	41	169	0	0
Mariposa	14	49	0	0
Madera	64	276	5	12
Siskiyou	118	430	15	102
Total	306	1,181	23	125

bloods” living in forest reserves in six counties (Table 1). On his typed census, Kelsey indicated these families with his pen, marking groups of names as “forest reserve.”

Most of these people did not live in deep woods. Rather, the forest reserves were established so rapidly and imprecisely that agricultural lands—and their Indian residents—were often included. In addition, even extensive forests had “many small valleys and isolated tracts of grazing lands... which provide ideal spots for Indian homes, and on many of these tracts the Indians have settled and erected improvements.”⁷ On the Sierra National Forest, for example, Indians lived in groups of ten to one hundred in nineteen places. According to forest supervisor Charles H. Shinn, “The little Indian homes are scattered here and there, wherever a spring can be found and a little pasturage for a few horses.”⁸ Another official wrote, “They have made their living at such labor as they could get in that locality, and by limited placer mining on their own account. They have taken up little pieces of land where a small tract was available for agriculture, where they produced a good garden, have some fruit trees, and have fairly comfortable homes.”⁹

Kelsey counted these Indians separately because he made a distinct recommendation for them. They had “no title to the land they occupy, and since the establishment of the forest reserves, it is uncertain whether the lands within the boundaries can legally be allotted to them.” However, it was not necessary to obtain land for these Indians because “the Forest Reserve Officials do not seem to object” to their presence. Kelsey therefore recommended that “no action be taken in respect to Indians on the forest reserves until action seems more necessary than at present.”¹⁰

FOREST HOMESTEAD ACT OF 1906

While Congress considered Kelsey’s report in the spring of 1906, a new bill called the Forest Homestead Act threatened his sanguine assessment. The legislation opened agricultural lands within the forest reserves to settlement under the Homestead Act of 1862. The act gave citizens 160 acres on the unreserved public domain if they lived on the land for five years, cultivated and improved it, and paid a minimal filing fee. The new bill was both a backlash against the forest reserves and their seeming interruption of western growth, and evidence of the insatiable demand for land in this period. Measured in acreage, new applications for public lands peaked in 1910.

Kelsey sounded the alarm to the commissioner of Indian Affairs within weeks of submitting his report. The legislation applied to citizens but overlooked Indians. Stressing that “these Indians practically all live upon agricultural land of the character which the

bill opens for settlement,” he urged that “some provision be made whereby the Indians shall not be molested when found to be occupying land of the character which it is proposed to open.” Moreover, the number of Indians affected was increasing as the forest reserves expanded. The “recent establishment of the Yuba and Lassen Peak reserves and the enlargement of the Tahoe reserve adds about 200” individuals to those he had tallied.¹¹

Forest Service staffers were also concerned. They “began to make inquiries as to what would happen to the unallotted Indians in the national forests if the Homestead Act went into effect.”¹² Shinn was among them, writing that “the Indians will lose their little claims, unless they are considered first.”¹³ He had been recommending “a system of leases... as early as 1904”¹⁴ and was “taking, under ‘special privileges,’ requests of various Indians here for not to exceed 40 acres where their little cabins are built, or where they have hitherto camped.”¹⁵

As Kelsey followed the bill’s progress, he wrote again to the commissioner. An amendment excluding much of southern California was “almost wholly useless” because it exempted only one of the six counties listed in his census as having Indians on the forest reserves. If the bill passed, Kelsey called for “executive action to prevent the sale of lands occupied or claimed by Indians.”¹⁶

Days after Kelsey wrote that letter, on June 11, 1906, the Forest Homestead Act became law. It instructed the secretary of Agriculture to examine lands within the forest reserves “which are chiefly valuable for agriculture” and which “may be occupied for agricultural purposes without injury to the forest reserves, and which are not needed for public purposes.”¹⁷ Such lands would be opened for settlement.

Beyond requiring an agricultural evaluation, forest homesteads differed from homesteads on the unreserved public domain in other ways. Rather than using the standard rectangular public survey, they were surveyed by metes and bounds. This allowed forest homesteads to hug agricultural land in river valleys. They also varied in acreage and could be smaller than the traditional 160-acre plots.

Under the law, “June 11th settlers,” as they came to be called, applied to have a tract examined by the Forest Service. The examination ascertained “whether the land is capable of producing cultivated crops, and in deciding this the soil, climate, altitude, and slope must be considered.” The process was based solely on the “fitness of the land for agriculture” without regard to the farming ability of the applicants or the viability of farms in remote locations. However, the Forest Service limited occupancy to “bona fide settlers” so that the land would go to “home makers” rather

than timber speculators. The Forest Service made a recommendation on each application and then the General Land Office (GLO) determined whether to open the tract for homesteading.¹⁸

Across the nation, June 11th settlers submitted thousands of forest homestead applications each year. The Forest Service's District 5 office, in San Francisco, which oversaw forest reserves in California and western Nevada, received more than 150 applications per month.¹⁹ Although the Forest Service publicly embraced homesteads as an aid to the "protection and development" of the reserves, in reality they were a major threat.²⁰ The agency "used every subterfuge available to prevent and delay homestead entries."²¹ Even so, annual reports show that most of its recommendations favored the homesteader.

PROTECTING THE CALIFORNIA INDIANS, 1906–1910

Ten days after the Forest Homestead Act became law, Congress responded to Kelsey's report by appropriating funds to purchase land for the California Indians. Kelsey was appointed to perform the work. He subsequently wrote "a good sized volume of letters" urging protection of the rights of the Indian occupants of the forest reserves, a situation he believed "peculiar to California."²²

Kelsey worked for the Office of Indian Affairs, which was part of the Department of the Interior, as was the GLO. They were nineteenth-century agencies molded by political patronage, centralized control, and fraud. In contrast, the Forest Service was new and progressive. Pinchot shaped it to be independent, professional, and decentralized. Kelsey later proposed reorganizing

the Indian Office to match the Forest Service structure. Reinforcing its distinctiveness, the Forest Service was part of the Department of Agriculture rather than Interior, which was the primary land manager. Splitting the administration of the public lands between departments invited competition for control of those lands, but Roosevelt skillfully brought the departments into line.

At first Kelsey proposed that forest rangers examining forestlands for potential agricultural settlement be instructed "that tracts occupied by Indians shall not be subject to entry."²³ This spurred the secretary of the Interior to consult his counterpart in Agriculture, and they agreed "that Indians should be given first consideration in carrying out" the new forest homestead law.²⁴

The spirit of agreement stalled at the point of determining the mechanism to protect the Indians. The Indian Office favored issuing trust patents because Indians valued the ownership that patents conferred. The Forest Service preferred issuing "free special-use permits covering long periods," which it felt "better conserved" Indian interests.²⁵

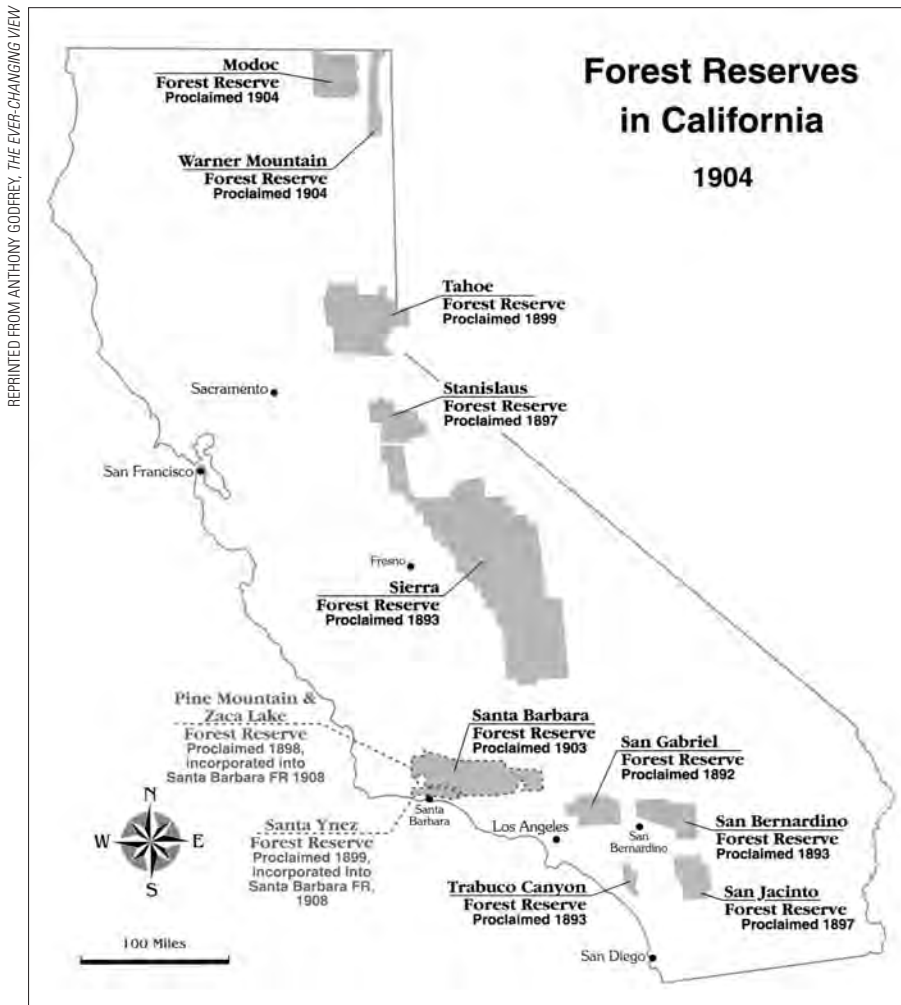
The Indian Office's approach called on an 1884 law that allowed homestead entries by Indians "to the same extent as may now be done by citizens."²⁶ Under this law, an Indian homesteader was given a patent, or title to the land, but it was held in trust by the government. Full title was given when the secretary of Interior was satisfied that the Indian was competent to manage his or her affairs. In this interpretation, the new Forest Homestead Act applied equally to Indians.

The Forest Service supported the long-term permit idea coming out of California. District Forester Frederick E. Olmsted argued that even if Indians were eligible for homesteads, their applications should be denied because the lands they applied for could not be considered agricultural. "No white man could begin to make a living upon them...the Indians really want it simply to eat and sleep upon. They want, also, the satisfaction of feeling that they own or have a right of some kind to the land they camp upon." If such applications were approved, it would be "the patenting of mere camp sites, and in my mind this would be an exceedingly bad precedent."²⁷

Behind Olmsted stood Shinn, who insisted that permits protected Indians. Because the Indians were "dying off rapidly" and were "in the main under the control of squaw men and whiskey sellers," Shinn believed that if the Indians obtained patents, their forestlands would quickly pass to speculators.²⁸ Once the land was out of government hands, it would adversely affect timber production, water supply, and fire control.

In the resulting confusion and stalemate, Indians got the runaround. At first, Shinn submitted forest homestead applications from Indians in the Sierra National Forest to Olmsted

The federal forest reserves in California as of 1904. The early reserves were created to protect watersheds and grazing lands as well as timber.



REPRINTED FROM ANTHONY GODFREY, THE EVER-CHANGING VIEW

at the district office in San Francisco. Olmsted sent them to headquarters with his recommendation that they be denied. But the Washington office ignored his recommendation and passed the applications to Interior for action. The Indian Office got the upper hand by then sending letters to the Indian applicants suggesting they file homestead entries under the 1884 law. Shinn reported that “the Indians are coming here every day to show these letters and ask when they can get the land...they much prefer the Act of July 4, 1884.”²⁹

By 1908, when Indians sought land in the Trinity National Forest, the Forest Service simply balked at approving their applications. Augustus Russ of the Redwood band applied to the Hoopa Valley Indian Agency for allotments in Trinity for himself and his daughter Mable. The local Indian agent told Russ to first contact the chief forester in Washington to have the lands listed for entry, just like an “ordinary” June 11th applicant.³⁰ Russ dutifully wrote to the chief forester and was informed that the agencies were creating a lease system, and until it was in place, nothing definite could be done. Russ persevered, submitting doctored June 11th applications modified by typewriter to refer to “leasing under the Indian [sic] allotment Laws,” to no avail.³¹ More members of the Redwood and Winton bands applied, and in 1909 they were still being told by the Forest Service that a lease form was being developed.

The stalemate extended to others. A field matron assisting Indians at Bishop described a case she encountered. Jack was an Indian “who supposed that he had filed...on a piece of land fifteen years ago and has lived on that land and improved it all these years.” There was no record of his filing, and “the section where his land lies has been recently added to the Forest Reserve and is not now open to settlement.”³²

Amid the impasse, Shinn appealed to his “fellow-workers” to protect the homes of Indians through a trade publication. “We have it in our power to help them in perfectly simple, direct and practical ways free from sectarianism or sentimentality.” He shared several stories to show “how safe are the homes of the Indians in this forest under Service management.” One involved a field cleared and fenced by “Bill Grant’s wife’s mother, an Indian woman” that was homesteaded by a white man. When Shinn heard about it, he dispatched a ranger on a two-day trip to the site. The ranger moved the white man off the land “with a terse warning to be good, or something worse would follow.”³³

Kelsey attempted to spur action in Washington by increasing the scope of the problem. Since his 1906 report, the new and expanded forests “have more than doubled the number of Indians upon the National Forests.” His data

now showed 2,590 inside national forest boundaries, and the proposed “extension of the lines of Sierra Forest...will increase the number to a little in excess of 3,000.” Having come around to the idea of permits even though they provided no true fixity of tenure, Kelsey argued for their adoption. Permits gave “the Indian a right to his home” and bought time for the Indian Office and Forest Service to “arrange a modus operandi” without involving Congress. As Kelsey saw it, “The land is in [the] charge of the Forestry Bureau. The Indians are in [the] charge of the Indian Bureau. It seems proper that the two bureaus should unite.”³⁴

In California, officers of the two bureaus did come together. Kelsey and Olmsted agreed on “a fifty-year lease, once renewable,” but the plan was rejected in Washington by the secretary of the Interior.³⁵ Whether driven by duty, doubt, or delay, he first wanted to know from the Forest Service how many Indians were eligible for these permits. Pooling data from his forest supervisors, the district forester in San Francisco reported in May 1909 that some two thousand Indians lived on national forest lands, reservations within national forests, and adjacent lands.³⁶

In October 1909 Kelsey went to Washington, where “the entire matter was threshed out and talked out, and it was decided to ask

Form 257

FOREST SERVICE District No. 5. OPERATED BY UNITED STATES DEPARTMENT OF AGRICULTURE Referred to FOREST SERVICE MAR 12 1909

FOREST SERVICE District No. 5. OPERATED BY UNITED STATES DEPARTMENT OF AGRICULTURE Referred to FOREST SERVICE MAR 12 1909

FOREST SERVICE District No. 5. OPERATED BY UNITED STATES DEPARTMENT OF AGRICULTURE Referred to FOREST SERVICE MAR 6 1909

FOREST SERVICE District No. 5. OPERATED BY UNITED STATES DEPARTMENT OF AGRICULTURE Referred to FOREST SERVICE MAR 6 1909

APPLICATION UNDER ACT OF JUNE 11, 1906.

FOR INDIAN ALLOTMENT LAWS.

THE FORESTER,
WASHINGTON, D. C.

I hereby make application for the examination and leasing under the Indian allotment Laws, or leasing under the Indian allotment Laws, of the following-described lands in the Trinity National Forest,
S.W. 1/4 Sec. 35, Twp. 33, R. 27E, H.M.

(If the land is surveyed, give each smallest legal subdivision and the section, township, and range. If the land is unsurveyed, describe it by reference to natural objects, streams, or improvements, with boundary lines sufficiently definite to identify the land, so that the examiner may easily locate it. When convenient, submit sketch of the land on the township plat, last page.)

I am entitled to make entry under the ~~homestead laws and the Act of June 11, 1906.~~ Allotment Laws. I have actually been upon the land above described and believe it to be chiefly valuable for agriculture, having settled upon it (or examined it) Examined Mar 1, 1908.

(Give the date of settlement or the date of the examination, the character of the improvements, if any, and the amount of cleared land.)

85 to 90 acres open grass land.
Covered remaining portion scattered Oak timber.
No improvements on the land.

My present address is Autumn Trinity Co., California.

Augustus Russ, Applicant.

NOTE: If the applicant, upon the request of the Forest officer detailed to examine the land, will accompany him, it will usually facilitate the examination.

79 Trinity

8-670

NATIONAL ARCHIVES

Augustus Russ’s application under the Act of June 11, 1906, had typed changes that refer to “leasing under the Indian [sic] allotment Laws.”

Congress for legislation permitting Indian allotments within the National Forests.³⁷ Indian allotments were similar to Indian homesteads, with the government holding the land in trust for an extended period.

The secretary of the Interior submitted a draft bill allowing Indian allotments in national forests to Senator Moses E. Clapp, chairman of the Committee on Indian Affairs. Upon assurance that Indians were not receiving preferential treatment—that whites had the same right to settle in the national forests—the bill passed its initial hurdles in the Senate before stalling.³⁸ With passage uncertain, the Indian Office asked the Forest Service to issue permits to the Indians for forest lands that “will ultimately be allotted to them.”³⁹

Permits proved unnecessary when the provision passed unexpectedly as part of an omnibus measure in June 1910. The new law authorized allotments “to any Indian occupying, living on, or having improvements on land included within any...national forest who is not entitled to an allotment on any existing Indian reservation, or for whose tribe no reservation has been provided, or whose reservation was not sufficient to afford an allotment to each member thereof.” The secretary of Agriculture should receive applications and “determine whether the lands applied for are more valuable for agricultural or grazing purposes than for the timber found thereon,” and if so, the secretary of Interior should make the allotment.⁴⁰

At about this time the national forests also stopped expanding and engulfing Indian home sites. Some two million acres were added to California’s national forests in the 1908–1909 fiscal year, and none the next. In 1912 California was added to the list of states named in the Agricultural Appropriation Act of March 4, 1907, within which only Congress could establish or expand national forests. With this, the national forests entered a period of steady reduction as their acreage was classified and those areas better suited for agriculture were opened to settlement. Now Indians could also take advantage of those openings, at least theoretically.

THE ALLOTMENT PROCESS AND OUTCOMES, 1910–1916

Reviewing the new law, the chief forester in Washington swiftly decided that “the Commissioner of Indian Affairs will take the initiative in making allotments under this Act. The Forest Service will cooperate and render all assistance it can.”⁴¹ The commissioner seemed equally willing to defer to the Forest Service, but courtesy masked friction. The earlier shared understandings between Roosevelt’s Interior and Agriculture departments were now strained, a victim of President William Howard Taft’s dismissal of Pinchot in January 1910 for publicly criticizing the secretary of Interior. Years of bureaucratic foot-dragging ensued, and deeper problems surfaced. Applying the law proved complicated, performing the work stretched resources, and determining the scope of the law was difficult.

On the ground, the Forest Service continued to shield Indians from June 11th applicants. Furthering this effort, and perhaps protecting his own agency, Pinchot’s successor, Henry Graves, took one proactive step. Graves ordered his staff to list the Indians occupying California’s national forests, with legal descriptions of their

land, at the time the law was enacted. The earlier report had not listed Indians by name or indicated the status of the land on which they resided. As a Washington staffer explained, “It may be some time before the Indian Office actually makes allotments under the act, and when the work is done the Forest Service should be in a position to show what Indians were actually occupying land at the time the law was enacted as well as the lands they were occupying.”⁴²

National forest staff dutifully sought this new information but warned that “on some forests there will be at least 100 allotments on unsurveyed Forest lands. To locate these will require a metes and bound survey...a very large amount of extra work.”⁴³ Kelsey went to the Forest Service district office in San Francisco several times to offer assistance, including “the names, by heads of families, of about 3,600 Indians who are living within the present boundaries of the National Forests.” Since he lacked the precise coordinates of their tracts,⁴⁴ Olmsted instead gathered data directly from his field staff, but only as “other duties will permit, and after the danger from fire has passed.”⁴⁵

That fieldwork revealed the complexity of the task. Several forest officers remarked on the difficulty of determining exactly where an Indian lived because many of them moved about frequently to find work

and make visits. “These Indians are to a certain extent nomadic. They visit each other for such long periods it is often very difficult to be able to say just where an indian [sic] does live,” a ranger at the Sequoia National Forest reported.⁴⁶ The Klamath National Forest supervisor noted that there were “quite a few...Indians that move about continually, feeding off their friends in the country, and have no special place to live.”⁴⁷

Some Indians already had some sort of legal hold on their land. Juan Forestero had “entered a homestead as a citizen” in the Santa Barbara National Forest, and three Indian families, the Encinals, Moros, and Quintanas, lived on land they had patented in the Monterey National Forest.⁴⁸ At the Sequoia National Forest “many of the Indians have patented homesteads, and there are now 5 June 11 Indians.”⁴⁹ The latter Indians had homesteaded land under the earlier Forest Homestead Act, which ostensibly excluded Indians. On the Trinity National Forest only three Indians were thought to be eligible under the law; though there were many others in the forest, “almost all of them either have their allotments of land or are living on their homestead lands.”⁵⁰ The supervisor of the Cleveland National Forest believed that seven Indian families occupying forest lands were amply provided for “on some one of the numerous Reservations in this section.”⁵¹

Questions surfaced about who was eligible under the law. In the Trinity National Forest, Aaron F. Willburn, who was part Indian, claimed land on behalf of his minor children Martina and Emma, and Eva Hoaglin claimed a tract adjoining the land on which she and her family lived.⁵² An officer at the Sequoia National Forest described the circumstances of “Indian Charley,” who had been scared off his place by settlers; Frank Jackson, who had abandoned his land; and Pete Burris, who was serving time for murder and whose land was claimed by his father-in-law.⁵³ Were these individuals entitled to allotment?



C. E. Kelsey,
in an undated photo.

While the Forest Service gathered data and the Interior Department drafted regulations, some Indians wasted no time in exercising their new rights. A ranger at the Kern National Forest received applications from two native Shoshone, Chappo Bellace and Frank Bellace, for land on Loco Flats.⁵⁴ After several Indians told the superintendent at the Round Valley Indian Agency that they wished to secure their land in the Trinity National Forest under the new law, the superintendent, unaware of the legislation, asked Kelsey for a copy of the law.⁵⁵

In March 1911 two essential tools were put in place. First, the district forester in San Francisco sent the list of Indians who might be entitled to allotment to the chief forester and to three officials of the Indian Office: the commissioner, Kelsey, and Horace G. Wilson. As superintendent of the Roseburg Agency in Oregon, Wilson's jurisdiction included nonreservation Indians in northern California. According to the list, only the Klamath, Plumas, Sierra, and Trinity national forests might have Indians entitled to allotment under the act.⁵⁶

Second, regulations for implementing the law were issued.⁵⁷ Requirements stated that an Indian applicant had to be the head of a family or a single person over the age of 18, must not have already been allotted, and must not be entitled to allotment on a reservation. The applicant had to show that he had made settlement or improvements on forest land that was primarily agricultural.

The application process could involve a total of two departments and three agencies. An Indian applicant initiated the process by taking an oath that he met the legal requirements. This was certified by a field officer of either department. The Indian then submitted his application to the national forest supervisor, who examined the land and submitted his report with the application to the secretary of Agriculture. If the land was chiefly valuable for agriculture or grazing rather than timber, the secretary returned the application to the Indian. The Indian filed the application at the local land office, where it was recorded, reviewed for prior claims, and transmitted to the GLO in Washington. The GLO forwarded the file to the Indian Office for review. It was then passed to the secretary of the Interior. If the secretary approved the application, it was transmitted to the GLO, which issued a trust patent.

This complex process was developed by the Interior Department and approved by Agriculture. It authorized either department to take the first action, thus allowing both to duck responsibility. The Indian Office was specifically involved only at the tail end of the process, after the Forest Service had examined the land. Moreover, the Indian allotment application form contradicted these regulations. The form had to be executed before a qualified official. Indian agents and officers authorized to use a seal were qualified, but national forest officers were not.

This excluded rangers from initiating action.

Within months the district office suggested to headquarters that rangers be allowed to certify the applications, but Chief Graves chose not to broach the idea with the Interior Department. The Forest Service would take no initiative. Rather, it should "follow closely its duty prescribed by the act" to determine the primary value of the land. "It would seem to be the duty of the Indian office to look after the interests of the Indians, the allotment business in general, and to determine the degree of expedition with which it shall be carried on."⁵⁸ The supervisor at the Klamath National Forest lamented this decision. The "inability of [forest officers] to act will leave the Indians who need help the most in practically the same condition they were before the Act was passed."⁵⁹

This left the initiative to the lean force of the Indian Office in California. Wilson had only two staff, including a clerk named Watson C. Randolph at Redding, for a jurisdiction covering eight thousand Indians in Oregon and California.⁶⁰ Washington denied Wilson's request for a special allotting agent to do the work. Transportation in the mountainous region compounded the challenge. When Randolph traveled to neighboring Trinity County, roughly 50 miles west, to allot forest lands, he had to go via San Francisco, 200 miles due south of Redding. Unable to determine "just how far the railroad goes," Randolph figured "it may be best to go by Eureka, take railroad from there and stage from the end of the railroad."⁶¹



The national forests in District 5 as of 1911. Seventeen of the nineteen national forests had been created before 1910.

REPRINTED FROM ANTHONY GODFREY, THE EVER-CHANGING VIEW

Surveying the allotments presented difficulties, too. Backed by the county surveyor, Wilson questioned the legitimacy of the Klamath National Forest survey plats, which “in no way fit the ground.” It was more difficult to allot Indians to legal subdivisions referencing the “very, very poor” surveys than if the land was unsurveyed.⁶²

Though Wilson’s protest got no traction in Washington, practical realities took precedence and most allotments were surveyed by metes and bounds, which accommodated odd shapes with six to twelve corners. This bypassed the “fraudulent” surveys and recognized the actual boundaries within many native communities, which took the form of “fences or irrigation ditches” that “never coincide with legal subdivisions.”⁶³ Such surveys demanded more physical work and paperwork. A ranger wryly described his single-handed effort to run lines through dense pines while “acting as axe man, transit man, flag man, chain man, level man, rod man, cook and packer.... This might not seem difficult for an all-around acrobat like a ranger but the real difficulty is holding an umbrella to protect the notebook while performing the other operations.”⁶⁴

In 1912, Lewis A. Barrett in the Forest Service’s San Francisco district office expressed his frustration with the Indian Office. He furnished “a complete list of all the unallotted Indians on each forest,” wrote numerous letters, and held many meetings, yet the work was incomplete because the Indian Office had not “taken the trouble to investigate the individual cases and file an application for an allotment.” He noted that “there are from 150 to 200 Indians in this District, living on public land within the National Forests, who are presumably entitled to an allotment.... In justice to the Indians some definite action should be taken in all of these cases without further delay.” Complications could arise “between the Indian claimants and June 11 applicants, mineral claimants, power propositions, and other Forest uses,” Barrett asserted, whereas “a competent man” could “visit the Indians in question and settle the entire matter in one field season.”⁶⁵

Field staff of the Indian Office were also frustrated. Kelsey pushed to make the allotments “without delay as white men are making filings in the Forests and the Indians should be given their homes before any more whites move in.”⁶⁶ In Reno, Nevada, Special Agent Calvin H. Asbury, who was responsible for Indians scattered across central California, notified the commissioner of the “comparatively large number of Indians living within national forests who have not received allotments.”⁶⁷ Relayed from the Interior secretary to his counterpart at Agriculture, this concern made its way back to the Forest Service district office in San Francisco as orders to inform the commissioner of those Indians in the national forests who were eligible for allotment. Yet this is precisely what the district had done nearly two years earlier.

In May 1913 Randolph finally met forest officers along the Klamath River to process allotment applications. They handled seventeen and awaited several more. Randolph had expected no more than thirty-five applications along the Klamath and Salmon rivers, but this was fewer than anticipated. The nature of many tracts excluded them from allotment: some were not agricultural. Randolph reported that “there is very little land along these rivers that can ever be cultivated... upon a strict construction it is doubtful if any of it could be called non-mineral, as there is of course more or less gold everywhere, but parts of it is probably more valuable for agriculture.”⁶⁸ A dozen families lived near the mouth of the Salmon River, where a power site withdrawal took precedence over any homestead. Finally, one of the largest Indian settlements,

at Siwillup, sat on land that belonged to the state rather than federal government.

Beyond the character of the land, Randolph found that many individuals were not eligible for allotment. Some did not meet the requirements of being the head of a family or a single adult, and occupying and improving the land. He also found mixed-blood Indians who were already citizens and voters and did not want to revert to Indian status by seeking allotment. Some Indians already had homesteads, and one was caught in bureaucratic limbo due to his inability to pay for a survey required by his June 11th application. Others lived on mining claims to which they did not have rights.

As the allotting process limped along, the agencies held several conferences to change the procedures. In 1915 they informally agreed that the Forest Service would not perform an agricultural examination until the applicant provided a certificate from the Indian Office that he was entitled to allotment.⁶⁹ Now the Indian Office would be involved near the start of the process.

Eligibility questions also needed resolution. Was the law limited to Indians who occupied land before it was withdrawn to create a national forest, or before the act was passed? The GLO required a statement that settlement occurred prior to the passage of the act, and some allotment claims lacking it were returned as incomplete. By 1915 the solicitor of the Interior Department was informally interpreting the law to apply to occupancy made after 1910.⁷⁰ The departments eventually agreed that Indians could occupy land after the national forest withdrawal and after 1910, as long as the occupancy conformed to lawful procedures. This was meant “to place the Indian upon exact equality with the white man.”⁷¹ This interpretation was formally approved by a legal decision in 1918.⁷²

Because of the elastic nature of national forest boundaries in this period, some Indians were caught in bureaucratic loopholes. Jack Roan and Frank Hamond filed applications for land in the Sierra National Forest, only to see the tracts in question included in acreage that was eliminated from the forest in 1915. Anticipating the boundary change, “action on the applications... was withheld by the Forest Service.”⁷³ After the change was finalized, the Forest Service rejected the applications and the two had to apply all over again, this time for allotments on the public domain.

The entire situation remained under the public radar. Only one citizen took an interest. Mary E. Arnold, a former field matron for the Indian Office, had lived and worked among the Indians along the Klamath River. Prodded by her lobbying, the commissioner of Indian Affairs demanded a more systematic effort to ensure that all eligible Indians within national forests applied for allotment in 1915. Indian agents in California pushed back, insisting that nearly all such Indians had been allotted. Asbury had handled eighty or ninety cases in the Kern, Plumas, and Sierra national forests. That fall Wilson worked with the superintendent of the Indian School at Greenville to allot Indians in the Plumas, and Special Agent John J. Terrell would allot the Indians on the Klamath in spring 1916.

These actions did not quiet complaints from Forest Service officers in California. Barrett bitterly complained to Washington again in 1916. His district had “consistently endeavored to secure the cooperation of the Indian Office through its local representatives in allotting land to all Indians on the National Forests who are entitled to the privileges of that Act.” From the start “we have had to do practically all of the work and take all of the blame if

Table 2. Indian Allotments Acted On by Forest Service District 5 Office, as of February 1, 1916⁷⁶

National Forest	Applications	Acres Applied For
California	1	80.00
Cleveland	3	319.62
Inyo	6	616.54
Klamath	32	459.34
Modoc	1	80.00
Mono	4	400.00
Plumas	10	711.00
Sequoia	5	559.52
Shasta	1	160.00
Sierra	68	5,938.13
Tahoe	1	18.37
Trinity	5	559.61
Total	137	9,902.13

anything went wrong,” while “the local representatives of the Indian Office appeared absolutely ignorant of the intent of the law or how to apply it.” The district had supplied Indian agents with a complete census, but even so they “were stalling around, claiming they had no time...or no money.” In spite of this, rangers had cleaned up 85 percent of the cases in the district “by constant agitation of the subject.”⁷⁴

Barrett pushed to complete the work so that the status of national forest lands could be settled, conflicting rights of Indian and white claimants would not fester, and Indians would not claim rights under the law that they did not have. He sought information about the allotments already handled, intending to clean up all remaining cases by year’s end. Headquarters sent him a list of 137 allotments acted on by February 1, 1916 (Table 2). The allotments ranged from 1 to 160 acres, with 62 acres being the average. Most were along the Klamath River and around North Fork.⁷⁵

By the end of the year the district forester notified forest supervisors in California that no more individual examinations would be made. Rather than having homesteaders trigger an examination, national forest lands would be systematically examined and classified to define the areas that were chiefly valuable for agriculture, and the potentially agricultural lands would be listed for settlement. Indians and whites alike would have to wait for this listing.

ANALYSIS OF THE INDIAN FOREST HOMESTEAD ACT

After a decade of effort to protect Indians living in California’s national forests, the results were less than reformer C. E. Kelsey anticipated in 1905. He had initially enumerated 1,300 Indians in the forests. As the forests were expanded, his count swelled to 2,590 in 1908 and 3,600 in 1913. Because forest allotments were made to heads of families, he thought 500 allotments would meet the need.⁷⁷

Forest supervisors reported 2,000 Indians in their forests in 1909, which was 600 less than Kelsey had counted the previous year. In 1910 rangers learned the particulars of the Indian forest homestead law and made a list of Indians residing on national forest lands, finding 311 adults and families who might be eligible for allotment.

Less than half this number of allotments were made. By February 1916, the Forest Service had processed 145 allotments and the Indian Office had approved 137 of them. Barrett figured that this was 85 percent of the allotments to be made in California. He believed “that with possible exceptions on the Lassen and Plumas, and a few very probable cases on the Trinity, Klamath and Sierra, the Indian allotment work on the District 5 Forests is cleaned up.”⁷⁸ A dozen years later Barrett reported that 138 allotments had been recommended—only one more than in 1916.⁷⁹

Why were so few Indians allotted in the national forests of California? Several factors may have been at work. They include limitations inherent in the law, bureaucratic failures in implementing the law, turnover in Native occupancy of the forests, and the practical realities of living in a national forest.

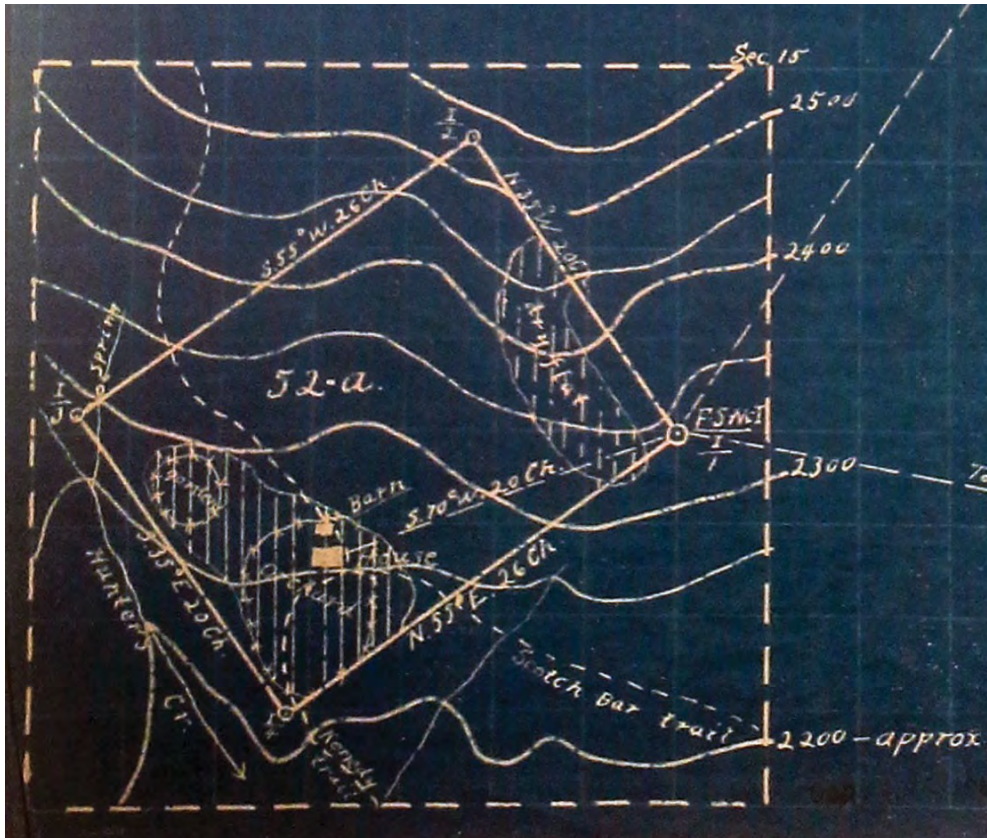
The law placed restrictions on both the applicants and the tracts. Anyone already having an allotment was not eligible, so Indians with a prior claim to their land were excluded. Prior claims could be difficult to establish, however. Eligible applicants had to show that they had settled on or improved forest land that was primarily agricultural, but some Indians lived on plots that the Forest Service could not classify as farmland.

The homesteading procedures were cumbersome, involving three agencies in two departments and multiple offices in California and Washington. The departments struggled over procedures and coordinated poorly. Compounding this, the law became murky in application, especially when added to the array of existing land laws. The bureaucracy took so much time to process applications that it may have failed to assist some who were eligible, or some applicants may have abandoned the effort. Other Indians may have declined to submit to this process at all.

Some itinerant Indians may not have wished to permanently settle in the forests. Several forest supervisors remarked on the migratory habits of Indians and the resulting difficulty of counting forest occupants. On the other hand, Kelsey reported that the forest “bands have mostly been in their present location from time immemorial,” and allotment case files often confirm long-term residency.⁸⁰ Of James Edwards’s allotment in the Sierra National Forest, Asbury wrote, “These Indians have lived in the same general locality for generations, so far as we know it was their original native home.”⁸¹

There was a tremendous turnover of Indians occupying the forests in this period. Kelsey enumerated 329 families in the forest reserves in 1906. Five years later, the Forest Service list named 311. Only about 75 names appear on both lists. This is a 75 percent change in occupancy. Only 32 names on Kelsey’s census, and 47 on the 1911 Forest Service list, are among the 137 allottees in February 1916. Moreover, only 25 names are on all three lists. When comparing lists, one must consider caveats of scope, form of name, and demographic change as individuals reached adulthood, married, moved, or died. Even so, the rate of turnover seems exceptionally high.

The turnover could indicate that some Indians struggled with the same problems as whites living in the national forests. White settlers abandoned their forest homesteads at high rates. In 1921 half of California’s June 11th homesteads were already abandoned, and a decade later more than 80 percent were no longer used for agriculture.⁸² After Kelsey left his post in 1913, Asbury and Wilson “made an investigation of the conditions on the National Forests and [found] that it will be impossible to allot as large a number as 3000 Indians, or anything like that number.” They did not



A detail from the allotment map for James Edwards on the Plumas National Forest. The Scotch Bar Trail, which passes through the property, is noted on both the map and in the field notes.

dispute Kelsey's count, but they questioned the capacity of the national forests to provide homes to the Indians.⁸³ The remote location of the homesteads—recall the challenges government clerks like Watson C. Randolph faced in traveling to and through the forests—would have discouraged settlers from staying.

In the end, the idea of forest homesteads turned out to be wishful thinking because the national forests offered marginal environments for homesteading. Settlers “could not compete in farming with agriculturists on the more accessible valley lands, where the conditions of climate, soil, irrigation, and transportation are more favorable.”⁸⁴ Native forest occupants may not have been competing in that farming economy, but they had to adjust to the economy and society, starting with the regulatory structure of the national forests. A forest home might supply their material needs but would provide little cash income, which was increasingly important. Perhaps as the national forests became societal institutions, some Indian occupants were forced to adapt and ultimately to leave. □

Larisa Miller is an archivist at Stanford University. Her interest in C. E. Kelsey began with an attempt to locate his papers. After determining that they did not survive, she began studying and writing about Kelsey and his work on behalf of California Indians.

NOTES

1. Anthony Godfrey, *The Ever-Changing View: A History of the National Forests in California, 1891–1987*, R5-FR-00 ([Vallejo], CA: U.S. Forest Service, July 2005), 52.
2. Samuel Trask Dana and Myron Krueger, *California Lands: Ownership, Use, and Management* (Washington, DC: American Forestry Association, 1958), 47–48.
3. Gifford Pinchot, *Breaking New Ground*, commemorative ed. (1947; repr., Washington, DC: Island Press, 1998), 170.
4. C. E. Kelsey, Schedule showing non-reservation Indians in Northern California, 1905–1906, file 5340-1909-034, California Special, Central Classified Files, 1907–1939 (entry 121), Records of the Bureau of Indian Affairs (Record Group 75), National Archives, Washington, DC (hereafter Cal Spec CCF, RG 75).
5. C. E. Kelsey, “Report on the Condition of the California Indians,” March 21, 1906, file 3017-1906, Indian Division letters received (entry 653), Records of the Office of the Secretary of the Interior (Record Group 48), National Archives, College Park, MD (hereafter Kelsey report, 1906), 28.
6. Gifford Pinchot, “Report of the Forester,” in *Annual Reports of the Department of Agriculture for the Year Ended June 30, 1906* (Washington, DC: Government Printing Office, 1907), 275.
7. R. A. Ballinger to Moses E. Clapp, January 20, 1910, in *Allotments to Indians within National Forest Reserves*, 61st Cong., 2d sess., 1910, S. Rep. 237, 1.
8. Charles Howard Shinn, “Work in a National Forest, No. 7: Land, Indians and Whisky,” *Forestry and Irrigation* 14, no. 5 (May 1908): 243.
9. C. H. Asbury to Commissioner, August 4, 1915, file SAC-46 Peter Edwards, Land Transaction Case Records, 1950–1958, Sacramento Area Office, Records of the Bureau of Indian Affairs (Record Group 75), National Archives, San Bruno, CA (hereafter LTRC, SAO, RG 75).
10. Kelsey report, 1906, 28.
11. Kelsey to Commissioner, April 17, 1906, file 68944-1908-307.3, Cal Spec CCF, RG 75.
12. Testimony of Lewis A. Barrett, Subcommittee of the Senate Committee on Indian Affairs, *Survey of Conditions of Indians in the United States...Hearings... Pursuant to S. Res. 79, part 2, 70th Cong., 2d sess., November 19, 20, 22, 23, 26, 1928* (Washington, DC: Government Printing Office, 1929), 413.
13. Shinn to Forester, May 1, 1906, file 5450 Grants SIE General, Indian Allotment Files, 1906–1988 (NRHS 095-99-02B), Region 5 Office, Records of the Forest Service (Record Group 95), National Archives, San Bruno, CA (hereafter Sierra IAF, RG 95).
14. Shinn to F. E. Olmsted, June 16, 1907, op. cit.
15. Shinn to Forester, May 1, 1906, op. cit.
16. Kelsey to Commissioner, June 7, 1906, file 68944-1908-307.3, Cal Spec CCF, RG 75.

17. Forest Homestead Act of 1906, Public Law 220, *U.S. Statutes at Large* 34 (1906): 233. Eleven counties in southern California, including one of the six on Kelsey's list as having Indians in the forest reserves, were exempted. The act of May 30, 1908, extended the provisions of the act to all national forests in California except San Luis Obispo and Santa Barbara counties, greatly increasing the number of forest homestead applications, according to the forester's annual report for 1908.
18. Henry S. Graves, "Report of the Forester," in *Annual Reports of the Department of Agriculture for the Year Ended June 30, 1910* (Washington, DC: Government Printing Office, 1911), 367–69.
19. Godfrey, *Ever-Changing View*, 90.
20. Graves, "Report of the Forester, 1910," 369.
21. Samuel Trask Dana and Sally K. Fairfax, *Forest and Range Policy: Its Development in the United States*, 2d ed. (New York: McGraw-Hill, 1980), 90.
22. Kelsey to Commissioner, July 25, 1913, p. 19, file 773-1913-101 (hereafter Kelsey final report, 1913), and Kelsey to Commissioner, April 4, 1908, file 68944-1908-307.3, Cal Spec CCF, RG 75.
23. Kelsey to Commissioner, August 17, 1906, file 68944-1908-307.3, Cal Spec CCF, RG 75.
24. James Wilson to Secretary of Interior, October 17, 1906, Sierra IAF, RG 95.
25. Overton Price to Olmsted, December 9, 1907, op. cit.
26. Act of July 4, 1884 (23 Stat 96).
27. Olmsted to Forester, June 21, 1907, Sierra IAF, RG 95.
28. Shinn to Olmsted, June 16, 1907, op. cit.
29. Shinn to Olmsted, December 17, 1907, op. cit.
30. Frank Kyselka to Russ, August 26, 1908, file 5450 TRI General, Indian Allotment Files, 1906–1988 (NRHS 095-99-02B), Region 5 Office, Records of the Forest Service (Record Group 95), National Archives, San Bruno, CA.
31. Augustus Russ application under Act of June 11, 1906 for Indain [sic] Allotment, Feb. 15, 1909, op. cit.
32. Minnie C. Randolph to Cornelia Taber, May 15, 1908, Folder 1, Cornelia Taber Correspondence, MS 2119, California Historical Society.
33. Shinn, "Work in a National Forest, No. 7," 243–45.
34. Kelsey to Commissioner, April 4, 1908, file 68944-1908-307.3, Cal Spec CCF, RG 75.
35. R. U. Valentine to Secretary of Agriculture, May 23, 1910, file 5450 Indian Allotments/ General Correspondence—Prior to 1918, Indian Allotment Files, 1906–1988 (NRHS 095-99-02B), Region 5 Office, Records of the Forest Service (Record Group 95), National Archives, San Bruno, CA (hereafter General IAF, RG 95); Kelsey final report, 1913, 19.
36. Indian Occupancy of National Forest Lands: Data from Reports by Supervisors of the Eighteen National Forests in District No. 5 (California and Western Nevada), enclosed with J. H. Hatton to Forester, May 3, 1909, General IAF, RG 95.
37. Kelsey final report, 1913, 19.
38. Indian Allotments within National Forests, S. 5788, 61st Cong., 2d sess., *Congressional Record* 45, Pt. 3 (February 23, 1910): S 2248.
39. A. F. Potter to District Forester, May 17, 1910, General IAF, RG 95.
40. Act of June 25, 1910, Public Law 313, Sections 17, 31, *U.S. Statutes at Large* 36 (1910): 855.
41. Henry Graves to District Forester, July 7, 1910, General IAF, RG 95.
42. A. F. Potter to District Forester, August 9, 1910, op. cit.
43. Roy Headley to Forester, August 1, 1910, op. cit.
44. Kelsey to T. D. Woodbury, June 16, 1910, op. cit.
45. Olmsted to Forest Supervisors, District 5, August 31, 1910, op. cit.
46. Ralph Hopping, List of the Indian Allotments in Ranger District 6, Sequoia National Forest, stamped February 17, 1911, op. cit.
47. J. R. Hall to District Forester, January 4, 1911, file 5450 Grants KLA General to LECC 1976, Indian Allotment Files, 1906-1988 (NRHS 095-99-02B), Region 5 Office, Records of the Forest Service (Record Group 95), National Archives, San Bruno, CA (hereafter Klamath IAF, RG 95).
48. Willis M. Slasson to District Forester, September 17, 1910, and Raymond Tyler to District Forester, March 12, 1911, General IAF, RG 95.
49. Ralph Hopping, List of the Indian Allotments in Ranger District 6, Sequoia National Forest, stamped February 17, 1911, op. cit.
50. W. A. Huestis to District Forester, October 7, 1910, op. cit.
51. Harold A. Marshall to District Forester, January 13, 1911, op. cit.
52. John L. Gray to F. H. Hafley, October 8, 1910, op. cit.
53. Ralph Hopping, List of the Indian Allotments in Ranger District 6, Sequoia National Forest, stamped February 17, 1911, op. cit.
54. Roscoe Parkinson to Mr. Rushing, October 4, 1910, op. cit.
55. T. B. Wilson to C. E. Kelsey, August 24, 1910, Press copy book 6 M Miscellaneous, Superintendent's Correspondence to Others than the Commissioner, Round Valley Agency, Records of the Bureau of Indian Affairs (Record Group 75), National Archives, San Bruno, CA.
56. L. A. Barrett to H. B. [sic] Wilson, March 11, 1911, General IAF, RG 95.
57. R. A. Ballinger, "Regulations Governing Indian Allotments in National Forests," Department of the Interior, Washington, DC, March 4, 1911.
58. A. F. Potter to District Forester, October 27, 1911, General IAF, RG 95.
59. W. B. Rider to District Forester, November 17, 1911, Klamath IAF, RG 95.
60. Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1912 (Washington, DC: Government Printing Office, 1912), 87, 301.
61. W. C. Randolph to H. G. Wilson, January 4, 1913, file Allotments Forest—General—Roseburg, Administrative Files, 1850–1923, Roseburg Agency, Records of the Bureau of Indian Affairs (RG 75), National Archives, San Bruno, CA (hereafter Admin Files, Roseburg, RG 75). Eureka is about 95 miles due west of Redding.
62. H. G. Wilson to Commissioner, February 25, 1912, file [Land Allotments in National Forests], Admin Files, Roseburg, RG 75.
63. Barrett to Forester, July 9, 1923, Klamath IAF, RG 95.
64. Joe Notti File, Adjustment Claims, Lolo National Forest, U.S. Forest Service, quoted in Thomas Marvin Kerlee, "Some Chapters on the Forest Homestead Act with Emphasis on Western Montana" (master's thesis, Montana State University, 1962), 110.
65. Barrett memorandum for Mr. Harvey, October 25, 1912, General IAF, RG 95.
66. Kelsey to Commissioner, December 28, 1912, file 773-1913-101, Cal Spec CCF, RG 75.
67. Samuel Adams to Secretary of Agriculture, December 4, 1912, General IAF, RG 95.
68. W. C. Randolph to H. G. Wilson, May 31, 1913, file Allotments Forest—General—Roseburg, Admin Files, Roseburg, RG 75.
69. C. K. Marvin to Secretary of Interior, October 22, 1915, op. cit.
70. Graves to District Forester, October 22, 1915, General IAF, RG 95.
71. E. A. Sherman to Dubois, June 25, 1917, op. cit.
72. *Bililik Izhi v. Phelps* (46 L.D. 283), decided February 2, 1918, in George A. Warren and A. W. Patterson, eds., *Decisions of the Department of the Interior in Cases Relating to the Public Lands* 46 (Washington, DC: Government Printing Office, 1919), 283–38.
73. C. F. Hauke to Asbury, June 1, 1915, SAC-71 Jack Roan, LTCR, SAO, RG 75.
74. Barrett memorandum for Mr. Sherman, February 1, 1916, General IAF, RG 95.
75. L. A. Barrett, "Land and Economic Conditions of the California Indians," *Transactions of the Commonwealth Club of California* 21 (1926): 121.
76. GM, memorandum for Mr. Barrett, February 12, 1916, General IAF, RG 95. The author of the memo is only identified by initials.
77. Kelsey final report, 1913, 19.
78. Barrett memorandum for Mr. Sherman, February 1, 1916, General IAF, RG 95.
79. Testimony of Lewis A. Barrett, Subcommittee of the Senate Committee on Indian Affairs, *Survey of Conditions of Indians in the United States...Hearings...Pursuant to S. Res. 79, part 2, 70th Cong., 2d sess., November 19, 20, 22, 23, 26, 1928* (Washington, DC: Government Printing Office, 1929), 413.
80. Kelsey report, 1906, 21.
81. SAC-43 James Edwards, LTCR, SAO, RG 75.
82. Dana and Krueger, *California Lands*, 41; Godfrey, *Ever-Changing View*, 91.
83. C. H. Asbury and H. G. Wilson to Commissioner, February 20, 1914, file Supervisor's conference [Feb. 1914 DC], Agency General Subject Records, 1906–1925, Reno Agency, Records of the Bureau of Indian Affairs (Record Group 75), National Archives, San Bruno, CA.
84. R. W. Ayres and Wallace I. Hutchinson, *Forest Rangers' Catechism: Questions and Answers on the National Forests of the California Region*, U.S. Department of Agricultural Miscellaneous Publication No. 109 (Washington, DC: Government Printing Office, 1931): 19.

More than a century ago, California timberman George Hoxie argued that Americans had best adopt fire in the forest as our servant or it will surely become our master. To avoid that, the author argues we need to look at the history of fire policy in tandem with the development of the science of disturbance ecology to gain a better understanding of the issue.

SLOW AWAKENING

ECOLOGY'S ROLE IN SHAPING FOREST FIRE POLICY

Numerous books and commentaries have described the century-long evolution of forest fire policy in the United States. However, rarely have these accounts focused on one of the seminal factors that provoked a transformation in policy and fire-control practices—namely, expanding knowledge of fire ecology.

Soon after its inception in the early 1900s the U.S. Forest Service adopted a policy that can be described as “fire exclusion,” based on the view that forest fires were unnecessary and a menace.¹ In the late 1970s, however, the agency was compelled by facts on the ground to begin transitioning to managing fire as an inherent component of the forest.² This new direction, “fire management,” is based on realization that fire is inevitable and can be either destructive or beneficial depending largely on how fires and forest fuels are managed. Despite the obvious logic of fire management it continues to be very difficult to implement on a significant scale. To understand why fire management is impeded and perhaps gain insight for advancing its application, we need to look at the history of fire policy in tandem with the development of the science of disturbance ecology. It is also important to review changing forest conditions and values at risk to wildfire. Certain aspects of the situation today make it more difficult to live with fire in the forest than was the case a century ago.

This story begins with the emergence of the profession of forestry in America at the turn of the twentieth century. The first

professional foresters in the United States were educated in humid regions of Europe, where concepts of forestry developed primarily to establish tree plantations on land that had been denuded by agrarian people seeking firewood and building material and clearing forestland for grazing.³ Native forests in these regions had largely disappeared long before, and fire in the forest was considered an undesirable, damaging agent. In retrospect, the European model of forestry did not apply very well to the vast areas of North American forest consisting of native species that had been maintained for millennia by periodic fires. For instance, much of the Southeast and a great deal of the inland West supported forests of fire-resistant pines with open, grassy understories, perpetuated by frequent low-intensity fires.

From the outset, American foresters had to confront damaging wildfires, often caused by abandoned campfires, sparks from railroads, and people clearing land. Arguments for “light burning,” or what is today called prescribed burning, to tend the forest were first made in print during the 1880s, before there were forest reserves or an agency to care for them.⁴ Timber owners in northern

BY STEPHEN F. ARNO



The Pulaski tunnel, seen one month after the Big Burn swept through Montana and Idaho in August 1910. The Big Burn made a folk hero of ranger Ed Pulaski when he forced his men to take refuge from the fire in this old mine shaft outside Wallace, Idaho. The fire also convinced agency leaders that more men and money could prevent similar disasters in the future.

California liked setting low-intensity fires under ideal conditions as a means of controlling accumulation of fuel, a technique used by Native Americans for centuries.⁵ Stockmen liked to burn in order to stimulate growth of forage plants. Settlers used fire for land clearing and farming. Romanticists favored it for maintaining an age-old Indian way of caring for the land.

Fire historian Stephen Pyne concludes that there was no presumptive reason why American forestry should have rigorously fought against all forms of burning in the forest.⁶ What the new government foresters like Gifford Pinchot and William Greeley refused to accept was that frontier laissez-faire burning practices could be allowed to coexist with systematic fire protection, which increasingly became the forester's mission. Foresters saw light burning, derisively called "Piute burning" by Forest Service leaders, as a political threat, and they refused entreaties from advocates of burning to develop procedures for applying fire as a forestry practice.⁷ Ironically, promoters of light burning were in a sense recognizing that it is important to account for natural processes in managing native forests, a concept termed "ecosystem management" when it was finally endorsed by the chief of the Forest Service in 1992.⁸

The "light burning" controversy ramped up considerably in 1910. President Taft, who succeeded Theodore Roosevelt in 1909,

appointed Richard Ballinger as Secretary of the Interior. Soon Ballinger was accused of virtually giving away federal coal reserves to his industrialist friends by Forest Service Chief Gifford Pinchot, who publicly denounced Ballinger for corruption. Unable to control Pinchot, President Taft fired him in January of 1910, an action that sparked a national controversy since Pinchot was highly respected as a leader of the conservation movement. The fact that Pinchot's nemesis, Ballinger, supported light burning—stating "we may find it necessary to revert to the old Indian method of burning over the forests annually at a seasonable period"—certainly didn't help that cause gain favor with foresters. By unhappy coincidence, in August 1910, the same month that "the Big Burn" consumed 3 million forested acres in the Northern Rockies, *Sunset* magazine published an article by timberland owner George Hoxie calling for a government program to conduct light burning throughout California forests.⁹ (The fact that the Big Burn occurred primarily in wetter forest types more susceptible to stand-replacing fire than most California forests was not generally recognized nor understood, in large part because there was little understanding of forest ecology at the time.)

In October 1910, Pinchot's successor Henry Graves visited T. B. Walker's extensive timberlands in northeastern California.¹⁰ Graves viewed tracts of ponderosa pine–mixed conifer forest that

Walker's crew had methodically "underburned" (a low-intensity surface fire under the trees) after the first fall rains in order to reduce hazardous fuel and brush. Graves did not deny the effectiveness of the treatment, but felt it was bad to kill seedlings and saplings. More than that, he could not condone the use of fire in the forest. It did not help that one of Walker's light burns had escaped earlier in the year and raced across 33,000 acres before submitting to control. Then, like now, deliberate burning in the forest was not risk free; however, light burning was aimed at reducing the greater hazard of severe wildfires.

Ironically, in 1899 Pinchot had published an article in *National Geographic* magazine containing many observations on the importance of historic fires in propagating economically important and iconic trees including longleaf pine, giant sequoia, coastal Douglas-fir, and western larch. Pinchot noted that had fires been kept out of the great Douglas-fir forests of western Washington, "the fir which gives them their distinctive character would not be in existence, but would be replaced by the [smaller and less valuable] hemlock...with its innumerable seedlings."¹¹ Nevertheless, Pinchot clearly advocated control of forest fires.

There were other inklings that fire might be useful in managing forests. In a 1910 Forest Service publication, pioneering ecologist Frederic Clements advocated using controlled fire in the management of high-elevation lodgepole pine forests.¹² On the other hand, Clements and his contemporaries developed widely adopted models of forest succession that fostered a belief that undisturbed "climax" forests, the end-point of succession, were more desirable than forests maintained in a "sub-climax" state by periodic fires even if those disturbances had occurred naturally.¹³ The successional models appealed to foresters because they implied that keeping fire out and allowing dense forests to develop would lead to greater production of timber. The models appealed to early ecologists as well perhaps because they suggested that the most desirable forest was one protected from "disturbance," whether by fire, windstorms, or human activities.

The debate in California between advocates of light burning and foresters that championed fire exclusion, continued until about 1930. By then, the U.S. Forest Service had amassed abundant in-house studies and overwhelming political influence supporting its well-funded program of comprehensive fire protection. Early Forest Service studies of fire scars on trees confirmed that a history of frequent low-intensity fires characterized California's magnificent mixed-conifer forests that featured giant ponderosa and sugar pines. But the agency asserted that fire scars hastened death and at least lowered the value of trees for lumber. Also, they felt that because fires killed seedlings and saplings, they prevented the forest from becoming fully stocked and producing the maximum quantity of timber. These seemed to be plausible judgments, based on a concept that the West's native forests could eventually be farmed much like forest plantations in Europe.

FIRE IN THE SOUTH

The South, particularly its valuable longleaf pine forests, became the stage for pressuring the U.S. Forest Service and the forestry profession to accept burning as a necessary practice and thereafter to employ its resources to develop methods and technology for controlled burning. Paradoxically, Yale University's School of Forestry, established through the efforts of Forest Service founders Pinchot and Henry Graves, produced the definitive evidence that controlled burning was essential to management of the South's symbolic pine.



After a decade of debate over "light burning," Forest Service chief William Greeley called a national conference to discuss fire control in 1921 in California. A major outcome of the conference was the agency setting forest fire control as a priority over other activities and banning light burning. William Osborne, inventor of the Osborne Firefinder, is standing 2nd from left; future chief Lyle Watts is 6th from left; William Greeley is in the second row 7th from left; and future conservation writer Aldo Leopold is 3rd from left in the front row.

In early colonial times a forest dominated by longleaf pines covered an estimated 60 million acres along the broad Coastal Plain from east Texas to Virginia. Like the West's ponderosa pine forests, the original longleaf woodlands were mostly open-grown and grassy beneath, and were perpetuated by frequent fires. One native traveler in 1841 described this forest as nearly pure longleaf pine "rolling like waves in the middle of the great ocean...The grass grows three feet high. And hill and valley are studded all over with flowers of every hue."¹⁴

However by the 1910s when federal forestry began focusing on the South, its forests were being indiscriminately logged and grazed by cattle and hogs, and longleaf pine was not regenerating. Biologists speculated that fire might be important in restoring the pinelands, and a professor at Yale's School of Forestry, H. H. Chapman, began long-term studies of the effects of fire exclusion and controlled burning. Excluding fire allowed low brush, palmetto, and other combustible vegetation, known as the "Southern rough," to build up rapidly. Chapman found that the rough could out-compete pine seedlings, but also that the practice of annual burning to control the rough killed pine seedlings. However, burning at intervals of a few years controlled the rough and allowed longleaf pine seedlings to attain a larger, fire-resistant size. This periodic burning also controlled brown-spot needle disease that often killed seedlings.¹⁵

Chapman's publicized findings supported periodic burning and were bolstered by other studies that showed burning the pinelands enhanced their forage value for livestock. Also, the U.S.



U.S. FOREST SERVICE. FOREST HISTORY SOCIETY PHOTOGRAPH COLLECTION

Biological Survey published studies in 1931 showing that fire was essential for maintaining habitat for the South's premiere game bird, the bobwhite quail. Moreover, the rapid buildup of Southern rough as a hazard for uncontrollable wildfires compelled many field foresters to stubbornly urge Forest Service administrators to allow controlled burning. By 1934, the Forest Service's own Southern Research Station was covertly recommending to administrators that controlled burning be allowed if done for specified objectives by skilled technicians.¹⁶

Forest Service leaders in Washington feared that if it admitted fire could be beneficial in Southern forests and granted permission to burn, this would embolden burning advocates in the West. Thus, the agency continued to suppress and censor findings that supported use of fire, as was later revealed in Ashley Schiff's 1962 book, *Fire and Water: Scientific Heresy in the Forest Service*. At the same time, the Forest Service covertly allowed controlled burning in many instances in the South, sometimes under the guise of "administrative studies."¹⁷ Finally in December 1943, the wartime manpower shortage for fighting fires and the swelling tide of evidence and agitation for permission to burn from within and outside of forestry caused Chief Forester Lyle Watts to sanction use of fire, but only in the South.¹⁸

FIRE IN THE WEST

Meanwhile, the January 1943 issue of the *Journal of Forestry* contained a startling and revolutionary article by a government forester, making a case for controlled burning in ponderosa pine forests of the West, based on both practical and ecological considerations. The disturbing light-burning movement that had been snuffed out by 1930 was suddenly reignited, and for the first time promoted in a professional journal by an experienced forester. Its appearance in the *Journal of Forestry* is remarkable in part because the journal's publisher, the Society of American Foresters, had since its establishment in 1900 by Gifford Pinchot been closely if informally associated with the Forest Service. Nevertheless, the

1943 article was even more provocative than the Southern research papers that the Forest Service had suppressed.

The title "Fire as an Ecological and Silvicultural Factor in the Ponderosa Pine Region" promised that for the first time the case for using fire would be based upon its historical ecological role as well as its potential contribution to timber management. How is it that a government forester could publish such an insubordinate treatise at a time when the Forest Service worked hard to suppress anything that appeared to support controlled burning? The author, Harold Weaver, was employed by the Indian Service (today's Bureau of Indian Affairs) in the Department of the Interior, a relatively little-known agency managing Indian reservation lands, and he built his case based on years of careful observations. Still, as David Clare recounts in *Burning Questions: America's Fight with Nature's Fire*, Weaver's article barely passed through a gauntlet of skeptical reviewers. Also, Weaver's byline in the journal carried the unusual disclaimer, "This article represents the author's views only and is not to be regarded in any way as an expression of the attitude of the Indian Service on the subject discussed," no doubt in an attempt to shield his employer from Forest Service wrath.¹⁹

When Weaver graduated with a degree in forestry from Oregon State College in 1928, he was "thoroughly imbued, at that time, with the incompatibility of [ponderosa] pine forestry and fire." Then as he worked in central Oregon's ponderosa forest, he was shocked when experienced woodsmen and even a renowned forest biologist—an expert on bark beetles—told him that the policy of excluding fire was a serious mistake. Weaver countered with a standard argument that pines could not regenerate if fires were allowed, but the entomologist showed him a stand of young pines many of which had basal scars from having survived past fires. This opened Weaver's eyes. Then, while examining young and old pines in many areas, he found they had survived fires at intervals mostly between 5 and 25 years. These burns had reduced fuels and thinned young trees, killing more young firs than pines. Inspecting a broad range of forests that were originally dominated

by big ponderosas, he found that most had now experienced a long period without fire and they contained dense thickets of small firs and pines often malformed and stagnating.²⁰

Disputing conventional wisdom, Weaver's article used observations of tree vigor and other ecological evidence to assert that the thickets of young trees were heavily overstocked and incapable of developing into large trees without thinning by fire or some other means. He pointed out that thinning with fire was more economical than with ax or saw, and had the advantage of removing surface fuel as well. Weaver concluded that "converting the virgin [ponderosa] forest to a managed one depends on either replacing fire as a natural silvicultural agent or using it as a silvicultural tool."²¹

Weaver's article was doubtless viewed as apostasy by many foresters, although one national forest supervisor congratulated him saying, "It takes a lot of courage, even in this free country of ours, to advance and support ideas that are contrary to the trend of popular, professional thought." In the years after his ground-breaking article appeared, other foresters who favored using fire in ponderosa pine contacted Weaver. He conducted burning experiments in ponderosa pine forests of Washington, Oregon, and Arizona, wrote more articles, and led field workshops. Responding to a 1951 article by Weaver, the distinguished University of California forestry professor Emanuel Fritz congratulated him for continuing to study the use of fire in silviculture, adding that "In the early days of forestry we were altogether too dogmatic about fire and never inquired into the influence of fire on shaping the kind of virgin forests we inherited. Now we have to 'eat crow.'"²²

Weaver's work helped encourage another even more controversial advocate for controlled burning, this time located in California, where light burning promoters had long bedeviled the Forest Service. Harold Biswell had earned a PhD in botany and forest ecology at the University of Nebraska, a leading institution in ecological education. He also spent several years as a Forest Service researcher in the South, where he became acquainted with controlled burning in pinelands as it was being introduced in the 1940s. In 1947, Biswell became a professor of forestry and plant ecology at the University of California, Berkeley. As he departed the Forest Service, Edward Kotok, chief of research, admonished him to stay out of controlled burning when he got to California. He arrived just as "controlled" fire was being returned to the land.²³

In 1945, the California legislature authorized state foresters to issue burning permits for chaparral and other brushlands to improve range and wildlife habitat. Upon arrival in Berkeley, Biswell soon began studying the effects of brushland burning. In the early 1950s he developed a method of firing the bottom of south-facing brushlands in spring under conditions where the fire would die out at a ridge-top when it reached wetter north-facing slopes. Livestock grazers and the state Fish and Game agency liked the results, but forestry authorities became alarmed when Biswell began experimental burning in ponderosa pine forests on the slopes of the Sierra Nevada.²⁴

Biswell and Harold Weaver first met in 1951, and then began a long relationship reviewing each others' projects and manuscripts, and as David Clare put it, "commiserating with each others' trials." Biswell was introducing controlled burning to large numbers of students, researchers, ranchers, wildlife specialists, and others through his university position, and this outraged some

state and federal fire suppression authorities. They demanded that university administrators restrain him; but then influential supporters rose to his defense. Biswell persevered, serving for 26 years at the university, and together with Weaver gaining a cadre of collaborators, adherents, and other allies. Both of these principals lived to see the Forest Service make a stunning reversal of policy in the late 1970s and embrace prescribed burning in ponderosa pine and in other vegetation types as well.²⁵

SMOKEY AND THE BIG BURN

However, immediately following World War II, while Weaver and Biswell were gaining converts among people connected to land management a slick national advertising campaign run by the Ad Council was selling the opposite message to the public at large. The Wartime Council had employed Walt Disney's Bambi character for a year as the symbol for fire prevention on posters that showed fire devastating wildlife habitat and the landscape, reinforcing the depiction of fire in the 1942 movie *Bambi* as a malevolent force created by evil men.²⁶ In 1944 Bambi was replaced by Smokey Bear, whose trademark slogan "Only you can prevent forest fires" has convinced tens of millions of Americans that fire in the forest is entirely destructive and not natural. His revised message of "Only you can prevent wildfires" hasn't altered that perception. Seventy years later public misperception of fire impedes forest managers from implementing controlled burns and dissuades forest homeowners from safeguarding their property.

While Weaver and Biswell's efforts focused on managed and accessible forests, another area of concern was raised by critics of the fire exclusion policy: A need to return natural fire to wilderness and backcountry. Until the early 1920s, a few high-level administrators in the Forest Service favored allowing some fires to burn in remote areas based on economic and other practical considerations but were largely shouted down, particularly after the Service chose a hard and fast policy of completely suppressing all fires following the Big Burn. Then in 1934, an unexpected dissenting voice arose from a Montana-born forester who had joined Pinchot's Bureau of Forestry in 1902 and as a supervisor had battled the 1910 fires. The *Journal of Forestry* published an essay by Elers Koch, a well-respected forester in the Forest Service's Northern Region, in which he lamented the effects of a complete suppression policy that entailed building roads, trails, and phone lines to a network of fire lookouts in the rugged backcountry of north-central Idaho.²⁷ Koch argued that the area was too rough and erosive for timber management and that forces of nature including fire should have been left alone to preserve its special wilderness character. Although the agency's Washington office rebutted Koch's contentions, in a sense it also confirmed them by establishing the 1.9 million-acre Selway-Bitterroot Primitive Area in 1936. Thirty-seven years later the ponderosa pine-dominated canyons of the Selway drainage became the site of the first natural fires deliberately allowed to burn in the Northern Rockies.²⁸

FIRE AND ECOLOGICAL CONCERNS

In 1924, Forest Service forester Aldo Leopold advocated establishing the first national forest wilderness area, the Gila, in the ponderosa pine-covered mountains of southwestern New Mexico. Ponderosa pine forests soon became a focal point for concerns about perpetuating natural ecosystems in the West. Ecologists argued early on that these fire-dependent forests and their big, long-lived trees were jeopardized by the policy of complete fire

suppression. This case was presented in conclusive detail in 1960 by Charles Cooper in, "Changes in Vegetation, Structure, and Growth of Southwestern Pine Forests since White Settlement." Cooper concluded that a half-century of fire exclusion was the most important factor in irreversibly disrupting and degrading what had originally been a vast expanse of open-grown, big-tree ponderosa forest.²⁸

In the early 1960s, ecological concerns were finally becoming a national issue. A blue-ribbon committee selected by the secretary of the Interior delivered a groundbreaking report on wildlife management in the national parks that recommended restoring fire as a natural process. The report emphasized that wildlife habitat cannot be preserved in an unchanged condition, but instead is dynamic, and that habitat suitable for many species must be renewed by burning. This report helped crack open a door for use of fire in national parks and wildlife refuges during the late 1960s and in national forest wilderness areas during the 1970s.²⁹

By the 1970s, most ecologists recognized that natural agents of change like fire, floods, and hurricanes were vitally important in maintaining natural ecosystems, and that fire was an agent that humans had disrupted.³⁰ Today the concept of returning some form of fire as a process to native forests on public lands has gained scientific credibility. However, public opposition and a host of economic, legal, and logistical constraints stand in the way of reintroducing fire in most ponderosa pine forests, although not so much in large wilderness and back-country areas.

Beginning in the late 1960s a series of changes in national forest fire policy first by the National Park Service and then the Forest Service have attempted to allow reintroduction of fire for ecological and other beneficial purposes. However 70 years of institutional history and publicity promoting and practicing fire exclusion hampers this transition. Meanwhile knowledge of the ecological importance of fire, and evidence supporting management of fire and fuels for practical reasons, continues to accumulate.³¹

Hindrances to implementing fire management include a widespread naïve, Romantic vision in society that the ideal forest is one of undisturbed, even static, nature. Moreover, early ecologists

promoted Clement's undisturbed "climax" community model as a paragon rather than simply as the theoretical endpoint of forest succession, a position widely accepted by mid-twentieth-century foresters fixated on maximizing timber volumes. In contrast, the historical reality was often a fire-maintained "sub-climax" forest that featured resilient, fire-dependent tree species. For instance, fire-maintained forests featured towering white pines in New England, open groves of huge oaks and hickory in the Midwest, longleaf pine in the South, and sequoia, redwood, giant coastal Douglas-fir and pines in the West.

During the 1960s and 1970s Congress passed a variety of legislation aimed at protecting the environment. However, the Wilderness Act, Clean Air Act, the Endangered Species Act, and others were designed without good awareness of how fire-dependent ecosystems function. Instead, the legislation was crafted from a viewpoint that these ecosystems should be preserved unchanged. Throughout the ages, fires promoted biological diversity in the majority of American forests. Without fires, many of our magnificent trees would be rare or nonexistent because they grow in habitats that also contain shade tolerant ("shade loving") trees that would otherwise displace them. Also a large assortment of fruit-bearing trees and shrubs, flowering plants, nutritious grasses, and the animals that depend on them owed their existence to fires. Nevertheless, while environmental legislation implicitly endorses continued suppression of natural (lightning) fires, regulations also make it hard to substitute prescribed fires for the suppressed natural fires.

RISE OF THE WUI

Since about 1970, when the first Earth Day celebration was held, the rapid proliferation

of homes and other developments in American forests has greatly complicated all aspects of fire management. This broad and still growing forest residential zone termed the Wildland-Urban Interface (or WUI) poses a major challenge for firefighters. Millions of dwellings are situated in hazardous forest fuels, and the buildings themselves can be ignited by airborne embers. This vulnerability exists despite widespread educational campaigns and monetary incentives promoting non-flammable materials for roofs, siding, and decks, and fuel reduction treatments around



The use of Bambi demonstrated the effectiveness of using woodland creatures to appeal to the general public in helping promote the fire prevention message. For numerous reasons, the Ad Council ultimately selected a bear as their character.

SPECIAL COLLECTIONS, USDA NATIONAL AGRICULTURAL LIBRARY

forest homes. The existence of many high-hazard homes makes it hard for fire managers to use prescribed burning in nearby forests or to allow natural fires even in forests that are miles away.

When homes are threatened by forest fires, a great portion of the limited firefighting resources are diverted to protecting them rather than containing the fire itself. Although there is widespread support for refusing or limiting protection to dwellings surrounded by dangerous fuels and those that offer unsafe access for fire trucks, it is difficult politically and emotionally for firefighters to actually deny that protection. Hence, firefighter deaths, such as the 19 Hotshots who perished trying to protect Yarnell, Arizona, in 2013 are often related to the WUI.

Ironically, although thinning coupled with slash disposal, and often prescribed burning, has clearly demonstrated effectiveness in greatly moderating the intensity of wildfires that approach the WUI, anti-logging sentiments and administrative barriers often prevent these practices.³² Government financing of thinning and fuel treatments is very limited, even though cost-benefit analyses support them. Similarly, significant opposition remains to allowing natural fires to burn in wilderness and backcountry areas, highlighted by adverse reaction to the “let burn” policy during the fires in Yellowstone National Park in 1988. Nevertheless, repeated studies and observations indicate that returning fire to these forested areas tends to limit the size of later fires and has favorable ecological consequences.³³

Information on fire ecology and the important role fire plays in forest ecosystems needs to be effectively integrated into the training classes that firefighters take. Firefighters who do not recognize fire as an integral component of the forest ecosystem may view their mission as a heroic attempt to save the forest, which may lead them to take inappropriate risks.

MASTER OR SERVANT?

More than a century ago California timberman George Hoxie argued that we had best adopt fire in the forest as our servant; otherwise it will surely become our master.³⁴ Hoxie’s advice about adopting fire seems even more relevant today. A century of suppressing fire and ignoring the evidence of its ecological benefits has given rise to more severe and larger wildfires. The damage done to the land and to public policy can be reduced only if all stakeholders are willing to learn from the past and adapt to present conditions.

The challenge is to implement a more ecologically based and practical forest fire policy. Doing so is rooted in education but it begins with how we live. We cannot remove people from the Wildland-Urban Interface, nor stop them from moving there. But we can motivate and encourage them to live more intelligently and safely. Those living there must shoulder personal responsibility



Homes in Colorado Springs, Colorado, burned in the 2012 Waldo Canyon Fire. This is a frequent scene in the Wildland-Urban Interface.

KARI GREER, CO_12-07-02_0344, NATIONAL INTERAGENCY FIRE CENTER WEBSITE/COURTESY BRUCE KILGORE

and not rely on government largesse and resources for their protection. State and local officials can follow the example of Montana’s governor Brian Schweitzer by challenging WUI residents to take responsibility and warning them not to depend on the government to save their forest home.³⁵ State and county governments should adopt regulations requiring fuel reduction, fire-resistant building materials, and adequate access roads as part of rural zoning or subdivision or building permits. More rural fire districts should be encouraged to map and evaluate homes and other developments and rate them in advance for feasibility and risk associated with providing protection. In conjunction with this rating, fire districts can point out critical deficiencies associated with protection of each homesite. Insurance and mortgage loan providers should be encouraged to consider wildfire hazards when evaluating applications.

All firefighters—whether wildland or structural—who work in the WUI, as well as WUI residents, should be educated about the intrinsic role of fire in the forest. An appreciation of fire as an important natural process provides a useful perspective for these people who have to deal directly with the threat and consequences of unwanted fires. Given the impact of climate change, disease, and insects on forests and forest health, it is becoming an ever-more critical need to educate the broader, general public about the ecological importance of fire and the management of forest fuels. The Forest Service already has an effective messenger in Smokey Bear when it comes to talking about forest fire. Though he unfortunately conveyed some wrong information about the role of fire in forests, his popularity could be leveraged for getting across a revised message about the ecological role of fire and how we can better adapt to fire-dependent landscapes. But whether or not Smokey is used, the message needs to be disseminated to all.

Legislative action at the local and state levels must be complemented by action at the federal level. It begins with educating Congress, federal land-management agencies, and stakeholders (including environmental groups and timber and lumber industry representatives) about forest conditions and the need for action.



Returning fire to the landscape is desirable in many parts of the nation. Here hotshot crew member Brigitte Boysen ignites a prescribed fire on the Nantahala National Forest in western North Carolina in 2005.

These groups need to be persuaded to set aside long-standing animosities so that laws and regulations can be revised to allow players like the Forest Service to return fire to the landscape and to conduct more widespread and strategically located thinning and fuel reduction operations. We know which ecological systems historically relied upon fire to thrive. It's time to put that knowledge to work. □

Stephen F. Arno (sfarno@msn.com) is a retired research forester with the U.S. Forest Service, Rocky Mountain Research Station. This article was originally published on the blog *Peeling Back the Bark* in 2014 but has been updated.

NOTES

1. R. E. Keane, K. Ryan, T. Veblen, C. Allen, J. Logan, B. Hawkes, "Cascading Effects of Fire Exclusion in Rocky Mountain Ecosystems: A Literature Review," U.S. Forest Service, Rocky Mountain Res. Sta., Gen. Tech. Report-91 (2002).
2. T. C. Nelson, "Fire Management Policy in the National Forests: A New Era," *Journal of Forestry* 77(1979): 723–25.
3. Friederich-Karl Holtmeier, "Geocological Aspects of Timberlines in Northern and Central Europe," *Arctic & Alpine Research* 5(3) (1973): A45–A54.
4. Stephen J. Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Princeton, NJ: Princeton University Press, 1982), 100–12.
5. Theodore Catton, *American Indians and National Forests* (Tucson: University of Arizona Press, 2016), 11–13, 291–92.
6. Pyne, *Fire in America*, 100–12.
7. In 1920 Chief Henry Graves and his successor William Greeley are both on record as opposing light burning. See "Forest Service Opposes Light Burning of the Forests," *Forest Leaves* 17(8) (April 1920): 127–28; and William Greeley "Piute Forestry' or the Fallacy of Light Burning," *The Timberman* (March 1920): 38–39; reprinted in *Forest History Today* Spring 1999: 33–37. See David Carle, *Burning Questions: America's Fight with Nature's Fire* (Westport, CT: Praeger Publishers, 2002), 27–31, for more on the debate between Henry Graves and William Greeley versus timber owner Stewart Eduard White that played out in the pages of *Sunset* magazine in 1920.
8. F. D. Robertson, "Ecosystem Management of the National Forests and Grasslands," (June 4, 1992) Memo to Regional Foresters and Research Station Directors, USDA Forest Service, Washington, DC.
9. Pyne, *Fire in America*, 103; Stephen J. Pyne, *Year of the Fires: The Story of the Great Fires of 1910* (New York: Viking Penguin, 2001), 235–36; G. L. Hoxie, "How Fire Helps Forestry," *Sunset* 34 (1910): 145–51.
10. Pyne, *Year of the Fires*, 235.
11. Gifford Pinchot, "The relation of forests and forest fires," *National Geographic* 1899(10): 393–403.
12. F. E. Clements, "The Life History of Lodgepole Burn Forests," U.S. Department of Agriculture, Forest Service—Bulletin 79 (1910).
13. R. Daubenmire, *Plant Communities: A Textbook of Plant Synecology* (New York: Harper & Row, 1968), 229–40; Pyne, *Fire in America*, 491–92.
14. Mississippi congressman John F. H. Claiborne, quoted in Lawrence S. Earley, *Looking for Longleaf: The Fall and Rise of an American Forest* (Chapel Hill: University of North Carolina Press, 2004), 13.
15. A. L. Schiff, *Fire and Water: Scientific Heresy in the Forest Service* (Cambridge, MA: Harvard University Press, 1962), 21–26; Pyne, *Fire in America*, 112–16.
16. Pyne, *Fire in America*, 115–16.
17. Schiff, *Fire and Water*, 75.
18. Pyne, *Fire in America*, 116.
19. Harold Weaver, "Fire as an Ecological and Silvicultural Factor in the Ponderosa Pine Region of the Pacific Slope," *Journal of Forestry* 41(1): 7–14; Carle, *Burning Questions*, 60–61.
20. H. Weaver, "Fire and Its Relationship to Ponderosa Pine," *Proceedings—Tall Timbers Fire Ecology Conference* 1968(7): 127–49.
21. Weaver, "Fire as an Ecological and Silvicultural Factor," 7.
22. Carle, *Burning Questions*, 62.
23. *Ibid.*, 57–58.
24. *Ibid.*, 58–59.
25. Nelson, "Fire Management Policy."
26. Pyne, *Fire in America*, 176–79; R. H. Lutts, "The Trouble with Bambi: Walt Disney's Bambi and the American Vision of Nature," *Forest and Conservation History* 36(1992): 167–68, 169. The film was considered a financial failure after its release in 1942, which may be why Disney allowed the use of the character for one year. It became successful after subsequent releases following World War II.
27. Elers Koch, "The Passing of the Lolo Trail," *Journal of Forestry* 33(2): 98–104.
28. See: Diane Smith, "From Research to Policy: The White Cap Wilderness Fires Study," *Forest History Today* 20, nos. 1 & 2 (2014): 4–12.
29. A. S. Leopold, S. Cain, C. Cottam, I. Gabrielson, and T. Kimball, "Wildlife Management in the National Parks," *Transactions of the North American Wildlife and Natural Resources Conference* 28(1963): 28–45; Stephen J. Pyne, "Vignettes of Primitive America: The Leopold Report and Fire Policy," *Forest History Today* 23, no. 1 (2017): 13–15.
30. Pyne, *Fire in America*, 493; E. P. Odum, *Ecology and Our Endangered Life-Support Systems* (Sunderland, MA: Sinauer Associates, 1989).
31. Stephen J. Pyne's *Between Two Fires: A Fire History of Contemporary America* (Tucson: University of Arizona Press, 2015) offers an examination of federal fire policy and the impact of fire ecology research at Tall Timbers Research Station in Tallahassee, Florida, that comes up to the present.
32. M. C. Johnson, D. L. Peterson, C. L. Raymond, "Managing Forest Structure and Fire Hazard—A Tool for Planners," *Journal of Forestry* 105(2): 77–83; see also: Andrew T. Hudak, et al., "Review of Fuel Treatment Effectiveness in Forests and Rangelands and a Case Study from the 2007 Megafires in Central Idaho USA." U.S. Forest Service, Rocky Mountain Res. Sta., Gen. Tech. Report-252 (2011).
33. S. F. Arno and C. E. Fiedler, *Mimicking Nature's Fire: Restoring Fire-Prone Forests in the West* (Washington, DC: Island Press, 2005), 188–200.
34. Hoxie, "How Fire Helps Forestry," 145.
35. Charles Johnson, "Governor: Homeowners Must Prepare for Fire," *Missoulian* June 23, 2009, accessed at http://missoulian.com/news/local/governor-homeowners-must-prepare-for-fire/article_919e5766-eed7-5a1f-ac44-08f5ce2c0bb9.html.

In this excerpt from the forthcoming book Yankee Money: The Life and Legacy of the Great Southern Lumber Company, the authors examine the transformation of the Gulf Coast's pine forests following the failed attempts to rapidly settle the region after the Civil War.

CAUSES AND CONSEQUENCES

*OF THE FIRST LUMBER BOOM
IN LOUISIANA AND THE GULF SOUTH*

The lumber boom in Louisiana and neighboring states during the early part of the twentieth century has been described as “probably the most rapid and reckless destruction of forest known to history.”¹ Nearly 140 billion board feet of yellow pine lumber was produced between 1904 and 1930 in

Louisiana and Mississippi alone.² According to one historical account of Louisiana, “With a policy of ‘cut out and get out,’ priceless natural resources were lost by the millions of acres. Large sections of the state became vast ‘stumpscapes’ of barren cutover land.”³

Such hyperbole, however, tends to obscure the political, economic, and ecological realities of the era and the region. The extensive lumbering in the longleaf pine (*Pinus palustris*) forests of the Gulf Coast region during the early years of the twentieth century was made possible a generation earlier when Congress, hoping to stimulate much needed economic development in the war-torn region, repealed the Southern Homestead Act and opened the remaining federal public lands in the South to cash purchase. Speculators, mostly from outside the region, quickly acquired vast stands of virgin longleaf and then waited while the lumber industry cut out the forests of the Lake States before moving south.

LUMBERING IN POSTBELLUM AMERICA

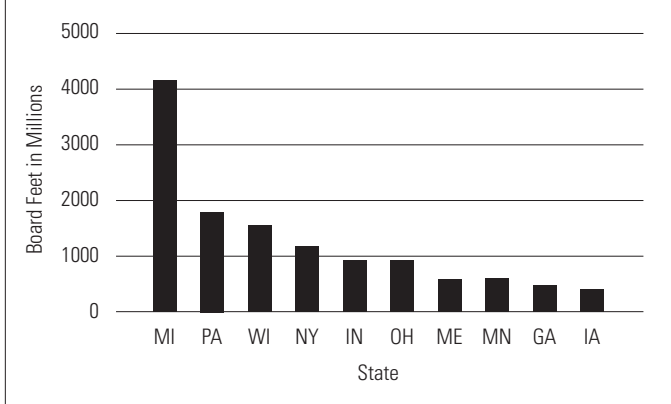
For most of the nineteenth century, “the manufacture of lumber was the foremost industry in America... It employed more men and capital, and produced more wealth than any other pursuit.”⁴ Recognizing the importance of the lumber industry to America’s economy, the Census Bureau in 1880 published the *Report on the Forest Resources of North America (Exclusive of Mexico)*, prepared by Charles S. Sargent, Arnold Professor of Arboriculture at Harvard College and the leading expert on America’s forests. At that time, more than a third of all lumber produced in the United States came from the Lake States, with Michigan by far the leading producer of white pine (*Pinus strobus* L.), the preferred structural lumber at the time. (See Figure 1). The report anticipated that at the current rate of production, Michigan’s white pine inventory, along with that of its neighbors Wisconsin and Minnesota, would

BY MASON C. CARTER AND JAMES P. BARNETT



In this undated photo, a man stands among longleaf pines owned by the Great Southern Lumber Company on the north shore of Lake Ponchartrain, Louisiana.

Figure 1. The Ten Leading States in Lumber Production, 1880

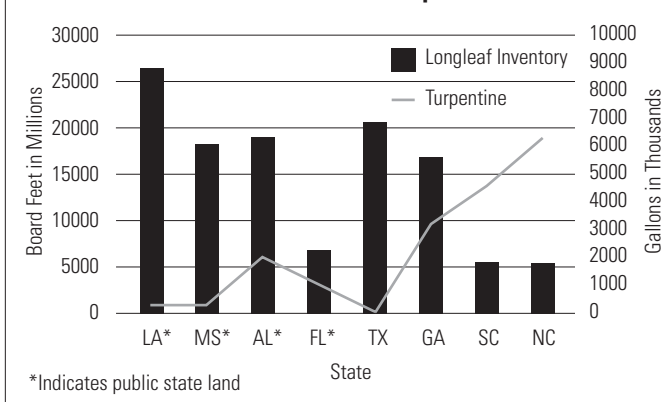


be exhausted in about ten years. Sargent predicted that lumbermen would soon be looking to the Pacific Northwest and the South for new sources of lumber:

*The southern pine forests, although stripped from the banks of streams flowing into the Atlantic, are practically untouched in the Gulf States, especially in those bordering the Mississippi River. These forests contain sufficient material to long supply all possible demands which can be made upon them.*⁵

The longleaf stands in the Carolinas and Georgia had been worked for naval stores since early colonial days to supply the British navy's needs and subsequently that of America's merchant fleet. The methods used to collect pine tar prior to the twentieth century destroyed most of the lumber value of the first log cut and usually led to the death of the tree.⁶ But the forests of the western Gulf Coast were practically untouched by the naval stores industry (See Figure 2).

Figure 2. Inventory of Longleaf Pine and Annual Production of Gum Turpentine, 1880



Sargent's report confirmed three things many northern mill owners already knew or suspected. First, the best and most accessible stands of white pine and hemlock, the bark of which was used for tanning leather, were gone or soon would be. Second, within little more than a decade the mills must relocate near a new source of raw material or go out of business. Last, the vast stands of southern pine, especially longleaf forests on public land along the coast, were

the closest to existing markets, and recent congressional action had opened these public lands for purchase at very low prices.

Early lumbermen preferred longleaf pine, which they believed to be superior in strength and durability to all other southern pines. Longleaf occurred throughout most of the upland areas of Louisiana, but the pure virgin longleaf stands most coveted by lumbermen were confined to three areas on lower coastal plain and flatwoods soils separated by alluvial deposits of the Red and Mississippi rivers. Reliable timber inventory methods did not exist when Sargent gathered his data, but he estimated that Louisiana had 7.321 billion board feet of longleaf in the region north of the Red River, 13.351 billion board feet southwest of the Red River, and 5.826 billion board feet east of the Mississippi River.⁷

A sense of the original extent of pure virgin longleaf may be found in a 1921 report from the Louisiana Department of Conservation, which estimated 7.4 million acres of longleaf pine and 4.4 million acres of shortleaf (primarily *Pinus taeda* and *Pinus echinata*), of which 75 percent of the longleaf and 85 percent of the shortleaf had been logged by 1921.⁸

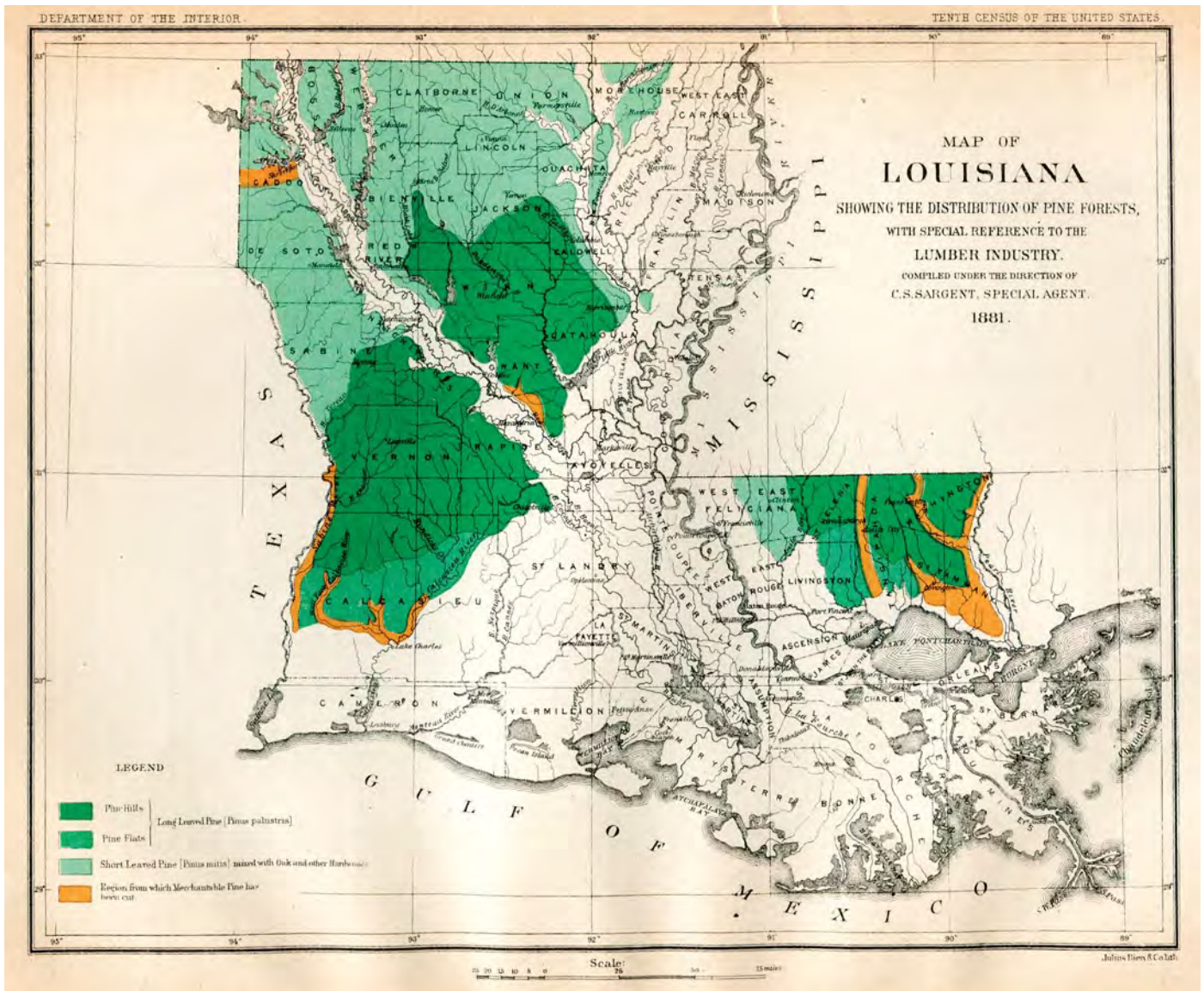
Shortleaf and longleaf were not the only two species harvested, though. According to a 1931 account of the southern pine industry, approximately 71 billion board feet of yellow pine lumber—which included all species—was produced in Louisiana from 1869 to 1929, an average of just over 6,000 board feet for every acre of pine timberland in the state.⁹

PUBLIC POLICY AND THE PUBLIC LANDS IN THE SOUTH

During the first two decades following the Civil War, "the South was a laboratory for experiments in land reform."¹⁰ With the Confederacy defeated and slavery abolished, Congress passed the Southern Homestead Act of 1866 to provide a pathway to landownership by freedmen. The law restricted entry on approximately 46 million acres of public land in the South to freed blacks and loyal whites. For a fee of just a few dollars, an eligible individual could file claim to 80 acres of land.¹¹ Though well intended and in spite of the dedicated efforts of federal officials in charge of implementation, the act resulted in very few successful homesteads.

Among the many obstacles potential homesteaders faced in their efforts to file and establish a successful tenure were confused or hostile local officials, threats and physical violence from neighboring white landowners, and a lack of tools and equipment for farming.¹² But the greatest barrier to successful homesteading was the fact that the vast majority of the available public land was not suitable for row-crop agriculture. English, French, and Spanish land grants from colonial days had claimed most of the prime bottomland along the major waterways. The federal government had been selling public land in the South for \$1.25 per acre for many years prior to the Civil War. The Graduation Act of 1854 further reduced the price to as little as 12.5 cents per acre, depending on the length of time the land had been on the market. The Graduation Act was superseded by the Homestead Act of 1862, but during the eight years it was in effect, 77,561,007 acres of land was sold, more than half of which was in the South.¹³

When the Southern Homestead Act was passed in 1866, most of the public land in Louisiana available for homesteading was covered with heavy stands of yellow pine or cypress, or it required large capital investments in drainage or flood control before it could be farmed successfully.¹⁴ Between 1866 and 1883, there were 121,964 homesteads established on 12,187,812 acres of the more than 40 million acres of federal land available in the five



SARGENT, REPORT ON THE FOREST RESOURCES OF NORTH AMERICA

Charles Sargent estimated that Louisiana had 7.321 billion board feet of longleaf in the region north of the Red River, 13.351 billion board feet southwest of the Red River, and 5.826 billion board feet east of the Mississippi River.

southern public lands states—Alabama, Arkansas, Florida, Louisiana, and Mississippi.¹⁵ Of the few successful patents, many were to employees or agents of timber and mining interests who relinquished their titles to their employer.¹⁶

As a recent reexamination of the Southern Homestead Act concluded,

Using a new homestead-level sample from Louisiana, we ... find the overall poor quality of land available is the primary reason for the act's failure, while timber fraud and a lack of wealth among homesteaders had little effect on patenting. We find that literacy was strongly and negatively associated with patenting. We attribute this finding to literacy allowing homesteaders to learn quicker about the potentials of homesteads and thus optimally relinquish their claims on marginal land.¹⁷

By 1875, federal officials were ready to give up on the 1866 act and began urging repeal. Federal Land Commissioner S. S. Burdett observed, "Most of the land in the southern states, being valuable only for timber, was filed upon by employees of lumbermen who,

when the timber was stripped off, abandoned the claims."¹⁸ His successor, J. A. Williamson, stated, "If valuable pine lands are to be given away... would it not be better to enact some law where the title can pass without perjury?"¹⁹

By the 1870s most southern political and business leaders had lost confidence in homesteading as a means of building the rural economy. They believed opening public land to purchase would promote mining and lumbering, which, together with the accompanying expansion of railroads, would bring jobs and economic development. Northern lumbering interests and their representatives in Congress had supported the 1866 law in the belief that it would thwart development of competition from southern yellow pine. But they, too, changed their minds and began to look for opportunities to move their operations to the South.

On December 8, 1875, Senator Powell Clayton introduced Senate Bill 2 to repeal the Southern Homestead Act.²⁰ Speaking in support of his bill, the Republican from Arkansas made it clear that opening up the public lands for lumbering was a major objective:

A citizen of Missouri who has found a tract of Government land valuable for its timber only, upon which he may wish to erect a sawmill...can purchase that tract by applying at the land office... if his neighbor in Arkansas...desires to engage in the same laudable pursuit he is stopped by the law we now seek to repeal.... In [Michigan] the value of lumber product amounts to nearly one-half of the entire products arising from agriculture, including stock. Now, what would be thought in that State of a policy which would shut out this vast field of productive labor and hold it in the Government?²¹

Missouri Democrat Lewis Bogy spoke in support of repeal because he believed it would open up mining opportunities not just in his home state but across the South. Speaking before the Senate, he said that “persons who desire to become purchasers [of land] for the purpose of going into the mining operations and developing the resources of that State [Arkansas] are precluded; and this keeps these States in a sad condition all the time.”

Senator Charles W. Jones also urged repeal. The Florida Democrat pointed out to his colleagues, “The act admitting [the State of Florida] into the Union provided that the State should relinquish forever its right to tax the public lands there, provided the Government would agree to pay the State 5 percent, of the net proceeds of the sales of those land, to be appropriated for school purposes.”²² When and if the public lands in Florida were sold, the State of Florida would receive a portion of the revenues.

One week after Senator Clayton introduced Senate Bill 2, Frank Morey, a Republican from Louisiana, introduced a similar bill in the House of Representatives, where it met greater opposition than had the Senate measure.²³ Several representatives from northern states opposed repeal of the Southern Homestead Act on the grounds that it would result in the sale of lands that might later be homesteaded. They offered an amendment that would restrict

sale of public lands to those lands “which are unsuited for agricultural purposes...[and] all public lands in said States fitted for the purposes of agriculture shall be subject to disposal under the provisions of the homestead laws of the United States and not otherwise.”²⁴ But Morey, speaking for the Committee on Public Lands, offered the bill without amendments and turned the floor over to Alabama’s Goldsmith W. Hewitt, a Democrat who proceeded to offer a lengthy argument in support of repeal.²⁵

Southern members of Congress, eager to promote development of the South’s timber and mineral resources, joined with northern legislators hoping to reduce regional tensions, and in 1876 repealed the Southern Homestead Act. Following repeal, the unpatented federal land in the South was offered for sale by auction, but again the results were disappointing. By the time the auctions were ended in 1880, only 112,292 acres had been sold at an average price of \$1.70 per acre. The lands were then opened up for homesteading, as before, or for sale at \$1.25 per acre.²⁶

Lumbermen and capitalists from New York to the Lake States and as far away as Canada and California seized the opportunity to speculate in timberland. Timber cruisers, mill owners, and land agents descended on the Gulf South in droves, causing one to comment, “The woods are full of Michigan men bent on the same mission as myself.”²⁷

Nathan Bradley, a lumber mill owner originally from Maine who migrated with the lumber industry to Michigan, where he was elected a member of Congress, voted against repeal of the Southern Homestead Act, fearing that opening the vast southern yellow pine timberlands to lumbering would harm his business. When his efforts to thwart the repeal failed, however, Bradley joined the crowd and purchased 111,188 acres of virgin longleaf in southwestern Louisiana and started a lumber business; he later sold it to other lumbermen and then invested his profits in a new business.²⁸ Charles H. Hackley, also a prominent Michigan

DATA FROM GATES, 1940

Table 1. Large Purchases of Federal Land (5,000 acres or more) in the Five Southern Public Land States from 1880 to 1888

By Northerners

State	Number of Buyers	Residence of Buyers	Acres
Alabama	7	MI-3; NY-2; MA-1; PA-1	121,983
Arkansas	7	IA-2; IL-2; KS-1; MI-1; MO-1	114,334
Florida	6	PA-2; IL-2; MI-1; NY-1; OH-1	64,243
Louisiana	41	MI-19; IL-5; PA-4; OH-3; NY-2; WI-2; CA-1; IA-1; KS-1; MA-1; NJ-1; Canada-1	1,370,332
Mississippi	32	MI-18; PA-3; NY-3; OH-2; CT-1; IN-1; MA-1; MN-1; WI-1; Canada-1	889,359
Total	93		2,560,251

By Southerners

State	Number of Buyers	Residence of Buyers	Acres
Alabama	24	AL-19; FL-4; MD-1	463,242
Arkansas	10	AR-10	183,946
Florida	12	FL-9; GA-1; MD-1; NC-1	125,172
Louisiana	9	LA-6; AR-1; MS-1; TX-1	261,932
Mississippi	11	MS-9; LA-1; TN-1	134,270
Total	66		1,168,562

Historian Paul W. Gates reviewed purchases of 5,000 acres or more of federal land in the southern states between 1880 and 1888. He determined that 68 percent of the land was acquired by residents of northern states.

lumberman, bought 89,743 acres of Louisiana timberland scattered from Calcasieu Parish in the southwest to Morehouse Parish in the northeast to Washington Parish in the southeast. He too later sold to other lumbermen and, back in Michigan, used the profits to become “Muskegon’s philanthropist and entrepreneur,” bestowing a series of gifts to the city valued at \$12 million in 1905.²⁹ There were scores of similar examples.

Historian Paul W. Gates reviewed purchases of 5,000 acres or more of federal land in the southern states between 1880 and 1888.³⁰ Of the 3.73 million acres of land for which he could determine the residence of the buyer, 68 percent was acquired by residents of northern states (see Table 1). Moreover, some of the remaining 32 percent was acquired by southerners using capital supplied by northerners or by northerners who had established operations in the South. In Louisiana, where 44 percent of all large sales occurred, buyers from the North outnumbered buyers from the South by nearly five to one.

In 1888, after 12 years of unrestricted sales, a coalition of conservationists, agrarian land reformers, and southerners concerned about the increasing acquisition of land by northerners persuaded Congress to suspend all entry to public lands in the South except under provisions such as those of the Southern Homestead Act of 1866. Gates concluded: “The South had succeeded in wiping out the shameful act of 1866 from the statute books but in so doing it had opened the door for northern capitalists to skim off the cream of the best remaining timberlands.”³¹

However, that is exactly what Congress had invited them to do. In one of his final arguments for this bill, Senator Clayton stated,

It is easy for Senators to talk about speculators coming in. I know that is a great bugbear. But let speculators come in if they see proper to do so...when they come in they will pay into the Treasury of the United States the price of the land and subject themselves to high taxation from the State every year, and then, if they hold the lands from market, they will only be doing what the Government of the United States is doing today.³²

LAND AGENT EXTRAORDINAIRE

The most prominent figure in “skimming the cream” of public lands in the South was James D. Lacey, who owned timberland, held interests in several lumber mills, and most notably, served as agent or broker for the purchase of millions of acres across the South. Lacey was born in Wayne County, Pennsylvania, around 1849. His father, a farmer and owner-operator of a small sawmill, introduced young Lacey to the lumber business. In 1866, Lacey moved to Grand Rapids, Michigan, and went to work as a drug store clerk, eventually owning his own drug store. In 1873, he established a business of formulating embalming compounds and began making frequent trips to the South, where there was a steady demand for his wares. During these visits he became

aware of the quality and extent of the South’s timberlands. After a highly profitable personal purchase and resale of timberland in Missouri, Lacey decided to focus on the evaluation and brokerage of southern timberlands. In 1881 he formed a partnership with William B. Robinson, also of Grand Rapids. A contemporary industry journal described his business:



Michigan lumberman James D. Lacey was one of many Northerners who profited from Southern forests.

Mr. Lacey was one of the first lumbermen in Louisiana and Mississippi to realize the profits to be made in estimating, grouping and entering lands and reselling them in block to investors and operators. A conservative estimate of the transactions of this sort carried through by James D. Lacey and associates, since they began in 1880, places the total at an amount exceeding 5,000,000 acres; also during that time they have estimated fully double that amount of timber lands in the various southern states.³³

The firm of Robinson and Lacey was the agent for many if not most of the acquisitions in Table 1.³⁴ Robinson retired in 1892, and in 1898, the Robinson and Lacey firm was succeeded by James D. Lacey & Co., which continued to operate well into the twentieth century.³⁵

The Lacey story demonstrates that a major opportunity for increasing the wealth of the Gulf Coast was lost when so little of its timberland was acquired by native residents. Buying large blocks of timberland was beyond the means of most southerners. For those few with the means, purchasing land with what was considered nearly worthless timber was a high-risk venture. The minimum selling price of federal land in the 1880s of \$1.25 per acre would be the equivalent of about \$33 per acre in 2015 dollars.³⁶ Thus, a purchase of 5,000 acres would require the investment of the modern equivalent of \$16,500 from which no return could be expected for perhaps a decade or more, and taxes, as well as other expenses, perhaps would be incurred during the interim. Few southerners, especially in Louisiana, knew and understood what northern lumbermen and others with intimate knowledge of the industry had learned from experience: the wealth derived from the lumber business came not from the manufacture and sale of lumber but from appreciation in stumpage values.³⁷ These northerners had observed the steady increase in stumpage values as the lumber industry migrated from New England to the Lake States in the 1870s, and they were betting on a recurrence. James D. Lacey summarized the situation:

Government timberlands were to be had in Michigan as late as the year 1866 at \$1.25 to \$2.50 per acre [something less than \$0.10 per thousand feet board measure for white pine]... White pine stumpage in Michigan passed the dollar mark in the early seventies and advanced to \$5 a thousand and upwards in the year 1880... Anywhere in the Southern Coast States [that same year] pine stumpage could be had from the United States Government at \$1.25 per acre (about 10 cents per thousand) and from the State governments at from 25 cents to 75 cents per acre.³⁸

The diminishing supply of timber in the Lake States together with the increasing demand for lumber in the rapidly growing Midwest convinced many northern capitalists that investing in southern longleaf pine forest was a risk well worth taking. They anticipated that the boom in stumpage values that had occurred in the Lake States would be repeated in the longleaf pine forest of the Gulf states. And they were right. In a 1913 report on the lumber industry, the U.S. Bureau of Corporations concluded,

Taking the rise of stumpage values as a rate percent per annum, it is likely to be greatest when a new region or a new species is just beginning to attract attention. When timber is selling by the acre at rates equivalent to 10 cents a thousand, it may rise almost at once to 50 cents a thousand. The increase of each thousand feet in such a case is unimportant; yet it is an advance of 400 percent.³⁹

By the time of this report's release, its conclusions were common knowledge across the Gulf Coast: the average stumpage price for yellow pine had increased more than tenfold between 1880 and 1904 (see Table 2). And the increase in stumpage price prompted an increase in the efficiency of utilization. James Lacey summarized the situation in testimony at a congressional hearing in 1909:

[In the 1880s] in Louisiana and Mississippi...we located several million acres for northern lumber companies.... We estimated those lands would cut about 6,000 feet per acre, as they were cutting timber. They were not going above the first limbs; the balance was left in the woods or burned up... Today in Louisiana and Mississippi they are cutting 12,000 to 15,000 feet to the acre... with the prices that prevailed they were able to take out most of the tree.⁴⁰

Thus, land that sold for \$1.25 per acre in 1884 was worth between \$25 and \$30 per acre for the timber alone by 1904, an annual appreciation rate of more than 15 percent.

One of the few speculators in Louisiana's longleaf forest who applied his fortune to benefit the region was William M. Rice, a business executive in Houston. In 1882, Rice purchased 47,960 acres in Calcasieu Parish, Louisiana, from the government for \$1.25 per acre.⁴¹ Upon his death, Rice left his timber interests and other assets to the endowment of what is now Rice University in Houston. The trustees of the William Rice Institute, as it was then known, sold the cutting rights to this timber in 1911 for

approximately \$5 million, an increase of more than 8,000 percent over the purchase price 29 years earlier.⁴²

Although most of the profits from increased stumpage values went to out-of-state speculators, southern citizens and state and local governments received some of the benefits. As stumpage prices increased, so did land values and assessments for state and local taxes. For example, the assessed value of real property for Calcasieu Parish increased from about \$500,000 in 1880 to more than \$22 million by 1897.⁴³ Tax assessors were well aware that the timber was being harvested much faster than it could be replaced and were aggressive in their efforts to extract revenue while the timber supply lasted. The higher taxes pressured sawmill owners to accelerate the rate of harvesting, resulting in too much lumber on the market and depressed lumber prices, which in turn discouraged reforestation.

The lumber industry invested millions of dollars in manufacturing facilities and infrastructure to move logs to mills and lumber to markets. In 1860, Louisiana had about 300 miles of mainline railroad track, though much of this was destroyed during the Civil War. But by 1910 it had 5,554 miles of mainline track.⁴⁴ Logging trunk lines often became permanent, and every parish except Cameron had one or more rail lines passing through it.⁴⁵

The immigration and increased employment that southern congressmen had anticipated when the Southern Homestead Act was repealed did in fact come to pass, at least for a few years. Between 1880 and 1910, the population of Louisiana increased about 80 percent, and wage earners in the lumber-related industries increased forty-fold.⁴⁶ However, the best-paying jobs seldom went to local workers because the out-of-state mill owners usually brought their skilled craftsmen and supervisory personnel with them to build and operate their new facilities.⁴⁷

FROM BOOM TO BUST

For Louisiana and its neighboring states, the lumber boom declined as rapidly as it had expanded. Even as yellow pine lumber production was peaking, per capita consumption of lumber was declining, from 5.2 board feet per person in 1905 to 2.2 board feet in 1930.⁴⁸ Supply often outpaced demand, shrinking profit margins for sawmills and forcing them to maintain high output to pay taxes and service their debt.⁴⁹ By the mid-1920s, the best, most accessible stands of virgin longleaf were near exhaustion, and mills began to shut down—some permanently, and some moved. In a domino effect, homes, stores, schools, hospital, and hotels—all built to support the mill workers and their families—emptied, too.⁵⁰ One example is the Gulf Lumber Company and the town of Fullerton, Louisiana.

Early in the twentieth century, S. H. Fullerton, president of the Chicago Lumber and Coal Company, paid \$50 per acre for a tract of timberland in Vernon Parish, Louisiana, and built a very large sawmill and the town of Fullerton. Operating under the name The Gulf Lumber Company, the mill went into production in 1906, producing 120 million board feet of yellow pine lumber per year.⁵¹ In 1920, the town of Fullerton was incorporated with a population of 2,412. Seven short years later, the company had exhausted its timber supply and the mill shut down. In 1930, the population was 148 people and still falling.⁵² This scenario was repeated in dozens of sawmill towns across Louisiana.⁵³

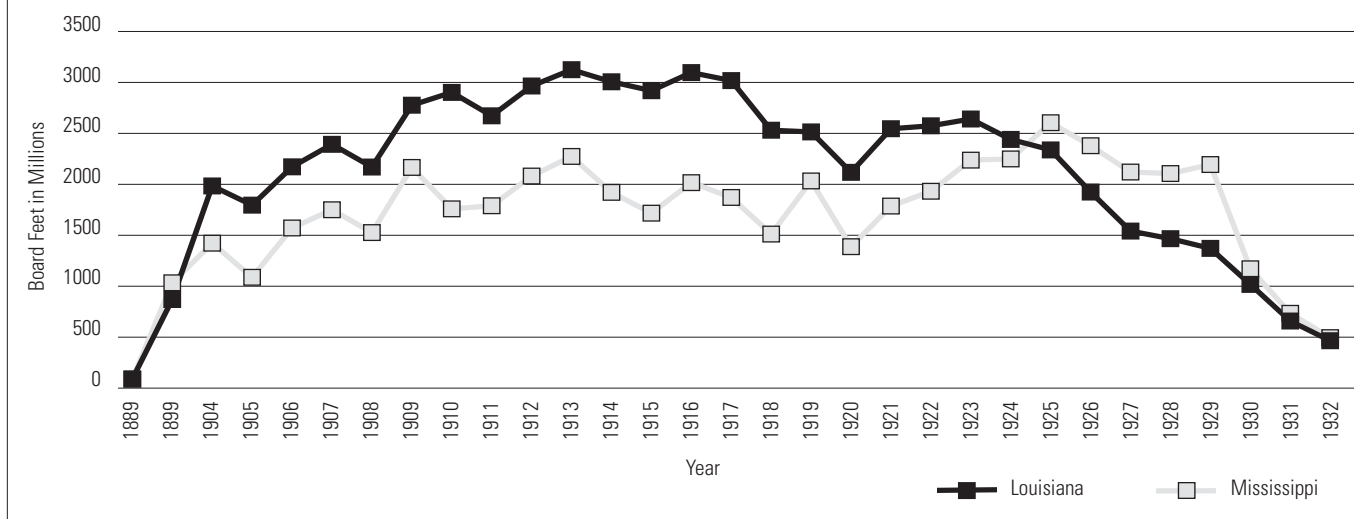
The attitude of many lumbermen in the earlier twentieth century was summed up in the oft-quoted remark of Texas lumberman Harry T. Kendall in 1919: "When the lumberman of today

Table 2. Stumpage prices for southern yellow pine (dollars per 1000 board feet) showing the rapid increases that followed development of the industry

State/Year	1890	1899	1904	1919
Alabama	\$0.78	\$1.20	\$1.55	\$4.18
Arkansas	0.68	1.09	1.79	5.55
Florida	0.93	1.22	1.83	5.01
Louisiana	0.55	1.22	2.26	5.95
Mississippi	0.96	1.30	2.00	5.41

In 1913, the Bureau of Corporations' conclusions were common knowledge across the Gulf Coast: the average stumpage price for yellow pine had increased more than tenfold between 1880 and 1904.

DATA FROM BOYD, 1931

Figure 2. Yellow pine lumber production in Louisiana and Mississippi during the early 20th century lumber boom

saws the trees he owns and scraps his plant, his capital will enable him to become the banker, the ranchman, or the manufacturer of some other commodity.”⁵⁴ In fact, however, most of the lumbermen who made fortunes from the vast longleaf forests of Louisiana and its neighbors along the Gulf Coast became bankers, ranchers, or manufacturers somewhere other than in the South.

Lumbermen and speculators were not the only nonsoutherners to benefit from the South’s lumber boom during the first quarter of the twentieth century. A generation of homesteaders and other settlers in the Midwest did as well. In *The Timber Pines of the Southern United States*, published in 1897, the botanist Charles Mohr wrote, “The importance of the pine forests in the western Gulf region cannot be overestimated, considering the development of the immense timberless area beyond their western limit.”⁵⁵ One hundred and twenty years later, historian David Nesheim confirmed Mohr’s contention:

*The yellow pine forests opened by repeal of the Southern Homestead Act amounted to a giant subsidy for western settlement. The profits may have unevenly accrued to a precious few, but the increased supply, especially following the decline of the Great Lakes industry, helped to keep prices down for the average citizen.*⁵⁶

Although it may be true that northern lumbermen transformed southern forestlands into stumpscapes, it was the pine from those lands that made the transformation of America possible.

Nesheim’s conclusions highlight a basic dilemma in public policy that has existed since the early twentieth century. The rapid harvesting of the South’s pine forests with almost total disregard for restoration led to widespread condemnation of the lumber industry and calls for federal regulation to avoid a timber famine.⁵⁷ However, the glut of lumber that resulted from the timber boom kept lumber prices low, stimulating the housing industry, and benefiting the national economy.

The U.S. Forest Service’s employee manual from 1905, known as *The Use Book*, stated, “Forest reserves are for the purpose of preserving a perpetual supply of timber for home industries... the welfare of every community is dependent upon a cheap and plentiful supply of timber.”⁵⁸ Although a “cheap and plentiful” supply

of timber is beneficial for housing construction and economic growth, it can be a deterrent to the practice of sustainable forestry by private landowners. In 1909, Carl Schenck, the chief forester for George Vanderbilt’s sprawling Biltmore Estate, stated, “Obviously, no owner of forests can be expected to use the forests wisely when and as long as ‘woodgoods’ are cheap. We do not expect the farmer to raise cotton when the price of cotton is low, nor can we expect the forester to raise timber, pulpwood ... so long as [forest products] continue to be of little value.”⁵⁹ When reflecting on his time working for Vanderbilt a half-century later, Schenck wrote,

*“We should not blame the man who transforms the primeval forest into barren wastes; you and I in his place, would certainly act as he does. Forestry resulting in second growth must come by slow evolution and from the willing efforts of those within the logging camp; it cannot come by quick revolution and by pressure of public opinion from without.”*⁶⁰

Sustainable forestry eventually came to the South’s forests, but as Schenck predicted, it came slowly: more than half a century—with all the challenges and opportunities brought about by the Great Depression and the Second World War—would transpire before the region would again see the enormous economic, environmental, and cultural benefits of this magnificent natural resource.⁶¹ □

Mason C. Carter and James P. Barnett are co-authors of The Dawn of Sustainable Forestry in the South (USDA Forest Service, 2017). Carter is coauthor of Forestry in the U.S. South: A History (LSU Press and the Forest History Society, 2015) with R. Scott Wallinger and Robert C. Kellison.

NOTES

1. W. J. Cooper and T. E. Terrill, *The American South: A History* (New York: Alfred A. Knopf, 1991), 482.
2. Henry B. Steer, *Timber Production in the United States, 1799–1946*, USDA Miscellaneous Publication 669 (Washington, DC: Island Press, 2005).
3. Donna Fricker, “Historic Context: The Louisiana Lumber Boom, c. 1880–1925,” http://www.crt.state.la.us/Assets/OCD/hp/nationalregister/historic_contexts/The_Louisiana_Lumber_Boom_c1880-1925.pdf.

4. Anonymous, "The Personal History and Business Achievements of One Hundred Eminent Lumbermen," *American Lumberman*, 1905.
5. Charles S. Sargent, *Report on the Forest Resources of North America (Exclusive of Mexico)* (Washington, DC: GPO, 1884), 490.
6. See Thomas Gamble, *Naval Stores: History, Production, Distribution, and Consumption* (Savannah, GA: Review Publishing and Printing, 1921) for a discussion of the history and methodology of early naval stores operations.
7. Sargent, *Report*, 537.
8. R. D. Forbes, "The Why and How of Forestry in Louisiana," Bulletin 7 (Baton Rouge: Louisiana Department of Conservation, 1921).
9. J. Boyd, "Fifty Years in the Southern Pine Industry," *Southern Lumberman* (December 15, 1931): 61.
10. Paul Wallace Gates, "Federal Land Policy in the South, 1866–1888," *Journal of Southern History* 6 (1940): 303. For a discussion of the origin and disposition of federal lands in the five public land states in the South (Alabama, Arkansas, Florida, Louisiana, and Mississippi, and), see B. H. Hibbard, *A History of the Public Land Policies* (Madison: University of Wisconsin Press, 1965); and Paul W. Gates, "Federal Land Policies in the Southern Public Land States," *Agricultural History* 53 (1979): 206–27.
11. The limit was 40 acres if the land was within six miles of a railroad or navigable stream, 80 acres outside the six-mile limit. The maximums were increased to 80 and 160 acres in 1868.
12. Claude F. Oubre, "Forty Acres and a Mule: Louisiana and the Southern Homestead Act," *Louisiana History* 17 (1976): 143–57, describes some of the barriers faced by potential homesteaders in Louisiana.
13. P. S. Genovese, "Graduation Act (1854)," in *The Louisiana Purchase—A Historical and Geographical Encyclopedia*, ed. J. P. Rodriguez (Santa Barbara, CA: ABC-CLIO, 2002), 128–29.
14. Oubre, "Forty Acres and a Mule"; Gates, "Southern Public Land States," 223–24. The problems encountered with the disposal of cutover land provide further evidence that much of the longleaf pine lands would not support commercial agriculture.
15. Department of Commerce and Labor, Bureau of Corporations, "Standing Timber," in *The Lumber Industry, Part 1* (Washington, DC: U.S. Government Printing Office, 1913), 257.
16. Lumbermen were not alone. Coal and iron companies obtained vast acres of land by the same ruse. See Gates, "Southern Public Land States."
17. Neil Canaday, Charles Reback, and Kristin Stowe, "The Southern Homestead Act: Race, Literacy, and Learning," <https://history.appstate.edu/sites/history.appstate.edu/files/Neil%20Canaday.pdf> (2016).
18. As quoted in Gates, "Southern Public Land States," 216.
19. *Ibid.*
20. *Congressional Record*, 44th Congress, 1st Session, 185.
21. *Ibid.*, 815.
22. *Ibid.*, 816.
23. *Ibid.*, 226.
24. *Ibid.*, 3288.
25. *Ibid.*, 3288–92.
26. Gates, "Southern Public Land States," 219.
27. As quoted in Gates, "Southern Public Land States," 219.
28. Gates, "Federal Land Policy in the South," 312.
29. Gates, "Federal Land Policy in the South," 319; Center for Michigan History Studies, "Biography: Charles Hackley," <http://www.michigan-history.org/lumbering/bios/BioCHtext.html>.
30. Gates, "Southern Public Land States," 220.
31. Gates, "Federal Land Policy in the South," 330.
32. *Congressional Record*, 44th Congress, 1st Session, 818.
33. Anonymous, "The Personal History," 237. The article does not provide his birthdate.
34. Gates, "Federal Land Policy in the South," 316; Anonymous, "Personal History," 135–36.
35. Anonymous, "The Personal History," 236.
36. The price was \$2.50 per acre for land within six miles of a railroad and called "double minimum" land, meaning it sold for double the minimum price.
37. Stumpage value is the price paid for trees "on the stump," prior to logging. Gates, "Federal Land Policy in the South," 314, n. 41.
38. Department of Commerce and Labor, *Lumber Industry, Part 1*, 184.
39. *Ibid.*, 214.
40. James Lacey's testimony is in Tariff Hearings before the Committee on Ways and Means of the House of Representatives, Sixtieth Congress, 1908–1909 (Washington, DC: U.S. Government Printing Office), 3021.
41. The land in what is now Beauregard, Allen, and Jefferson Davis parishes was carved out of Calcasieu Parish by the Louisiana legislature in 1913.
42. Department of Commerce and Labor, Bureau of Corporations, *The Lumber Industry, Part II: Concentration of Timber Ownership in Important Selected Regions* (Washington, DC: U.S. Government Printing Office, 1913), 142.
43. Lacey testimony, 3027.
44. Fricker, "Louisiana Lumber Boom," 8.
45. John H. Foster, "Forest Conditions in Louisiana," Forest Service Bulletin 114 (Washington, DC: Government Printing Office, 1912), 6.
46. Boyd, "Fifty Years in the Southern Pine Industry," 62.
47. G. A. Stokes, "Lumbering in Southwest Louisiana: A Study of the Industry as a Culture-Geographic Factor" (PhD diss., Louisiana State University, 1954), 41.
48. Ernest M. Gould Jr., "Changing Economics of the Forest Products Industries," in *First National Colloquium on the History of the Forest Products Industries: Proceedings*, ed. Elwood Maunder and Margaret Davidson (New Haven, CT: Forest History Society, 1967), 51.
49. During the peak production years in Louisiana, 1912 to 1916, the cost of lumber production equaled or exceeded the selling price. See Earle Clapp, *Timber Depletion, Lumber Prices, Lumber Exports, and Concentration of Timber Ownership* (Washington, DC: U.S. Forest Service, 1920), 50–52.
50. Stokes, "Lumbering in Southwest Louisiana," 46–48.
51. Boyd, "Fifty Years in the Southern Pine Industry," 28.
52. *Ibid.*, 144.
53. See H. King, "The Economic History of the Long-Bell Lumber Company," M.S. thesis, Louisiana State University, 1936; Stokes, "Lumbering in Southwest Louisiana"; and John M. Caldwell, "The Forest of the Vintage: A Geography of Industrial Lumbering in North Central Louisiana, 1890–1920" (master's thesis, University of Oklahoma, 1975).
54. S. T. Dana, *Forest and Range Policy* (New York: McGraw-Hill, 1956), 210.
55. C. T. Mohr and F. Roth, *Timber Pines of the Southern United States*, Bulletin No. 13 (Washington, DC: U.S. Division of Forestry, 1897), 44.
56. David Nesheim, "Providing Lumber for the 'Sawed' House: The Repeal of the Southern Homestead Act and Euro-American Settlement of the Plains," University of Nebraska–Lincoln, <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1012&context=historydiss> (2007), 13–14.
57. See Gifford Pinchot, "Where We Stand," *Journal of Forestry* 38(5): 441–47; Clapp, *Timber Depletion*.
58. *The Use of the National Forest Reserves: Rules and Regulations* (Washington, DC: U.S. Forest Service, 1905), 7, http://www.foresthistory.org/ASPNET/Publications/1905_Use_Book/use_intro.aspx.
59. Carl A. Schenck, quoted in "Forest Conservation and Its Relation to Cheap Lumber and the Tariff," *American Lumberman* (January 2, 1909): 32.
60. Carl A. Schenck, *Cradle of Forestry in America: The Biltmore Forest School, 1898–1912* (Durham, NC: Forest History Society, 1955, 2011), 204.
61. For a detailed account of the programs and events that brought about the recovery of the Southern forest, see Mason C. Carter, Robert C. Kellison, and R. Scott Wallinger, *Forestry in the U.S. South: A History* (Baton Rouge: Louisiana State University Press, 2015).

In the eastern half of North America, the eastern and Carolina hemlocks are under attack from the hemlock woolly adelgid, which is transforming their forest ecosystems. These species may yet survive, in part because of special ecological conditions and also multi-agency cooperation.

THE PLIGHT OF THE HEMLOCK

IN EASTERN FORESTS

The forests on North America's East Coast from Canada to Alabama are threatened by an exotic and invasive forest pest that is both tiny and formidable—the hemlock woolly adelgid (HWA). As a foundation species, hemlocks fundamentally shape the ecosystems and ecosystem processes in the areas

where they occur. Their loss would have major ramifications for the structure and composition of eastern forests. Nevertheless, the history of hemlocks in eastern North America is a story of decline and resilience, and unique opportunities for conservation lie before us, now and in the future.

A MINIATURE BUG WITH OUTSIZED EFFECTS

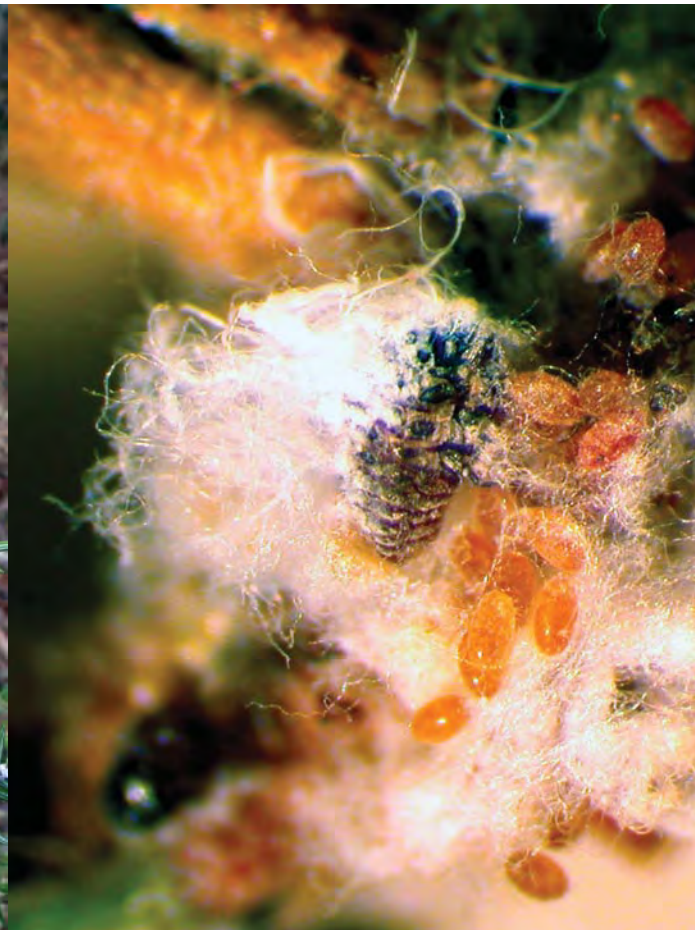
At just 0.8mm in length and often nearly invisible to the naked eye, the hemlock woolly adelgid is primarily to blame for the severe decline of eastern North America's two native species of hemlock: the eastern hemlock, *Tsuga canadensis* (L.) Carr., and the Carolina hemlock, *Tsuga caroliniana* Engelm. Two other factors further stress trees already weakened by HWA: other pests and pathogens, and a changing climate with increased incidences of drought and rising temperatures.¹

The tiny, aphid-related HWA (*Adelges tsugae* Annand [Hemiptera:

Adelgidae]) is a sucking insect native to Japan and was first identified in eastern North America near Richmond, Virginia, on nursery-grown southern Japanese hemlock (*Tsuga sieboldii*) in 1951.² The adelgid is also found in the western United States and, although all hemlock woolly adelgid in the United States is the same species, the western adelgid is considered to be a different lineage, possibly originating in China. In Asia, HWA depends on Tigertail spruce (*Picea torano*) to complete its lifecycle and reproduce sexually.

The lack of Tigertail spruce in North America also helps explain why in the eastern U.S., HWA reproduces asexually.³ Every individual is essentially genetically identical, female, and capable of reproducing twice each year, and with abundant hemlock hosts in eastern forests, HWA has reproduced rapidly.⁴ Incapable of moving on their own (in North America, HWA is sessile for most of its life), these insects disperse via wind, birds, mammals (including people), and vehicles. HWA was first detected in Shenandoah

BY SARA DEFOSSET



White woolly egg sacks at the base of each hemlock needle are classic signs of hemlock woolly adelgid infestation. While these egg sacks are the most visible part of the insect's life cycle, they are not present year round. At times, the adelgid is nearly invisible to the naked eye. The eggs (pictured on the right with an adult) are 0.25mm long by 0.15mm wide; adults are just 0.8mm long.

National Park in Virginia in the 1980s; by the early 2000s, its reach was significant and devastation was widespread.

In 2002, the pest was discovered in the Great Smoky Mountains National Park in the southern Appalachians, home to 200,000 acres of old-growth forest, 35,000 of which have a significant hemlock component. By 2006 hemlock mortality was evident in the park, especially where there were dense populations of large, old growth trees. Drought arrived in 2007–2008, accelerating hemlock decline. The world's largest known eastern hemlock, the "Caldwell Giant," was dead from HWA before the tree was even discovered.⁵ HWA has progressed more rapidly and been more destructive in the southern Appalachians than originally expected, likely because of a combination of factors—drought, hemlock abundance, exceptionally large trees, and mild temperatures. In other parts of the eastern hemlock range, cold winters and hot summers have slowed its advancement.⁶

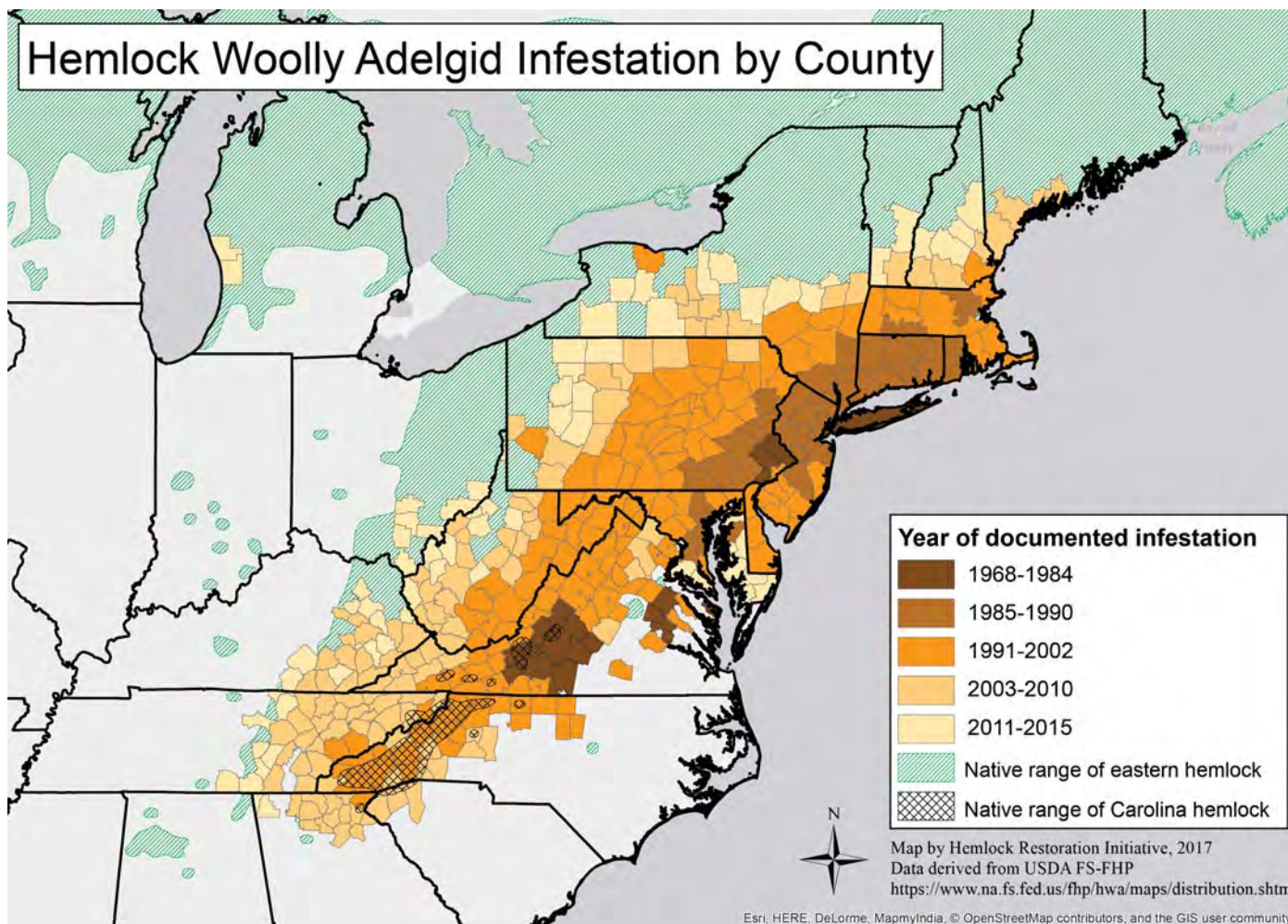
The hemlock woolly adelgid kills trees slowly, affixing itself to the base of a hemlock needle and feeding on the tree's starch reserves. HWA feeding interferes with the tree's ability to take up water and nutrients, producing a drought-like response that some researchers have likened to an allergic reaction. As a result, the hemlock's needles take on a gray and dusty appearance and begin to drop. Increasingly unable to photosynthesize as it loses its needles, the tree slowly dies from the bottom up. Trees can succumb to the pest in as little as four years, but in some cases this takes much longer.⁷ Large trees, which require the movement

of more water and nutrients to their crowns, appear to be the most vulnerable.

Adelgid populations native to Asia and the Pacific Northwest do not have the same devastating effects. Even eastern hemlocks relocated to these areas do not succumb to adelgid pressure as they do on the East Coast, perhaps because western and Asian hemlocks coevolved with HWA and native predator insects. Western trees may remain healthy even when infested with HWA because a delicate predator-prey relationship between HWA and other native insects has been established over thousands of years of evolutionary history. It is also possible that western and Asian hemlock species have some form of innate resistance that allows them to tolerate the pest and remain healthy even when infested.⁸ On the East Coast, however, HWA has no specialized, native predators, and neither eastern nor Carolina hemlock has any natural resistance to HWA. Specialized HWA predators and possible genetic resistance—present in the native range of other hemlock species—are hopeful signs for researchers and natural resource managers working to slow and stop HWA in the East.

HEMLOCKS IN THE ECOSYSTEM

At least ten distinct species of hemlock exist in the world today. A new species, *Tsuga ullengensis*, which occurs on Ulleungdo Island in Korea, was delineated in 2017 by Holman et al.⁹ All occur at roughly the same latitude.¹⁰ Most are found in Asia; North America is home to four species and the southern Appalachians are home



HWA first arrived in the eastern United States sometime before 1951. It has since spread throughout nearly the entire range of eastern hemlock.

to two, the eastern (Canadian) hemlock and the Carolina hemlock. The latter has an extremely limited range: endemic to the southern Appalachians, it occurs primarily in western North Carolina, with a few small pockets in neighboring states. The eastern hemlock, on the other hand, dominates the eastern forest landscape, occurring up and down the East Coast from Canada to Alabama, and spreading as far west as Minnesota.

In southern Appalachian forests, Carolina and eastern hemlock occupy distinct ecological niches. The Carolina hemlock is a relatively small tree reaching heights of 40 to 60 feet.¹¹ It is found on drier ridge tops, bluffs, and rocky outcroppings. Its primary importance lies not in its dominance but in the contribution it makes, as a rare species, to global biodiversity. It appears to be more closely genetically related to its Asian cousins than to its eastern North American counterpart.¹²

The eastern hemlock is a forest giant. Called the “redwood of the East,” it can live for more than 500 years and reach heights of more than 170 feet.¹³ It is typically found in riparian areas growing along headwater streams, in moist, shady groves, and on north-facing slopes.¹⁴ Many of the special services it delivers follow from its “shady” character. Eastern hemlock possesses the ability to persist for decades and even centuries in the near complete shade of the forest understory (where other trees would languish) in anticipation of a disturbance that will provide light and space for it to shoot up and join the forest canopy.¹⁵ Like the redwood, it remakes the forest in its own image, creating around itself a particular ecosystem that

differs significantly from hardwood forests and in which it and many other plant and animal species thrive. It is also among the most genetically distinct of all the hemlock species; perhaps that contributes to its pronounced vulnerability to HWA pressure.¹⁶

The foliage of the eastern hemlock is dense, dark green, nitrogen rich, and—by benefit of being evergreen—available year-round. It reaches from the forest floor to the canopy, creating a ladder used by wildlife for habitat and mobility. Hemlock foliage is an important source of food and shelter in eastern forests, particularly in winter, when hardwood trees are dormant. The forest floor in hemlock groves tends to be more open than in other parts of the forest, and the temperature difference that hemlocks create is apparent. One need only step into a grove in summer to notice its distinctive coolness. The shady, cove-like environment created by hemlock stands is important for forest diversity in a general sense and specifically, in terms of plant and animal biodiversity in both aquatic and terrestrial environments. Hemlock groves break up the otherwise homogeneous character of hardwood forests, offering a microclimate and providing a moist, green island favored by many species.¹⁷

Shady hemlock groves provide ideal habitat for delicate native plant communities. Some species are found almost nowhere else. Pirate bush (*Buckleya distichophylla*), for example, is endemic to a small region of the southern Appalachians; it is a federal species of concern and appears on North Carolina’s threatened species list. Hemlocks are considered a primary host for this hemiparasitic

species. Also strongly associated with hemlock forests are numerous bird and animal species, including white-tailed deer, for which young hemlock foliage is a preferred browse, and as many as 90 bird species. Some warblers nest exclusively in hemlocks.¹⁸

The same shading, sheltering, and temperature-regulating services that the hemlocks deliver on land, they also deliver to the aquatic environments of headwater streams and waterways. In southern Appalachian watersheds, eastern hemlocks make up about 10 percent of total basal area but tend to be concentrated along riparian corridors. At one study site researchers found that hemlock occupied only 6 percent of basal area overall but 26 percent of basal area in the riparian corridor.¹⁹ Hemlock roots hold stream banks in place, and their branches shade the water, keeping water temperatures stable, cooler, and more oxygenated—a necessary condition for cold-water species like brook trout. Their dense foliage intercepts precipitation, preventing nutrient runoff and sedimentation. Researchers have found that streams in watersheds affected by HWA show higher concentrations of micronutrients like chlorine and copper that can harm aquatic life.²⁰ Indeed, hemlock-dominated watersheds contain more aquatic biodiversity than streams that drain hardwood forests. In a 2003 study, brook trout and brown trout were nearly three times more likely to occur in streams draining hemlock forests than hardwood forests.²¹

Because their needles transpire more slowly and at a more constant rate than the leaves of their hardwood neighbors, hemlocks make more water available to watersheds during the growing season. If hemlocks are replaced by thirstier hardwoods, less water will be available during the warm months, when it is needed most. During winter, when hardwood trees are dormant, hemlocks

along waterways are still taking up excess water during peak flow events, making flooding less severe. Thus, hemlocks both provide water to watersheds and, conversely, remove excess water, and their decline compromises the provisioning and regulating ecosystem services they deliver.²²

The loss of hemlocks also takes a toll on less tangible ecosystem services like aesthetic beauty, cultural value, and outdoor recreation. Standing dead trees in forests can pose hazards to visitors, and their fuel dramatically increases wildfire danger. Trees that die along streams end up in the water, where the large woody debris makes waterways less navigable; with the decay of their root systems, erosion and sedimentation follow. And, of course, standing in a grove of dead trees does not have the same emotional and spiritual resonance that a thriving, healthy forest provides. Like the redwood, the eastern hemlock holds a special place in the public imagination. Its rare ability to instill in its beholders a feeling of wilderness and sense of place has not been lost on generations of poets, artists, scientists, and naturalists who have often expressed their affection for this tree.²³ When taken as a whole, no other forest tree in eastern North America is equipped to deliver the diversity of services provided by the eastern hemlock.

HEMLOCKS IN HISTORY

Many of us see the decline of eastern hemlock in Appalachian forests as a devastating phenomenon; however, if we examine the ecological history, we find a precedent for the loss of foundation species—and the loss of hemlock from eastern North American forests in particular.²⁴ After all, humans and forests live at very different time scales. What we experience in our human

HEMLOCK RESTORATION INITIATIVE



Carolina hemlocks, endemic to the southern Appalachians, are typically found high up on ridge tops and rocky outcroppings. As a rare species, they are important contributors to global biodiversity.

lifetimes as profound change may be only a fleeting moment in the life of a forest that has evolved over thousands of years.²⁵ Although large-scale disturbances to eastern hemlock populations have occurred at least twice before in prehistory, and again in relatively modern history, we nonetheless feel the current loss of eastern hemlock deeply.

One such decline of eastern hemlock in Appalachian forests began during the mid-Holocene epoch, around 6,000 years ago. A more than tenfold decrease in eastern hemlock populations lasted approximately 1,000 years. Researchers believe it was likely the result of pathogens, insects, a changing climate, or some combination of these factors, much as we are experiencing today.²⁶ The arrival of European colonists in North America marked the beginning of another decline for the still rebounding, slow-growing eastern hemlock, as land was cleared for agriculture and hemlocks were harvested for the tannins in their bark and for timber. With the exception of a few old-growth pockets, today's eastern North American and Appalachian forests are second-growth, still actively recovering from having been clearcut in or before the late 1800s.²⁷ David R. Foster, director of the Harvard Forest, has remarked that eastern forests are "old by our standards but they have only been growing a couple of centuries. It takes 500 years to come back from a hit to anything like a steady state. We're less than midway towards that point and the hemlock woolly adelgid is going to stop that. It's going to divert the forest into another transition."²⁸

The history of the eastern hemlock illustrates that forests, as constant as they may seem to us, are defined by change. Eastern hemlocks today face pressures that are at once different and the same as those they have overcome in the past. Although hemlock is no longer sought after for its tannin-rich bark and its stands are typically safe from logging by benefit of their inaccessibility and the timber's limited commercial value, the combination of the exotic hemlock woolly adelgid and the changing climate recalls the ancient problems that brought down the hemlock in the past. These pressures are exacerbated by human activity: as our human realm becomes ever busier and more interconnected, we can expect to see more species decline in the years to come, particularly in sensitive areas like the southern Appalachians.

Is there a role for human intervention in preventing this decline, and how prominently will the eastern hemlock figure in our future forests and landscapes? This current period of hemlock decline is clearly the result of human activity. With the movement of goods and services around the globe expected to increase in the coming decades, perhaps eastern hemlock is now poised to take on a new role in human consciousness, one that is less material and more instructive. For Foster, "hemlock provides a compelling record of change" that will undoubtedly inform forest management and conservation efforts as we confront intensifying ecological change and learn to navigate in a world where "species collapse is less and less a surprise."²⁹ Our practical resources, our physical health, and our emotional well-being are so bound up with our forests that managing the hemlock woolly adelgid is as important for conservation of our way of life as it is for the trees themselves. The conspicuous loss of a foundation species presents an opportunity to reimagine conservation planning and develop an effective intervention that will halt its decline, eventually restore hemlocks to long-term health in our forests, and inform responses to the next invasive pest or pathogen that is surely coming.

Unlike the American chestnut, which disappeared from eastern

forests a century ago because of an exotic fungal pathogen, hemlock populations have not been subject to heavy timber harvesting and so retain a genetic diversity that will allow for potential adaptation and healthy population growth in the future. Moreover, whereas chestnut blight can live indefinitely in the forest, biding its time on other hosts,³⁰ HWA is extremely host specific, and therefore more straightforward to manage. And unlike the invasive emerald ash borer, which, by the time it is detected in a tree, the opportunity for action has passed. HWA can take four to ten years—and in many cases, much longer—to kill a hemlock.³¹ These differences create a window of opportunity.

RESPONSES AND SOLUTIONS

For many managers working on issues of forest health, the decline of the hemlock is only one among many pressing forest health concerns that compete for funding, personnel, and research. In one southern Appalachian state, however, a state where few trees not chemically protected remain healthy, a program is now addressing hemlock specifically, synthesizing information, and coordinating efforts for combating HWA. With funds awarded from a settlement with the Tennessee Valley Authority, Steve Troxler, North Carolina's Commissioner of Agriculture, began the Hemlock Restoration Initiative (HRI) in 2014. The U.S. Forest Service's Forest Health Protection program began providing matching funds the following year. WNC Communities, a 501(c)(3) nonprofit organization based in Asheville, North Carolina, with a 70-year history of successful rural development and forestry projects in the region, was chosen to administer the program, giving HRI greater flexibility than is enjoyed by similar programs administered through government agencies.



HEMLOCK RESTORATION INITIATIVE

Technicians from HRI perform systemic treatments using a low-volume soil drench method to protect hemlocks from hemlock woolly adelgid.



The Hemlock Restoration Initiative works with the Landcare Committee for the town of Montreat, North Carolina, to release HWA predator beetles. Insects that are especially adapted to feed on hemlock woolly adelgid are considered a critical aspect of long-term hemlock conservation.

HRI works with partners and other restoration initiatives at all levels—from private citizens and homeowners to scientists, researchers, natural resource managers, and conservation-based nonprofits, in addition to local, state, and federal governments. Its mission is to restore eastern and Carolina hemlocks to their native habitats throughout North Carolina, mitigate damage to hemlocks and their associated ecosystems caused by HWA infestation, and ensure that hemlocks survive to maturity on North Carolina’s public and private lands. The plan for hemlock restoration in North Carolina comprises short-, middle-, and long-term methods for combating HWA and ensuring hemlock survival.

In the short term, the only way to protect an individual tree from HWA is to treat it with a systemic, neo-nicotinoid insecticide, most commonly imidacloprid, and for heavily-infested, stressed trees, dinotefuran (name brand “Safari”). In most cases a simple, inexpensive soil drench application is effective, making at-home treatment possible for most homeowners. However, for very large forested properties on North Carolina’s nonfederal public lands, HRI works with land management professionals, volunteers, and hired crews to chemically treat hemlocks. In 2017, HRI and its partners treated nearly 12,000 trees.

To treat ecologically significant trees on private lands, HRI is working with county governments, local land conservancies, and North Carolina cooperative extension services in a pilot cost-share program which offers financial assistance for private homeowners whose properties meet certain criteria. With some initial successes, this program may be replicated in counties throughout the state and beyond. If a tree is relatively healthy, an initial chemical treatment can ensure its survival for five to seven years, effectively buying time while longer-term strategies come to fruition.

The use of biological controls constitutes the middle-term approach to HWA management. Most of the insects used for biological control are predator beetles collected from the wild in the

Pacific Northwest and Japan or reared in labs. Before release on the East Coast, each goes through a six- to ten- year vetting process by the federal Animal and Plant Health Inspection Service. Each species has advantages and disadvantages, and none are likely to be silver bullets, but, together, they are considered essential components of long-term HWA control.

HRI has established local insectaries where predator beetles can breed and become established and later be collected and distributed. These insectaries will increase the number of HWA predators present in southern Appalachian forests and reduce dependence on resource-intensive procurement methods, like wild collection or lab production. Many thousands of predator beetles have been released in North Carolina and elsewhere, and additional predator species are under evaluation. More research is needed to determine their long-term effectiveness for combating HWA, but the predator insects are reproducing and spreading to new areas. These predators will never exterminate HWA; instead, the intention is to establish predator populations of sufficient size to keep pest populations at a level that trees can tolerate. Because of the length of time required to vet, raise or collect, and establish new predator populations, biological controls are not well suited for immediate intervention to stop hemlock decline. They are a landscape-level approach intended to reduce ongoing dependence on chemicals and keep adelgids in check in eastern forests.

For the long term, HRI’s partner scientists, some of whom are based in the southern Appalachians, are working to conserve the diverse genetic lineage of the eastern and Carolina hemlocks, identify the mechanisms for resistance in Asian and western hemlock species, define the growing conditions that hemlocks like best, and refine the silvicultural techniques that will inform forest restoration in the aftermath of HWA.

A group called Camcore, at North Carolina State University, is establishing seed banks and ex situ conservation plantings and

populations of hemlocks in South America and other places where HWA is not present, so that hemlock genetic diversity can be preserved and available for future restoration efforts. The Forest Restoration Alliance, also with ties to the university, conducts a selection and breeding program for pest resistance in hemlocks, using the model outlined by the American Chestnut Foundation, aimed at one day creating an eastern hemlock that is able to resist or tolerate the adelgid. Camcore has teamed up with U.S. Forest Service researchers, based at the Southern Research Station in Asheville, to study the effects of light exposure and competition release on HWA populations and hemlock health to inform future management approaches and restoration techniques. Numerous other researchers and managers are working similar projects in the Appalachian region and beyond.

The integrated approach being taken by various organizations and individuals is defining how we cope with future ecological changes and how we conceive of forest management and forest health in the years to come. The long-term effects of eastern hemlock decline remain to be seen, but changes are already apparent as dying hemlocks are being replaced by early successional species like red maple, tulip poplar, and rhododendron. If hemlock loss accelerates, these processes will dramatically alter the structure and composition of our forests.

The history of the hemlock is a reminder that this type of change is inevitable, but inevitability does not mean that conservation efforts are a lost cause. On the contrary, the history of the hemlock is one of persistence and resilience. Now human intervention is helping to conserve both the tangible and the intangible services provided by hemlock that have so shaped our landscapes and our lives, spare this majestic species from relegation to arboreta and special collections, and restore it to its place of prominence as the “long-lived champion of the untamed woods.”³² □

Sara deFosset is the Outreach Associate with the Hemlock Restoration Initiative in Asheville, North Carolina. For more information about the organization’s work, contact HRI at www.savehemlocksn.org.

NOTES

- Aaron M. Ellison, Michael S. Bank, Barton D. Clinton, Elizabeth A. Colburn, Katherine Elliott, Chelcy R. Ford, David R. Foster, et al., “Loss of Foundation Species: Consequences for the Structure and Dynamics of Forested Ecosystems,” *Frontiers in Ecology* 3(9) 2005: 485.
- Nathan P. Havill and Michael E. Montgomery, “The Role of Arboreta in Studying the Evolution of Host Resistance to the Hemlock Woolly Adelgid,” *Arnoldia* 65(3) 2008: 4.
- In Japan and the western United States, “the typical adelgid life-cycle involves alternation between spruce (*Picea*) primary hosts where they form galls and where there is a sexual generation, and other conifer secondary hosts where reproduction is strictly asexual.” Nathan Havill, Michael Montgomery, and Melody Keena, “Chapter 1: Hemlock Woolly Adelgid and Its Hemlock Hosts: A Global Perspective,” in *Implementation and Status of Biological Control of the Hemlock Woolly Adelgid*, U.S. Forest Service Publication FHTET-2011-04 (2011), 7.
- Havill et al., “Hemlock Woolly Adelgid and Its Hemlock Hosts,” 7–8.
- Will Blozan, “The Last of the Giants: Documenting and Saving the Largest Eastern Hemlocks,” *American Forests* (Spring 2011), <http://www.americanforests.org/magazine/article/the-last-of-the-giants/>.
- Havill et al., “Hemlock Woolly Adelgid and Its Hemlock Hosts,” 8.
- Evan L. Preisser, Kelly L. F. Oten, and Fred P. Hain, “Hemlock Woolly Adelgid in the Eastern United States: What Have We Learned?” *Southeastern Naturalist* 13, Special Issue 6 (2014): 4.
- Kelly L. F. Oten, Scott A. Merkle, Robert M. Jetton, Ben C. Smith, Mary E. Talley, and Fred P. Hain, “Understanding and Developing Resistance in Hemlocks to the Hemlock Woolly Adelgid,” *Southeastern Naturalist* 13, Special Issue 6 (2014): 148.
- Garth Holman, Peter Del Tredici, Nathan Havill, Nam Sook Lee, Richard Cronn, Kevin Cushman, Sarah Mathews, Linda Raubeson, and Christopher S. Campbell, “A New Species and Introgression in Eastern Asian Hemlocks (Pinaceae: *Tsuga*)” *Systematic Botany*, 42(4):1–15, <http://www.bioone.org/doi/full/10.1600/036364417X696474>.
- Havill and Montgomery, “The Role of Arboreta,” 5.
- Virginia Tech, Department of Forest Resources and Environmental Conservation, “Carolina hemlock Pinaceae, *Tsuga caroliniana*,” <http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=143>.
- Havill and Montgomery, “The Role of Arboreta,” 8.
- Blozan, “The Last of the Giants.”
- U.S. Department of Agriculture, Natural Resource Conservation Service, “Plant Guide: Eastern Hemlock, *Tsuga canadensis* (L.) Carr.,” <https://plants.usda.gov/core/profile?symbol=TSCA>.
- H. A. Fowells, “Silvics of Forest Trees of the United States,” *Agriculture Handbook* 271 (Washington, DC: U.S. Department of Agriculture, Forest Service, 1965), 608–09.
- Havill and Montgomery, “The Role of Arboreta,” 8.
- David R. Foster, *Hemlock: A Forest Giant on the Edge* (New Haven: Yale University Press, 2014), 6.
- Mariko Yamasaki, Richard M. DeGraaf, and John W. Lanier, “Wildlife Habitat Associations in Eastern Hemlock—Birds, Smaller Mammals, and Forest Carnivores,” in *Proceedings: Symposium on Sustainable Management of Hemlock Ecosystems in Eastern North America* GTR-NE-26 (Newtown Square, PA: U.S. Forest Service, Northeastern Research Station, 2000), 135–36.
- Steven T. Brantley, Chelcy Ford Miniati, Katherine J. Elliott, Stephanie H. Laseter, and James M. Vose, “Changes to Southern Appalachian Water Yield and Stormflow after Loss of a Foundation Species,” *Ecology* 1521 (2014): 3.
- Misty Dawn Huddleston, “Riparian Ecosystem Response to Hemlock Woolly Adelgid (*Adelges tsugae*) Induced Eastern Hemlock (*Tsuga canadensis*) Mortality in the Great Smoky Mountains National Park, USA,” (PhD diss., University of Tennessee, 2011), iv, http://trace.tennessee.edu/utk_grad-diss/1194.
- Robert Ross, Randy Bennett, Craig Snyder, John Young, and David Lemarie, “Influence of Eastern Hemlock (*Tsuga canadensis* L.) on Fish Community Structure and Function in Headwater Streams of the Delaware River Basin,” *Ecology of Fresh Water Fish* 1 (2003): 60–65.
- Brantley et al., “Changes to Southern Appalachian Water Yield,” 1.
- Some examples: Henry Wadsworth Longfellow, *Evangeline, A Tale of Acadie* (1847); Robert Frost, “Dust of Snow” (1920); Joan Mitchell’s painting *Hemlock* (1965); and John Grade’s sculpture *Middle Fork* (2015).
- Yan Zaho, Zicheng Yu, and Cheng Zhao, “Hemlock (*Tsuga canadensis*) Declines at 9800 and 5300 cal. yr BP Caused by Holocene Climatic Shifts in Northeastern North America,” *Holocene* 20(6): 877–86.
- Paul A. Delcourt, *Introduction to Quaternary Ecology: A Paleocological Perspective* (London: Chapman and Hall, 1991), 1.
- W. Wyatt Oswald and David Foster, “Middle-Holocene Dynamics of *Tsuga canadensis* (eastern hemlock) in Northern New England, USA,” *Holocene* 22(1): 71–78; and Zaho et al., “Hemlock (*Tsuga canadensis*) Declines,” 1.
- Anthony W. D’Amato, David A. Orwig, and David R. Foster, “Understorey Vegetation in Old-growth and Second-growth *Tsuga canadensis* Forests,” *Forest Ecology and Management* 257(2009): 1043–52.
- Foster, *Hemlock*, xvii.
- Foster, *Hemlock*, 10, xv.
- D. Rigling and S. Prospero, “Cryphonectria parasitica, The Causal Agent of Chestnut Blight: Invasion History, Population Biology and Disease Control,” *Molecular Plant Pathology* (January 31, 2017), <https://www.ncbi.nlm.nih.gov/pubmed/28142223>.
- Karen Chavez, “Emerald Ash Borer Decimating Trees in WNC,” *Asheville Citizen Times*, September 8, 2016, <http://www.citizen-times.com/story/news/local/2016/09/08/emerald-ash-borer-decimating-trees-wnc/89557230/>; and Jordan D. Marché II, “Fool Me Twice, Shame on Me: The Emerald Ash Borer in Southeastern Michigan,” *Forest History Today* (Fall 2012): 5–15.
- Foster, *Hemlock*, 2.



We are **BUILDING** on



FOREST HISTORY
SOCIETY

Since 1984, the Forest History Society's home has been a 1950s-era repurposed office building in Durham, North Carolina. Recognizing a critical need for more space and updated technologies to advance our work, the Society's board of directors identified a new facility as the top strategic goal and began planning to make this goal a reality. In 2014, the board launched the Building on History Campaign to fund the construction of a new home.

The new 16,750-square-foot facility, nestled on an 8.6-acre wooded site purchased from Duke University (pictured above), will create new opportunities to collect and preserve valuable forest history, increase our research space, and expand our digitization and oral history programs. It will also add an important new outreach capacity:

a multi-purpose meeting space for workshops, symposia, forums, distance learning, and collaborative opportunities at local, national, and international levels. Having a headquarters specifically designed to accommodate the Society's collections and work is an exciting new chapter in our 72-year history.

Thanks to the enthusiastic response of ongoing and new supporters, we have raised more than \$5.4 million in philanthropic gifts and pledges through the Building on History Campaign. Considering additional donations of construction materials and anticipated proceeds from the sale of our current building, less than \$400,000 remains to be raised to build our new home.

To help the Society complete this Campaign, the Harley Langdale Jr. Foundation issued a challenge in May 2017, pledging to match one dollar for every two dollars committed by others through December 31, 2018, up to \$250,000 from the Foundation.

If you have not made a gift to the Building on History Campaign, we hope you will join the more than 150 donors who have already demonstrated their commitment to a sustainable future for the Society. If you have already made a gift and can stretch a bit more, we hope you will consider an increase to help us meet the Langdale Challenge. Donors making gifts of \$5,000 or more will be recognized on a donor wall in the new building.

We need your support to put the capstone on this initiative by June 30, 2018!



Construction is scheduled to be completed by early 2019.



HELP PUT THE CAPSTONE ON THE
BUILDING ON HISTORY CAMPAIGN

*Less than \$400,000 is needed to complete our new home!
Please invest in the future of FHS today.*

TO MAKE YOUR GIFT

Contact Laura Hayden, FHS Development Associate
Laura.Hayden@foresthistor.org

919.682.9319

or

Give online:
foresthistor.org/join-support/building-on-history/

News about the systemic and system-wide problem of sexual harassment and misconduct throughout the U.S. Forest Service, as well as other federal land-management agencies, made headlines in March 2018. A deeper reading of history shows that such incidents are not a recent or rare phenomenon.

“NEW FACES, SAME OLD VALUES”

A HISTORY OF DISCRIMINATION IN THE FOREST SERVICE

In March 2018, numerous accounts of sexual harassment and retaliation in the U.S. Forest Service made national news. Some incidents reported dated back two decades, most from the Fire and Aviation Management division. One of the few complaints from outside that division to surface had been made against Tony

Tooke, who was appointed Forest Service chief in September 2017. The accusation of sexual misconduct had been leveled earlier in his career. The reaction from both inside and outside the agency was so strong and swift, and the evidence so damning, however, that he resigned within days of the report coming out.

The pervasiveness of the problem, however, was not new to me. I had written about harassment and discrimination in my book *The Greatest Good and the Forest Service: A Centennial History* in 2005. In the chapter “New Faces, Changing Values” I explored the impact of the Forest Service’s hiring of women and minorities in large numbers on its culture. This turning point in the agency’s history coincided with the large-scale hiring of nonforestry science professionals after passage of the National Forest Management Act in 1976. These new employees challenged prevailing gender and racial attitudes held by older employees at the same time they were coping with new policies and practices implemented

in the wake of the environmental movement. Some responded to these new faces and their different values with resentment and even physical retaliation and intimidation. The allegations revealed in 2018 showed that, on a basic level, not much had changed. If I were writing this chapter today, I might instead call it “New Faces, Same Old Values”—because it seems that the only thing that had changed was the names of those involved, not the discriminatory behavior.

To be clear, there are many notable examples of men supporting women striving to challenge the status quo, as in the cases of Deanne Shulman, the first female smokejumper, and Geraldine “Gerri” Bergen Larson, the first female forest supervisor. Too often, though, it has been like what Gene Bernardi encountered in 1973. When a supervisor refused to even interview a woman for a position she qualified for, she ultimately filed a sexual discrimination lawsuit against the agency. Nearly half a

BY JAMES G. LEWIS



Job opportunities for women were limited largely to office and clerical tasks until passage of the Civil Rights Act of 1964. Several more years would pass before women began working in field positions.

century later, employees still resort to legal action when their formal complaints go unaddressed.¹

The following book excerpt shows that women and minorities have always struggled to be treated as equals in the Forest Service, an agency that until 1978 was traditionally led by white males at all management levels. In 1984, a decade after Bernardi filed her suit, a Forest Service employee noted, “Given the Forest Service’s traditional values, it’s a big step to open up the organization to women and minorities. It’ll take time, but we’re getting there.” Even with all the strides the Forest Service has made since then in appointing women and minorities to leadership positions, including two women as chief, the agency today remains far from “there”—the same conclusion I had drawn in 2005.

THE CAN-DO AGENCY AND THE MYTHICAL RANGER

The foresters and engineers who dominated leadership positions [in the 1950s] came from similar backgrounds. They were white males, usually from middle-class families and rural, conservative backgrounds. They trained in one of twenty-seven forestry programs that all emphasized timber production yet required

little if any understanding of nontimber resources.² Those with military experience were unlikely to question authority and placed the interests of the agency above their own....

In 1960, Herbert Kaufman published a study of administrative behavior in the Forest Service. He sought to learn how field personnel operating under the agency’s decentralized system, which allowed the lowest-ranking officers to make decisions without consulting superior officers, succeeded at consistently high levels. Kaufman found that the Forest Service recruited men with technical knowledge and practical skills who also had the will to conform and carry out what he called “the preformed decisions” of their superiors, which could be found in the ranger’s bible, the Forest Service Manual....³

Rangers also kept diaries and filed reports that would eventually reveal deviation. Because personnel were rotated every two to three years, any inconsistencies might be found and reported by one’s successor. In such an atmosphere, a forester who questioned operations might be labeled a troublemaker and place his career at risk. By handling personnel this way, Kaufman noted, the Forest Service “enjoyed a substantial degree of success in producing field

behavior consistent with headquarters directives and suggestions.”⁴

Within the agency, there may have been disagreement about what to do or how to do it, but once a decision was made, everyone accepted it and worked to implement it.⁵ That a forester’s peers rarely questioned his decision contributed to a sense of always doing what was best for the land. The emphasis on conformity and obedience fostered what one forester called the “myth of the omnipotent forester,” an attitude that came to dominate the agency’s thinking. In the mid-1960s, a seasoned forester told newly hired foresters, “We must have enough guts to stand up and tell the public how their land should be managed. As professional foresters, we know what’s best for the land.”⁶...

THE DESKBOUND YEARS

Women had worked in clerical positions as “typewriters” in the Washington headquarters office since the agency’s Division of Forestry days. Before World War II, the agency hired very few women for professional positions. Eloise Gerry, the first woman appointed to the professional staff of the Forest Products Laboratory, just after its opening in 1910, is a noteworthy figure not only because of her scientific achievements but also as an exception to the men’s-club attitude that prevailed well into the late twentieth century. In the 1910s, the agency began hiring women as draftsmen, bibliographers, and what would later be called information specialists but made it clear that women were not welcome to apply for jobs that took them into the field. That remained the agency’s position until the 1970s.⁷...

Serving as a clerk provided the other major opportunity for women in the Forest Service. Before Chief Pinchot reorganized the Forest Service and established regional offices in 1908, women rarely worked in the forest supervisor’s office. The reorganization created new jobs and the opportunity to move west. Initially, men deemed the work too rough for women, contending it required a “two-fisted ranger” or forest officer to assemble and ship fire tools, round up volunteer firefighters from bars and saloons, and perform other nonclerical tasks. As the men advanced, however, women found themselves tackling the work of the “two-fisted ranger” as well as paperwork. Office work quickly became a “pink collar” job.⁸

A district clerk was the backbone of the organization, providing continuity between district rangers as they rotated through and briefing the new rangers on local issues.... Clerks took care of expected clerical duties such as payroll, issuing permits, and hiring seasonal employees, and worked as much as eleven hours a day five days a week. With the ranger often in the field, the clerk also became the public face of the Forest Service. Clerks “had to be schooled in what the agency was all about” to interact with users of the national forests—ranchers, miners, loggers, or vacationers—concerning rules, regulations, and local conditions. It became agency folklore that the district clerk of the 1950s and 1960s did the job of twelve people today.⁹

The Forest Service did hire thirteen women with forestry degrees before World War II, but they remained deskbound, prevented from doing the ranger’s rough-and-tumble job in the field. In 1934, the Forest Service appointed Alice Goen Jones as an entry-level junior forester in Region 5. Jones had a degree in forestry from the University of California at Berkeley, but the agency’s position on women as forest rangers had been made clear three years before her appointment in *The Forest Rangers’ Catechism in Region Five*: “Women are not appointed by the Forest Service as

members of the field force even if they pass the civil service examination.” Jones remained in research throughout her career and, as late as 1972, she was still encountering sexual discrimination.¹⁰

World War II temporarily allowed women to get out from behind their desks and demonstrate their field skills. In addition to Forest Service positions such as fire lookout and patrol, cooks for fire crews, telephone operators, patrolmen, and truck drivers, women took over traditionally male jobs in private industry—logging, operating mill saws, and scaling lumber. But when the war ended, women were removed from their jobs in favor of men returning home. The end of the war also spelled the end for the old-style ranger who had gotten the job because he lived in the area and knew the land and his neighbors. After World War II, as land management became more professional and complicated, a ranger needed to have a college degree. The G.I. Bill enabled veterans to go to college and earn degrees in forestry.

After World War II, the Forest Service continued to discourage women from applying for junior forester positions. Officials held to the old assumption that a female forester would get pregnant and resign to start a family or subordinate her career to that of her husband and move away. And if she married a forester, nepotism laws required one of them to leave the Forest Service.¹¹

An agency employment leaflet from around 1950 stated the agency’s position on women in field positions: “The field work of the Forest Service is strictly a man’s job because of the physical requirements, the arduous nature of the work, and the work environment.”¹² The only way to find out whether women could do the job was to hire them, but that was not permitted: it was a man’s job. The Civil Rights Act of 1964, which required employers to provide equal employment opportunities, meant the agency would have to change its hiring practices....

The feminist and civil rights movements were slow to affect the Forest Service. As late as 1976, women held eighty-four percent of clerical jobs in the agency and fifteen percent of administrative and technical jobs, but fewer than two percent of full-time professional jobs.¹³ The career of Geraldine “Geri” Bergen Larson was typical of the handful of women with a forestry degree. Although she ranked at the top of the 1962 forestry class at Berkeley and then earned a master’s degree in botany, Larson had to work in research and public information instead of in the field, as she hoped to do, from 1967 to 1972. Her work on environmental issues and her educational background led to her appointment as the regional environmental coordinator for Region 5 in 1972, an unusual position for a woman to hold at that time. She developed regional policy to implement the National Environmental Policy Act, consulted in the field with people working on environmental impact statements, and coordinated those and other similar activities with the Washington office and other federal agencies.¹⁴

Larson still wanted to work in forest management. Bob Lancaster, the forest supervisor on the Tahoe National Forest, discussed her aspirations with Doug Leisz, the regional forester. Leisz hesitated because Larson’s husband, who owned his own business in San Francisco, would have to move in order for her to advance in the agency. She and her husband worked out a compromise that allowed her to accept the appointment as deputy forest supervisor of the Tahoe National Forest in 1978, making her the first female line officer. She took over the Tahoe in 1985 and became the first female forest supervisor in the agency’s history.¹⁵

A year after Larson made it into the field as deputy forest supervisor, the first woman candidate for smokejumper training



Geraldine Larson received support from regional forester Doug Leisz in her bid to become a forest supervisor, but only after he was assured her husband supported the promotion.

arrived at McCall smokejumper base in Idaho. Women were not hired on a permanent basis to fight fires by a federal agency until 1971, when the Bureau of Land Management put an all-female firefighting crew to work in Alaska. The Forest Service reluctantly followed suit in the continental United States, at first fielding all-women crews, then integrating women into existing firefighting teams. The agency debate about placing women in a dangerous occupation foreshadowed the later national debate about women in the military; both centered on whether women had the strength and temperament for traditional male jobs.¹⁶

By 1978, women had joined hotshot crews and helitack units, in which firefighters rappel from helicopters. The following year, Deanne Shulman, a seasonal firefighter since 1974 who had served on a hotshot crew and a helitack unit, applied for and was accepted into the smokejumpers program at McCall. When Shulman reported for training, she was told that she did not meet the minimum weight threshold and was immediately dismissed. As she packed to leave, she learned from some sympathetic male jumpers that, over the years, several men who were underweight had not been dismissed. Allen "Mouse" Owen, a four-foot-eleven, 120-pound Vietnam War vet who had received congressional waivers on the height and weight requirements and had been with the smokejumpers for ten years, contacted her and encouraged her to fight for her rights.¹⁷

Shulman did not dispute the legality of her termination but argued that the weight requirement had been waived for others and that she should receive equal treatment. When her initial complaint to the forest supervisor proved unsatisfactory, she filed a formal Equal Employment Opportunity complaint. The Forest Service, faced with unwanted media scrutiny over the dismissal, reconsidered and offered her another chance as long as she met the minimum weight when she reported, which she did. Shulman completed the training in 1981 to become the first female smokejumper in the United States. Other women soon followed, and another closed door was permanently opened.

Other doors had begun to open as well. The Forest Service appointed its first woman district ranger, Wendy Milner Herrett, in 1979. Herrett had started her career as a landscape architect at Region 6 headquarters in Portland, Oregon. As district ranger, she oversaw 346,000 acres on the Blanco Ranger District of the White River National Forest in Colorado.¹⁸ Her appointment foreshadowed another change: unlike other district rangers, she was neither a forester nor an engineer.

THE CONSENT DECREE

Forest Service leadership did not formally address the problem of discrimination against women and minorities in the workplace until a lawsuit in 1973 forced them to do so. At the Forest Service experiment station in Berkeley, Gene Bernardi, a female Forest



Charlotte Larson, the Forest Service's first female smokejumper pilot, is pictured with Deanne Shulman, the agency's first female smokejumper, in 1981. Several men encouraged Shulman to petition for her right to serve as smokejumper, despite her being below the required weight, because some men had received weight waivers.

Service sociologist, applied for a position but the hiring supervisor decided to wait for a male applicant. In 1973, Bernardi sued on the basis of sexual discrimination under Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972, and won compensation but not the job. She and several other women then filed a class-action lawsuit over the hiring and promotion of women and minorities in Region 5, which covers all of California.

In 1979, the Forest Service agreed to a consent decree, which the district court approved in 1981. The decree meant the agency had to bring its California workforce into line with that of the state's civilian labor force by having women in more than 43 percent of the jobs in each job series and grade. The Forest Service agreed to monitor progress and enforce the rulings. The Reagan

administration argued that the Bernardi decree represented little more than a hiring quota system, and its opposition delayed the Forest Service's efforts to comply, leading U.S. District Court Judge Samuel Conti to extend its terms until 1991; in 1992, the parties agreed to a new settlement that expired in 1994.

Forced to implement the consent decree or find itself in contempt of court, the Forest Service began to increase the number of women at the GS-11 through GS-13 levels to give them the experience and exposure that would qualify them for higher administrative positions. Aiding its efforts was the implementation of environmental laws, such as the National Forest Management Act, that expanded the agency's responsibilities and required more workers with backgrounds in recreation management, sociology, and other nonforestry disciplines, disciplines that many women had entered because they held more opportunities than did forestry. The rapid promotions of women, however, proved a powerfully divisive issue among employees. Many felt that the consent decree put "accelerated" women in an unfair position, forcing them to succeed or be judged as failures. Some did succeed, to the benefit of the Forest Service, but others did not, and both they and the agency "lost." The shift away from the concept of meritocracy in hiring and promotion practices generated resentment within a few years and created a difficult work atmosphere in Region 5.¹⁹

Though the Forest Service stepped up the recruiting of women following the consent decree, with

so few women in management or in the sciences to serve as mentors or role models, women began seeking ways to connect with one another. The journal *Women in Forestry* (later *Women in Natural Resources*) began publication in 1983 "to provide ideas and information for, from, and about women in the forestry profession."²⁰ The journal gave women a place to voice their concerns and problems, to learn from one another, and to diminish the isolation they experienced in male-dominated land management agencies.

Professional women entering the Forest Service brought with them a different perspective on the relationship between humans and the environment. A survey conducted in 1990 found that "women in the Forest Service exhibit greater general environmental concern than men" and in particular were more in favor of reducing timber-harvest levels on national forests and

designating additional wilderness areas. Another survey found that nontraditional professionals (regardless of gender) held beliefs similar to those of the women in the first survey. Subsequent studies have shown little or no difference in attitudes concerning general environmental issues between men and women, but women exhibited “significantly more concern than men about local or community-based environmental problems.” Taken together, the studies suggest that the increase in the number of nontraditional employees had a measurable impact on the attitudes of other employees and was changing the agency’s management focus. Forest Service employees’ values are now more closely aligned with those of the general public they serve.²¹

MINORITIES AND CULTURAL BIASES

While women made their way into new positions in the agency, African Americans held the fewest jobs of any race at all levels. African Americans had to overcome cultural bias not only in the Forest Service but also within the black community itself. When Charles “Chip” Cartwright considered forestry in the 1960s, agricultural careers carried the stigma of field labor during slavery. Cartwright had been discouraged from studying forestry by his college professors for that reason.²² But Cartwright’s summer job as a Forest Service fire lookout made him want to persevere. After graduating in 1970, he became one of the first African American foresters in the agency and was subsequently the first African American district ranger in 1979, the first African American forest supervisor in 1988. He took charge of Region 3 (Southwest) in 1994 and was succeeded in 1998 by Ellie Towns, the first African American woman appointed regional forester. Shortly after becoming district ranger in Washington’s Okanogan National Forest in 1979, Cartwright began working with black community leaders in nearby Seattle, hoping to attract black youths to enroll in the Young Adult Conservation Corps and forestry schools.²³

Unlike African Americans, Americans Indians and Hispanics have long been associated with the Forest Service. Because of the agency’s early strategy to hire locals who knew the land and its users best, some of the first rangers in the Southwest came from the local Hispanic population. In fact, three members of one family were serving as rangers before the 1905 transfer, and four Hispanic rangers were listed at the time of the transfer on the nation’s most remote ranger district, the Cuyama District, in what is now the Los Padres National Forest in central coastal California.

But those early hiring practices had long been abandoned, and in the 1980s, Hispanic employees in Region 5 filed a class-action lawsuit. The resolution they reached with the Forest Service in 1992 required the agency to actively recruit, hire, and retain more Hispanics. A second settlement agreement in 2002, like the consent decree of 1979, included further measures to bring the number of Hispanic employees in line with California’s workforce, of which Hispanics comprise about thirty percent. As of 2003, Hispanics accounted for about ten percent of the Region 5 payroll.

THE ARRIVAL OF THE OLOGISTS

Implementing the National Environmental Policy Act and the National Forest Management Act created demand for new types of employees, such as wildlife biologists, hydrologists, recreation experts, economists, archaeologists, and sociologists—collectively, *ologists*. Some of these new employees questioned the status quo in land management as well as personnel management. Some knowingly risked their jobs—and in some cases, their personal

safety—to speak out publicly against land management practices with which they disagreed. The willingness of some to confront the old-guard foresters and engineers earned them the epithet *combatologists*.

There were several reasons for the differences. Studies conducted in the 1980s found that older foresters who had risen to managerial positions had typically joined the agency between ages nineteen and twenty-four years, an impressionable age, during the agency’s heyday. They were so loyal to the agency’s mission and methods that they were said to “wear green underwear,” “be green-blooded,” or “speak the green language.” They had been indoctrinated in Forest Service culture and were reluctant to question authority. During the 1980s many older timber managers viewed wildlife management and the other nonforestry sciences as an unwelcome constraint on timber harvesting, and they were not shy about voicing that opinion.²⁴

In contrast, the *ologists* had joined at about age thirty, after attending graduate school. Their graduate studies encouraged loyalty to their professions and emphasized independent research and thinking rather than the conformity and uniformity that had characterized past decision making in the agency. The continued emphasis on timber fostered resentment over the low priority given to the other uses they had been hired to help manage, leading some *ologists* to question making a long-term commitment to the Forest Service. In addition, female *ologists* often found it harder to fit in with the male-dominated Forest Service culture and to juggle career and family.²⁵

The willingness of *combatologists* to take on their bosses revived a whistle-blowing tradition in the Forest Service that began with its first chief. Gifford Pinchot had challenged Interior Secretary Richard Ballinger and President William Howard Taft over disputed Alaskan coal leases in 1910 and was fired for insubordination. In the 1910s and 1920s, researcher Raphael Zon argued with Chiefs Graves and Greeley on behalf of an independent research branch and was transferred out of Washington for speaking his mind. Arthur Carhart and Aldo Leopold both resigned from the Forest Service in order to freely advocate for their visions of wilderness. In the 1980s, John Mumma and Jeff DeBonis and other *combatologists* also wanted to see the Forest Service do what they believed was best for the land and for the public. In doing so, they were carrying out Zon’s exhortation: “The success of the Forest Service is based on the encouragement of free expression of new ideas. If forestry is to make progress in the States, the same principle should be recognized even if it calls forth resentment from those who do not want or cannot keep pace with new developments.”²⁶

BUDGETS CUTS AND BACKLASH

Just as all of those pressures intensified, the Forest Service budget was slashed because of the Balanced Budget and Emergency Deficit Control Act of 1985 (more popularly known as the Gramm-Rudman Act). Aimed at reducing the federal deficit, the act forced the federal government to cut payroll and services. The Forest Service saw a twenty-five-percent reduction in staff. Employees in traditional forestry positions found that the doors flung open for new scientists and women were now marked “exit” for them. Between 1983 and 1992, jobs in engineering and range management decreased, while employment in nonforestry fields generally increased.²⁷ Some employees took early retirement, taking their expertise with them.²⁸



From left to right, Jennifer Martynuik, Mara Kendrick, Lori Messenger, and Jeanine Faulkner take a break on the Toiyabe National Forest in 2000. Lori was married to a smokejumper. She and her husband alternated being on the jump list so one of them could be home with their child, something their boss encouraged.

Technology contributed to job losses, too. The introduction of desktop computers, especially the Data General system, in the mid-1980s eliminated the need for typing pools and many of the women who staffed them. In all, between 1980 and 1990, the Forest Service eliminated approximately five thousand positions.

The workforce cuts under Gramm-Rudman prompted a backlash against the consent decree of 1979. In October 1985, African American employees in Region 5 filed a class complaint over their “gross under representation” in the workforce. The Forest Service filed a motion to dismiss the complaint on the basis that it was in conflict with the consent decree; the courts dismissed the complaint in 1991.²⁹ In 1990, four male employees filed suit to stop the consent decree’s implementation. When the courts turned them away, three others joined them in filing another suit, this time claiming reverse discrimination. That, too, was dismissed.³⁰

Regional foresters in other regions grew resentful when the women they had recruited and trained for professional and technical positions were reassigned to Region 5 to satisfy the consent decree. The transfers increased the number of women working in that region but did not eliminate harassment and discrimination, and so additional lawsuits were filed in the late 1990s. As part of one settlement agreement, the Forest Service established a monitoring council in 2001 at the regional offices in Vallejo, California, to implement an action plan. Unknown persons vandalized the council’s office sign on three occasions, an indication of the continuing animosity.³¹

TWO STEPS FORWARD, ONE STEP BACK

Although their numbers have increased in forestry, range, and engineering—the categories from which most of the agency’s line officers have traditionally been chosen—women have remained underrepresented in those fields.³² Because of the technical demands of these positions, the Forest Service could not easily promote from within: “You can’t change a G-3 clerk into

a District Ranger,” one male district ranger noted in 1984. The real problem was not race or gender, he said, but experience and education, which take years to acquire. The district ranger suggested that efforts to get women and minorities into those positions and into management should begin with recruiting from colleges, a strategy the agency has been pursuing to ensure that the composition of its workforce increasingly resembles that of the American labor force.³³...

In addition to providing training to eliminate discrimination and harassment in the workplace, the Forest Service launched several programs, such as Work Force 1995: Strength through Diversity, designed to achieve an “ideal” workforce as defined by the Civil Service Reform Act of 1978. On the whole, diversity programs and improved personnel management practices, combined with the introduction of professionals from nontraditional fields, have had an irreversible impact on Forest Service culture. By 2004, roughly one-third of all district rangers and forest supervisors were women.³⁴

Implementing policies important to women employees, such as maternity leave and flexible work schedules, which did not exist when Bernardi filed suit, have benefited men as well as women. Career training has helped both male and female employees advance and become more responsive managers in a period when the Forest Service has to serve more forest users with fewer agency resources than ever before.

Despite the progress in hiring and retaining a diverse workforce, problems remain and lawsuits continue to be filed. As one Forest Service employee noted in 1984, “Given the Forest Service’s traditional values, it’s a big step to open up the organization to women and minorities. It’ll take time, but we’re getting there.”³⁵

Now twenty-plus years later, with the agency’s employment practices under continued scrutiny, the agency is still trying to get there. □

James G. Lewis is the editor of *Forest History Today*. This excerpt is from *The Greatest Good and the Forest Service: A Centennial History*, pages 162–185. Copyright of Forest History Society, 2005.

NOTES

1. See the December 2016 testimony of Lesa L. Donnelly, vice president of the USDA Coalition of Minority Employees, submitted to a congressional committee in which she shares numerous examples of civil rights violations in federal land management agencies dating back to 2000 and the department's responses to the incidents. "Expanded Testimony of Lesa L. Donnelly for the Committee on Oversight and Government Reform, U.S. House of Representatives," <https://oversight.house.gov/wp-content/uploads/2016/12/Donnelly-AGCoalition-Statement-12-1.pdf>.
2. *Proceedings of the Fourth American Forestry Congress, October 29, 30, and 31* (Washington, DC: The American Forestry Association, 1953), 170.
3. Herbert Kaufman, *The Forest Ranger: A Study in Administrative Behavior* (Baltimore: The Johns Hopkins Press for Resources for the Future, Inc., 1960), 96, 161.
4. Kaufman, *The Forest Ranger*, x.
5. Doug Leisz, interview for *The Greatest Good: A Centennial Film*, transcript, U.S. Forest Service History Collection, Forest History Society, Durham, NC.
6. R. W. Behan, "The Myth of the Omnipotent Forester," *Journal of Forestry* 64(6) (June 1966): 398.
7. Lida W. McBeath, "Eloise Gerry: A Woman of Forest Science," *Journal of Forest History* 22(3) (July 1978): 128–35.
8. Gerald W. Williams, "Women in the Forest Service: Early Historical Accounts" (unpublished manuscript, U.S. Forest Service History Collection, Forest History Society, Durham, NC) 1.
9. Doug Leisz, interview; and Gertrude Becker, interview for *The Greatest Good: A Centennial Film*, transcript, U.S. Forest Service History Collection, Forest History Society, Durham, NC.
10. Quoted in Chuck James, "Women in the Forest Service: The Early Years," *Journal of Forestry* 89(3) (March 1991): 14–17; and Lee F. Pendergrass, "Dispelling Myths: Women's Contribution to the Forest Service in California," *Forest and Conservation History* 34(1) (January 1990): 24.
11. James, "Women in the Forest Service," 17.
12. "A Job with the Forest Service: Information about Permanent and Temporary Jobs with the U.S. Forest Service," (c. 1950), 3. In the U.S. Forest Service History Collection, Forest History Society, Durham, NC.
13. Michael Frome, *The Forest Service*, 2nd ed. (Boulder, CO: Westview Press, 1984), 66–67.
14. Jacqueline S. Reinier, *An Interview with Geri Vanderveer Bergen* (Durham, NC: Forest History Society, Inc., 2001), 55–63. When Larson graduated from the University of California at Berkeley in 1962, she received the highest academic distinction ever bestowed upon a University of California forester to that time, receiving honorable mention for the University Medal, the highest student award given at commencement exercises, and was also elected to Phi Beta Kappa. *Forestry Education at the University of California: The First Fifty Years*, edited by Paul Casamajor (Berkeley: California Alumni Foresters, 1965), 206; and Michael Frome, *The Forest Service*, 2nd ed. (Boulder, CO: Westview Press, 1984), 68. Known as Geraldine Bergen Larson during most of her Forest Service career, after the death of her husband in 1987, she legally changed her name to Geri Vanderveer Bergen.
15. Reinier, *Interview with Geri Vanderveer Bergen*, 63–65; and Doug Leisz, interview. Larson's husband kept his business and they took turns commuting on weekends to see one another.
16. Michael Thoel, *Fire Line: Summer Battles of the West* (Golden, CO: Fulcrum Publishing, 1995), 139. Thoel has a chapter on what he calls "the sisterhood of wildland fire." The Forest Service has not kept good records on female firefighting crews, so it is not known with certainty when women were first hired as firefighters by the agency.
17. Deanne Shulman, "On Becoming a Smokejumper," *Smokejumper Magazine* January 2003, accessed at http://www.smokejumpers.com/smokejumper_magazine/item.php?articles_id=238&magazine_editions_id=14. Shulman and Owen never met in person. Owen offered Shulman support and guidance by mail and telephone during her first season until he was killed in a parachute accident in September 1981.
18. Frome, *Forest Service*, 66–67.
19. Anthony Godfrey, *The Ever-Changing View: A History of the National Forests in California, 1891–1987* (R5-FR-001. San Francisco: USDA Forest Service, Pacific Southwest Region, 2005), 525.
20. Frome, *Forest Service*, 66.
21. Affirmative Employment Plan Update, 73; and Jennifer C. Thomas and Paul Mohai, "Racial, Gender, and Professional Diversification in the Forest Service from 1983 to 1992," *Policy Studies Journal* 23(2) (Summer 1995): 296–309.
22. USDA News Feature Service, "Against the Tide: How One Youth Won the Career of 'HIS' Choice," May 21, 1980, U.S. Forest Service History Collection, Forest History Society, Durham, NC.
23. "Against the Tide"; and "Chip Cartwright, 1994–1997," Regional Foresters, Southwest Region: About Us, <http://www.fs.fed.us/r3/about/history/sw-rfs/cartwright.shtml>, accessed 29 July 2004.
24. Harold K. Steen, *An Interview with Michael P. Dombeck* (Durham, NC: Forest History Society, 2004): 7.
25. James J. Kennedy and Jack Ward Thomas, "Exit, Voice, and Loyalty of Wildlife Biologists in Public Natural Resource/Environmental Agencies," U.S. Forest Service Collection, Forest History Society, Durham, NC.
26. Quoted in Char Miller, "Militant Forester: Raphael Zon," *Forest Magazine* Winter 2005: 23.
27. Jennifer C. Thomas and Paul Mohai, "Racial, Gender, and Professional Diversification in the Forest Service from 1983 to 1992," *Policy Studies Journal* 23(2) (Summer 1995): 296–309.
28. Harold K. Steen, *An Interview with R. Max Peterson* (Durham, NC: Forest History Society, 1991 and 1992), 278.
29. Allen Spencer, "Brief History of the 1985 Black Class Complaint in the California Region of the Forest Service," accessed at http://www.mlade.com/~aspencer/class_1985_history_introduction.html, 10 January 2005.
30. In 1990, a group of male employees from Region 5 moved to intervene in the female employees' Title VII action. The district court denied their motion, holding that it was untimely. The court affirmed in an unpublished disposition (*Bernardi v. Yeutter*, 945 F.2d 408). Shortly thereafter, male employees brought a separate action against the Forest Service, challenging the terms of the consent decree. The district court dismissed that action, holding in part that the male employees could not bring an independent action challenging the terms of a consent decree (*Levitoff v. Espy*, WL 557674). The male employees petitioned for a writ of certiorari, which the U.S. Supreme Court denied. *Levitoff v. Glickman*, 117 S. Ct. 296 (1996). The cases are summarized in *Donnelly v. Glickman* (9716648), accessed at <http://news.findlaw.com>.
31. USDA Forest Service, 2003. "Region 5 Women's Settlement Agreement, Monitoring Council Report, First Report R[egion] 5 Women's Settlement Agreement (*Donnelly v. Veneman*)," U.S. Forest Service History Collection, Forest History Society, Durham, NC.
32. Frome, *Forest Service*, 65–66; Office of Personnel Management, 2000 Demographic Profile of the Federal Workforce, Table 1, accessed at <http://www.opm.gov/feddata/demogap/table1mw.pdf>, 28 July 2004; and USDA Forest Service, FY 2002 Affirmative Employment Plan (AEP) Update and FY 2001 Accomplishment Report for Women and Minorities March 2002: 73.
33. "Field Notes," *Pacific/Southwest Log*, March 1984: 7.
34. Tim Sullivan, "Transforming the Forest Service: Maverick Bureaucrat Wendy Herrett," *High Country News* 6 December 2004, accessed at http://www.hcn.org/servlets/hcn.Article?article_id=15160, 20 December 2004.
35. "Field Notes," 8.

Henry David Thoreau is a familiar emblem of the conservation movement, but fitting his writings to the procrustean bed of preservationist ideology was curiously problematic.

THE TROUBLE WITH THOREAU'S WILDERNESS

In a provocative essay published in 1996, environmental historian William Cronon announced that the time had come to “rethink wilderness.” To illustrate the weight that the idea carried, he began “The Trouble with Wilderness” with Henry David Thoreau’s famous phrase, “in Wildness is the preservation of the World,”

a slogan that had animated preservationist discourse since the 1950s. But wilderness, Cronon went on to say, was “not quite what it seems”; it was a “human creation,” an artifact of particular episodes in human history. As such, the concept had been loaded with “some of the deepest core values of the culture that created and idealized it”: the longings, fears, and hopes of each particular age that contemplated these unpeopled lands. In our era wilderness had become, he wrote, an “escape from history,” promoting the “illusion we that can somehow wipe clean the slate of our past and return to the tabula rasa that supposedly existed before we began to leave our marks on the world.” In saving this imagined world, we “give ourselves permission to evade responsibility for the lives we actually lead.” Cronon ended his essay by repeating Thoreau’s wilderness declaration, but with a subtle addendum: as Thoreau saw it, “wildness (as opposed to wilderness) can be found anywhere.”¹

“The Trouble with Wilderness” touched off a flurry of criticism and in unanticipated ways left the rationale for wilderness preservation vulnerable to attacks from both right and left.² Yet to highlight Thoreau’s appearance in the essay provides an interesting way to begin rethinking the trouble with wilderness, since he was not only the most ambivalent of wilderness icons but also one of the few who offered resolution to its contradictions.

Thoreau’s eight resounding words were among the most powerful ever written in the defense of nature, but as Cronon implies, they embodied the ambiguities in the movement that claimed them. As a Romantic, Thoreau supposed nature to be tender, benevolent, harmonious, and ordered, but as a scientist acquainted with Darwin’s *Origin of Species*, he knew it to be wild, chaotic, dissonant, and uncaring. Political scientist Ian Box summarized: “In his view we are hungry not only for the security of a provident nature, but even more for the wild caprice of an order which transgresses our self-imposed limits.” To those who read Thoreau carefully, wilderness seemed at odds with his overall experience of nature.³

The tension in Thoreau’s wilderness writing came to light in a speech made by Pennsylvania Representative John Saylor in 1957, one year before Congress took up the debate that culminated in the 1964 Wilderness Act. Saylor quoted Thoreau’s “In Wildness is the preservation of the World” and then explained that the author’s famous book, *Walden*, was set “in the wild lands around Concord,” where Thoreau first discovered the “the tonic of wilderness.”⁴ In his strained attempt to portray the Walden woods as wilderness, Saylor recognized that Americans were willing to pay to protect a sublime wilderness world they would almost surely never experience, but he also knew they longed to connect with nature at a much more personal level—in a place perhaps as familiar

BY RICHARD W. JUDD

as the well-trammeled Walden woods. Thoreau, in fact, offered both. He felt liberated by a western wilderness he could only imagine, but he also felt connected to—and responsible for—the wilderness just beyond his doorstep. In this sense Thoreau not only articulated the trouble with wilderness but also offered solutions.

Thoreau first emerged as a symbol of conservation thought as early as the 1950s, when commentators began to voice fears that the rapidly growing economy would exhaust the world's natural resources.⁵ The decisive turn in his reputation came in 1963 with publication of Stuart Udall's *Quiet Crisis*, a popular historical account that pieced together a national conservation tradition based on the writings of major American explorers, scholars, philosophers, and politicians. Ralph Waldo Emerson, the Interior secretary wrote, urged scholars to create a national literary tradition by responding "to the rhythms of the... earth," and this inspired his Concord neighbor to champion the cause of conservation.⁶ During these postwar decades academics and scientists contributed to this conservationist image by taking seriously, for the first time, Thoreau's contribution to natural science. Earlier critics had dismissed his later journal entries, which were chocked full of scientific detail about plant and animal seasonality, habitat, and behavior, as a dissipation of Thoreau's philosophic and poetic energies. Charles Stewart, writing in *The Atlantic Monthly* in 1935, was among the first to understand the significance of these observations. Thoreau, he noted, measured snow depths, charted lake bottoms, counted tree rings, inspected birds' nests, and kept careful records of his findings. Those who dismissed these details as minutiae failed to appreciate the scientific implications. "There is no such thing as an unimportant fact," Stewart wrote. "Its significance may depend upon how it fits in with other facts; but you have to get your facts first.... Eventually something will come of them."⁷

THOREAU AS ECOLOGIST

Thoreau was first identified as an ecologist in a 1942 *Quarterly Review of Biology* article by Edward S. Deevey Jr., who considered Thoreau both "scientist and mystic." It was precisely this mix of holistic and particular thinking, Deevey wrote, that made him a pioneer in the field of ecology. Biographer William Condry wrote that Thoreau brought together his two passions—science and poetry—into a single powerful vision, not unlike the vision required to see nature as an ecological whole.⁸ The strongest case for identifying Thoreau as an ecologist was made by Philip Whitford and Kathryn Whitford in a 1951 article in *Scientific Monthly*. Thoreau, they argued, developed a scientific method appropriate to the standards of his own times: he observed closely, questioned the accuracy of his own observations, and kept extended records. He studied a single plant repeatedly over several seasons to understand its entire life cycle, and by careful observation of stumps and sprout wood, he could envision the past composition of a woodlot cut three times over.⁹

The discipline of ecology was politicized in the 1950s by scientists assessing the ecological implications of global population growth and the threats posed by nuclear fallout and chemical pesticides and herbicides. Rachel Carson's 1962 *Silent Spring* was a benchmark in the formation of this new, politicized popular ecology. The book sparked a controversy that divided the scientific community, spilled out into the popular media, and landed this "improbable revolutionary," as biographer Linda Lear calls her, at the epicenter of an acrimonious debate over the use of chemicals and the health of the environment.¹⁰ In the years that followed, her citizen-defenders forged the principles of ecology into a new militant ideology while a younger generation of scientific ecologists moved out of the ivory tower and into the public sphere.



Thoreau's replicated cabin at Walden Pond. It actually sits at the edge of the visitors' parking lot, about a half-mile from its original site.



With the emergence of a new, more activist understanding of ecology, Thoreau's unique fusion of science and poetry gained visibility. University of Illinois English professor Nina Baym emphasized the moral implications in his studies: like a good ecologist, he looked for relationships rather than discrete phenomena, and like a good poet, he drew moral and spiritual lessons from these relationships. His insistence on precise measurement, his search for higher meaning, and his yearning for mystic communion all pointed to a deep ethical regard for plants, animals, birds, and fish. Thoreau's newly discovered ecological sensibilities fit brilliantly into this new outlook. He became, in essence, an ecologically informed advocate for nature—an environmentalist.¹¹

THOREAU AS WILDERNESS ADVOCATE

Thoreau's role as a wilderness advocate followed a similar trajectory. The movement to protect wilderness on the federal level achieved a breakthrough in the 1920s, when regional foresters in the U.S. Forest Service began setting aside primitive areas in the national forests. In 1951 Howard Zahniser of The Wilderness

Society called for a bold congressional offensive to protect undeveloped open spaces in national forests and national parks, and in 1958 Senator Hubert Humphrey of Minnesota and Representative John Saylor introduced a wilderness bill in Congress. The movement gained popularity during the 1970s, coincident with rising personal income, expanding leisure time, a vigorous outdoor equipment industry, and what *New York Times* commentator Oscar Godbout called an "atavistic impulse to live in a tent"—a camping and backpacking craze.¹²

Long known as an advocate for local conservation reserves, Thoreau's name became synonymous with wilderness preservation. In his seminal *Wilderness and the American Mind*, Roderick Nash began a chapter with Thoreau's well-known proclamation, of which he declared that "America had not heard the likes before." Inspiring Thoreauvian phrases slipped seamlessly into the rhetoric of the preservationist campaigns.¹³

The wilderness movement inspired a new generation of nature books by writers like Bob Marshall, William Byron Mowery, and Sigurd Olson, who described places where the allure of the land depended in good part on its unforgiving,



Mount Katahdin, as seen in 2014. Thoreau had his only real wilderness adventure on the mountain. While in Maine he was an outsider and observer; in Concord he was part of the nature he explored.

indeed unwelcoming character. In this literature, Thoreau was quoted widely, but often in ways that would have been unfamiliar to the Concord naturalist. Sierra Club director Michael Frome, for instance, used his words for inspiration but framed them to project a vision of wilderness—not as a source of poetic inspiration or self-enlightenment but rather as an opportunity for self-mastery and mastery over nature. Wilderness was the thrill of the unplanned moment, the expectation of danger, and the apprehension of beauty amidst a harsh natural environment. Nature became wilderness only when the experience of getting there was “physically difficult.”¹⁴

THOREAU AS WILDERNESS ADVENTURER

By these standards, Thoreau was by no means a wilderness adventurer. While other naturalists of his time were traversing the uncharted spaces in the West, he remained tethered to the hills and hollows of his hometown. Harvard’s Howard Mumford Jones reminded readers that the Walden hermit interrupted his “life in

the woods” almost daily to return to Concord for meals, odd jobs, or conversation with friends. As Paul Oesher wrote in *Living Wilderness*, “He prized the wilderness and saw in its preservation the hope of the world, yet he took comfort in the warmth of Concord village.” His chemistry, Oesher concluded, “requires both positive and negative ions.”¹⁵

In light of the rising interest in wilderness, scholars and activists turned to Thoreau’s essays on the Maine woods, his only real wilderness adventure. His posthumously published *Maine Woods* yielded any number of vivid aphorisms attesting to the spiritual value of wild nature, but as an endorsement of the wilderness experience, it was confusing. To even the casual reader it was evident that Thoreau was not at home in this vast and dreary place. He acknowledged at the outset that there would be “no sauntering off to see the country,” and indeed he stuck mostly to the rivers, trails, and haul roads carved out by North Woods lumbermen and river drivers.¹⁶ In his Concord writings he had carefully crafted the illusion he was part of the nature he explored; in Maine he

was an outsider and observer, traveling under the watchful eye of Indian guides and seldom venturing into the forest itself—except to get lost.

Nowhere was this ambiguity more apparent than in his September 1846 ascent of Mount Katahdin, described in the first of the three essays that make up *The Maine Woods*. His party camped near the base of the mountain, and in the morning Thoreau ascended to the high tableland. Across this immense space he spied the summit, still distant and barely visible through the mist. Standing astride the barren rocks, he realized that there was nothing metaphorical about this windswept, cloud-raked field of boulders, and this terrifying sense of barrenness yielded, as literary biographer R. D. Richardson wrote, “one of the best statements in American literature about what happens when one comes face to face with the primeval world of matter and force.”¹⁷

Thoreau had climbed the mountain expecting, as always, to use his observations as a foundation for exploring higher truths about humanity, but as he stood bracing against the driving mist, he realized that the aggregation of loose rocks and stubble on the tableland yielded none of the rich human metaphors he had discovered in the Concord woods. True wilderness, he concluded, was not nature but the primal inorganic material out of which nature was made—“raw materials of a planet dropped from an unseen quarry.” Where poets and painters before him had kindled the mountain sublime into soaring inspirational themes, Thoreau felt empty.¹⁸

On his descent, he passed through a swath of recently burned land, and it was in this dynamic patch of early succession growth, rather than on the mountain, that he reconnected with the regenerative natural forces that he described so beautifully in his Concord nature writing. The contrast with the summit triggered some of the most salient wilderness imagery ever penned. “This was that Earth of which we have heard, made out of Chaos and Old Night. Here was no man’s garden, but the unhandelled globe. It was not lawn, nor pasture, nor mead, nor woodland, nor lea, nor arable, nor waste-land. It was the fresh and natural surface of the planet Earth, as it was made forever and ever,—to be the dwelling of man, we say,—so Nature made it, and man may use it if he can.”¹⁹ He returned to Concord convinced that the poet must, “from time to time...drink at some new and more bracing fountain of the Muses, far in the recesses of the wilderness.”²⁰

Thoreau clearly found the Katahdin experience transforming, but in ways perhaps too subtle to be understood in the heat of the 1970s preservationist crusades. Taken aback by the severity of Katahdin’s barren landscape, he concluded that true wilderness was completely separate from humanity—wild, chaotic, and as uncaring as the sea that claimed so many lives off Cape Cod, his only other encounter with wilderness landscapes. The “mighty streams, precipitous, icy, savage” that fell from Katahdin’s rock-strewn ravines replenished the soul, as he wrote, but those who

crafted these words into a call for preservation missed the point that the panoramic sublime ruled out any personal contact with nature.²¹ Wilderness fed the soul, but at the expense of another spiritual sustenance: the intimate communion with nature he enjoyed on his Concord saunters. His deeper sympathies lay not with wilderness but with wildness—a subtly different experience he discovered in places far more familiar than the windswept heights of Katahdin.

Despite these ambiguities, *The Maine Woods* became a classic in American wilderness literature. For some, the three essays simply affirmed the adventure of back-country travel. According to Condry, Thoreau was wild as the land itself. “He stayed in settlers’ outposts, learned to navigate a batteau in the rapids, made long and strenuous portages round waterfalls, rowed miles along the lakes by moonlight, slept under the stars by log-fires, watched ospreys and bald eagles by day and listened to wolves and owls by

night.”²² Joseph Wood Krutch pointed to Thoreau’s conviction that in desolate places we “witness our own

limits transgressed.” Here indeed was a power that transcended human existence, and at a time when technology was hurling humanity toward oblivion, Krutch thought, this was a useful reminder: wilderness taught hubris. Others learned the importance of solitary movement through wild spaces. The Katahdin ascent was “inward” as well as outward, Philip Gura suggested. Thoreau was “changed, transformed, created anew,” Stanley Tag added, by a “simple, uncluttered encounter with an environment where the present is more easily embraced than elsewhere.”²³ These judgments and others breathed life into the phrase “in Wildness is the preservation of the World.”

Readers in the 1970s may have overlooked the sense of alienation Thoreau felt in the chill air atop the mountain, but they well understood it in their daily lives. The mass protests of the previous decade had been aimed at clearly identifiable agents of injustice, whether corporations, governments, race supremacists, male chauvinists, or the military-industrial complex. Although the sources became more difficult to define, this sense of oppression lingered into the 1970s. Thoreau’s term “quiet desperation” echoed through the press, interpreted in various ways to mean disassociation from work, society, people, the self, or nature.²⁴

The 1970s debate on alienation, coming as it did in the midst of the environmental movement, highlighted awareness of the separation between society and nature. In an article titled “A Thoreau for Today,” Edwin Smith observed that the “deliberate cultivation of kinship with nature, common enough in Thoreau’s day, is notably lacking among us a hundred years later,” and Charles Seib, borrowing from Henry Beston’s *Outermost House*, described the 1970s as “sick to its thin blood for lack of elemental things, for fire before the hands, for water welling from the earth, for air, for the dear earth itself underfoot.” Separation from nature impoverished the world, as Thoreau taught, just as connecting to nature preserved it.²⁵



This iconic photograph was taken in 1856, about a month before his fortieth birthday.

Preservationists who searched *The Maine Woods* for inspiration found themselves enmeshed in a subtle contradiction: in all his writing Thoreau celebrated his immersion in nature, but in true wilderness he found himself at the antipode to human experience. On the wilderness flanks of Katahdin he was taken aback by his alienation, and he rejoined nature only in the burn below: “*Contact! Contact! Who are we? Where are we?*” Just how much he needed this contact became clear in the descriptions of his Penobscot guide, Joe Polis, whose intimacy with nature was everything Thoreau’s Katahdin experience was not. According to Stanley Tag, Polis

dresses a deer skin, makes campfires, finds dry bark, constructs fir-branch beds, makes a birch-bark bowl, candle, and pipe, splits spruce roots, mixes pitch for repairing his canoe, cleans and cooks fish, spots, shoots, skins, and cooks moose, finds ingredients for and cooks lily [root] soup, follows animal trails and tracks, imitates snakes, owls, and muskrats, knows birds by sight, knows medicinal uses for plants, knows about the lives and behaviour of red squirrels, herons, caribou, and mosquitoes, navigates through woods and waterways, ...and paddles and portages canoes through rough water and terrain.

Even in the starkest wilderness, immersion in nature was possible.²⁶

The Wilderness Act, signed into law by President Lyndon Johnson in 1964, demonstrated the nation’s resolve in protecting untrammeled landscapes most individuals would never see for themselves, but as John Saylor’s 1957 speech suggested, Americans also longed for a wildness they could experience personally. How, then, could Thoreau’s ambivalent wilderness sympathies help resolve the “trouble with wilderness”?

As Loren Baritz points out, Thoreau personified the idea of the wilderness West as freedom. “Eastward I go only by force,” he wrote in his essay on walking, “but westward I go free,” into the future and into the realm of the truly liberated. Embroiled in the slavery controversy and disoriented by the shift to a commercial economy, he found his faith in America wavering, but he saw potential for renewal on the western horizon. “Surely good courage will not flag here on the Atlantic border,” he wrote, “as long as we are flanked by the Fur Countries.... The spruce, the hemlock, and the pine will not countenance despair.”²⁷ On this level, *The Maine Woods* expressed the clearest vision of Thoreau’s celebration of nature. Maine was his “West,” Don Scheese writes. “Thoreau ultimately links wilderness and civilization by arguing that the latter depends, literally and symbolically, on the former; wilderness is civilization’s necessary complement.”²⁸

CONCORD’S WILDNESS

Alive to the meaning of wilderness on this vast, open frontier, Thoreau searched for the same untamed quality in his own Concord backyard. According to naturalist John Burroughs, he “ransacked the country about Concord in all seasons and weathers, and at all times of the day and night; he delved into the ground, he probed the swamps, he searched the waters, he dug into woodchuck holes, into muskrats’ dens, into the retreats of the mice and squirrels.” The quest for wildness flavored all his Concord rambles.²⁹ Concord was, as he said, a “tamed and, as it were, emasculated country,” but despite its two hundred years of settlement it was still surprisingly wild on its margins, and in these pockets of unimproved nature he was reminded of the western wilderness

he had so long imagined. Alone in some forgotten corner of the township, he could feel the “marrow of nature” and stand “nearer to the origin of things.”³⁰ His Concord wilderness was important for three reasons. First, it was a source of adventure and intense experience. “I feel as if I were in Rupert’s Land, and a slight cool but agreeable shudder comes over me,” he remembered while standing in Beck Stow’s Swamp. “What’s the need of visiting far-off mountains and bogs, if a half-hour’s walk will carry me into such wildness and novelty?” Second, as one who cultivated “no tame garden,” he found in the isolated swamps and high pastures a harvest of fruits and berries that lasted from late spring through late summer. Foraging bonded him to the land and to the essence of the turning season. “I taste and am strengthened.” And finally, in these lush, primitive settings he could grasp the fundamental realities of nature, putting himself in touch with his own deep consciousness—with the “the stark twilight and unsatisfied thoughts which all have.”³¹ Thoreau was in fact the first in a long line of American writers to express what he called a “singular yearning toward all wildness,” but he was also first to see wilderness as a state of consciousness as well as a description of place. It was in this manner that he made Concord the seat of his wilderness experience. This spirit—the connection between landscape and imagination—made all places seem wild.³²

The phrase “in Wildness is the preservation of the World” came from his essay “Walking,” a celebration of the western wilderness, but he had explained its meaning more carefully in an earlier essay. To the senses, he wrote in “Winter Walk,” a winter scene appears cold and dead, but to the imagination, it exhibits a “glow of thought and feeling.” Frigid air sensitized the walker to subtle sources of warmth—sunlight on the bare rocks or steam rising from a spring in the woods. And beneath his feet was yet another source of warmth: a “slumbering subterranean fire in nature which never goes out, and which no cold can chill.”³³ It was this latent wildness, the promise of a resurgent springtime nature in the ground beneath his feet, that Thoreau saw as the hope of the world. He tasted this wildness in the tang of a wild apple, smelled it in the musky odor of a wet meadow, saw it in the “dazzling and transcendent beauty” of a pond pickerel laid out on the ice, and sensed it in the minnow’s instinctive struggle upstream against the current.³⁴ The Maine woods taught him to appreciate nature’s elemental energies, but it was in Concord that he formed a deep communal connection to these energies. There, a mile or so from home, he experienced nature’s wildness “with all his senses”—standing, as he said, “up to [his] chin in some retired swamp a whole summer day, scenting the wild honeysuckle and bilberry blows, and lulled by the minstrelsy of gnats and mosquitoes.”³⁵

Wilderness bolstered his faith in the character of the American people, but wildness structured his thoughts on his Concord saunters. “Thoreau clearly identifies ‘wildness,’” Laura Dassow Walls wrote, as “something ineffable and strange and raw at the heart of the most common experience.” It was the “great pulse”—the anima coursing through all living things. He read the colonial naturalists who spoke of “Cape Ann Lions” prowling the coastal woods and imagined this unbounded profusion of life still lurking in Concord’s subterranean fires. This was the frenetic search for wildness that John Burroughs so admired in Thoreau: the quality that set him apart from all other nature writers.³⁶ The dual awareness—wilderness near and far—renewed his faith in society and bonded him to his Concord environs.

Thoreau sensed this illusive quality as he sampled wild fruits



This cairn at Walden Pond sits adjacent to the original site of Thoreau's cabin. Friends of Thoreau's started it shortly after his death as a memorial. The photograph dates between 1900 and 1910.

or berries on his walks. Apple trees, growing free and unclaimed in the high pastures, were among his favorite forage. Cattle, he observed, croppped these saplings so low to the ground that they spread outward rather than upward. In time, they became their own fences, and then, at some point, an interior shoot “darts upward with joy: for it has not forgotten its high calling, and bears its own peculiar fruit in triumph.” This lesson in cow-apple ecology assured him that nature was irrepressible—and it provided him with “the choicest of all apples.”³⁷ Standing alone in the high pasture, savoring the taste of this acrid fruit, he contemplated the primitive energies circulating just below the surface—the “howling wilderness” his Puritan forebears had been so intent on eradicating.

NATURE NEAR AT HAND

The difference between wilderness and wildness became apparent in a 1962 Sierra Club publication that borrowed Thoreau's phrase for its title. *In Wildness is the Preservation of the World*, one of a series of large-format glossy coffee-table books distributed by the club to promote wilderness preservation, presented seventy-two magnificent, high-resolution color photographs by well-known nature photographer Eliot Porter, each linked to Thoreau's observations. *In Wildness* went through two printings of 10,000 copies each in its first two years and was, by one account, “the finest series of photographs ever made to illustrate texts by Thoreau.”³⁸

Porter's photographs were clearly inspired by Thoreau's philosophy of nature. Ansel Adams, whose *This Is the American Earth* preceded *In Wildness* in the Sierra Club series, captured the grand sweep of monumental natural features—Half Dome, Death Valley, Yosemite Falls, Mount McKinley. Porter, by contrast, concentrated on intimate details: close-ups of running water, iridescent pools, rock textures, lichens, willows, fallen leaves, and patterns in sandstone. In the introduction to *In Wildness*, Joseph Wood Krutch wrote, “Other writers and other photographers are prone to seek

out the unusual, the grandiose, and the far away.” They “shock us into awareness,” he continued, “by flinging into our faces the obviously stupendous.” But Porter, like Thoreau, searched for higher truths in the familiar landscape, in “the daily and hourly miracle of the usually unnoticed beauty that is close at hand.” His images not only conveyed a poignant message about the impact of brute-force technologies on delicate features that had taken thousands or millions of years to create, they also illustrated Thoreau's message: true connection with nature implied an intimacy not readily experienced in the sublime.³⁹

Thus, while *The Maine Woods* inspired young Americans to climb towering mountains and explore vast forests, *Walden* offered the tonic of wilderness—or wildness, at least—in nature nearby. If the trouble with

wilderness was its separateness, Thoreau offered a means of connecting to nature near at hand. “At a time when few of us can afford the rejuvenating escape to exotic wilderness spaces,” Sandra Harbert Petruionis and Laura Dassow Walls wrote, “Thoreau gives us instead the ‘wild’ of backyard places.”⁴⁰ At Walden Pond, less than two miles from Concord Village, he connected to nature in a way that would have been impossible in the Maine woods. Animals “accepted him as one of their own,” biographer Walter Harding wrote. “The rabbits nested beneath his cabin, bumping their foolish heads on the floor as they made their hasty exists. The squirrels explored his furnishings, searching for newer nut supplies. The field mice came to nibble crackers in his fingers.” He labored shoeless in the warm soil in his bean field, cultivating a deeply personal relation to the land.⁴¹

British poet and naturalist Geoffrey Grigson once observed that American nature writers had been impoverished by their obsession with remote and monumental places. The spectacle of towering peaks and panoramic views distracted them from the endless natural diversity at their feet. For this reason Grigson preferred the more subtle descriptions of nature in British writing. Krutch agreed that writers like John Muir and Enos Mills had been seduced by grand vistas, but in Thoreau, he discovered a credible synthesis of sublime scenery and personal connection. In recording his Katahdin emotions, Thoreau stood with the American Romantics who understood the inspirational meaning of great swaths of unoccupied space and time; in his allegiance to Concord, he was kin to England's Gilbert White, “fixed and content within the compass of a parish.” He ventured along the wilderness trails of Maine and windswept beaches of Cape Cod, but he also discovered an infinitely varied wildness in the Concord fields and meadows, where the imaginative walker could connect to primitive energies not altogether different from those he witnessed on the slopes of Katahdin. Preservation of the world

depended on both wilderness and wildness. For this discovery alone, if for nothing else, Thoreau earned his reputation as a symbol of American environmentalism.⁴² □

Richard Judd is a historian at the University of Maine and is the author of *Finding Thoreau: The Meaning of Nature in the Making of an Environmental Icon, forthcoming from the University of Massachusetts Press*.

NOTES

1. William Cronon, "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature," *Environmental History* 1 (January 1996): 7–28. Thoreau first used the phrase in his popular lecture "Walking, or The Wild," which was first given in 1851 and published in *Atlantic Monthly* in June 1862, one month after he died.
2. Donald Worster, "Thoreau and the American Passion for Wilderness," *Concord Saunter* 10 (2002): 5–6.
3. Ian Box, "Why Read Thoreau?" *Dalhousie Review* 75 (Spring 1995): 12; Robert Francis, "Thoreau on the Benevolence of Nature," *Thoreau Society Bulletin* 140 (Summer 1977): 1.
4. Speech of Hon. John P. Saylor, of Pennsylvania, July 12, 1956, 73, House Committee on Interior and Insular Affairs, Hearings on S. 1176, National Wilderness Preservation Act, U.S. Senate, 85 Cong., session 1, June 19–20, 1957.
5. Leo Stoller, *After Walden: Thoreau's Changing Views on Economic Man* (Stanford, CA: Stanford University Press, 1957), 8, 83, 90–106, 108–15.
6. Stewart L. Udall, *The Quiet Crisis* (New York: Holt, Rinehart and Winston, 1963), 59, 64. See August William Derleth, "Concord Rebel: A Life of Henry D. Thoreau" (Philadelphia: Chilton, 1962), 157.
7. Charles David Stewart, "Word for Thoreau," *Atlantic Monthly* 156 (July 1935): 114. See Raymond Adams, "Thoreau's Science," *Scientific Monthly* 60 (May 1945): 379–80.
8. Edward S. Deevey Jr., "A Re-Examination of Thoreau's 'Walden,'" *Quarterly Review of Biology* 17 (March 1942): 9; William Condry, "A Hundred Years of Walden," *Dublin Magazine* 31 (January–March 1955): 71. See Leo Stoller, "A Note on Thoreau's Place in the History of Phenology," *ISIS* 47 2 (June 1956), S25, Science, cc, series III, Walter Harding Collection, Thoreau Institute, Lincoln, Massachusetts (hereafter WHC).
9. Philip Whitford and Kathryn Whitford, "Thoreau: Pioneer Ecologist and Conservationist," *Scientific Monthly* 73 (November 1951): 291–96; Kathryn Whitford, "Thoreau and the Woodlots of Concord," *New England Quarterly* 23 (September 1950): 291–306.
10. George M. Woodwell, W. M. Malcolm, and R. H. Whittaker, "A-Bombs, Bug Bombs, and Us," in Paul Shepard and Daniel McKinley, eds., *The Subversive Science: Essays toward an Ecology of Man* (Boston: Houghton Mifflin, 1969), 230–39; Linda J. Lear, *Rachel Carson: Witness for Nature* (New York: Henry Holt, 1997).
11. Nina Baym, "Thoreau's View of Science," *Journal of the History of Ideas* 26 (April 1965): 221–34.
12. Oscar Godbout, "On Wheels and in Tents," *New York Times* ("Family Camping" section), March 22, 1964.
13. Roderick Nash, *Wilderness and the American Mind* (New Haven, CT: Yale University Press, 3rd ed., 1982), 84.
14. Michael Frome, "After 50 Years, the American Wilderness Still Stands—in Peril," *New York Times* (Section I), June 2, 1974. See Sigurd F. Olson, "The Preservation of Wilderness in the Space Age," *Appalachia* 28 (December 1962): 198–206.
15. Howard Mumford Jones, "Thoreau and Human Nature," *Atlantic Monthly* 210 (September 1962): 57–59; Paul H. Oehser, "From the Thoreauvian Well," *Living Wilderness* 30 (Autumn 1966): 28.
16. Henry D. Thoreau, *The Maine Woods*, edited by Joseph J. Moldenhauer (Princeton, NJ: Princeton University Press, 1972), 275. See James McIntosh, *Thoreau as Romantic Naturalist: His Shifting Stance toward Nature* (Ithaca, NY: Cornell University Press, 1974), 190; Sherman Paul, "Thoreau, *The Maine Woods*, and the Problem of Ktaadn," in *A Century of Early Ecocriticism*, edited by David Mazel (Athens: University of Georgia Press, 2001), 332.
17. R. D. Richardson Jr., *Myth and Literature in the American Renaissance* (Bloomington: Indiana University Press, 1978), 106.
18. Thoreau quoted in John G. Blair, and Augustus Trowbridge, "Thoreau on Ktaadn," *American Quarterly* 12 (Winter 1960): 510.
19. Thoreau, *Maine Woods*, 70–71.
20. Thoreau, *Maine Woods*, 156. See Bradford Torrey, "Thoreau's Attitude toward Nature," *Atlantic Monthly* 84 (November 1899): 708.
21. Thoreau, *Maine Woods*, 71.
22. Condry, Thoreau, 91. See Philip F. Gura, "Thoreau's Maine Woods Indians: More Representative Men," *American Literature* 49 (November 1977): 369.
23. Joseph Wood Krutch, "Wilderness as a Tonic," *Saturday Review*, June 8, 1963, 17; Gura, "Thoreau's Maine Woods Indians," 373; Stanley A. Tag, "Growing Outward into the World: Henry David Thoreau and the Maine Woods Narrative Tradition, 1804–1886," PhD dissertation, University of Iowa, 1994: 288.
24. See Philip Slater, *The Pursuit of Loneliness: American Culture at the Breaking Point*, rev. ed. (Boston: Beacon Press, 1976).
25. Edwin S. Smith, "A Thoreau for Today II," *Mainstream* 13 (May 1960): 18; Henry Beston quoted in Charles B. Seib, *The Woods: One Man's Escape to Nature* (Garden City, NY: Doubleday, 1971), 4.
26. Tag, "Growing Outward," 277–78. See Kelli Olson, "A Cultural Study of Henry D. Thoreau's *The Maine Woods*," PhD dissertation, University of Iowa, 2000: 95–96, 104–08, 112.
27. Loren Baritz, "The Idea of the West," *American Historical Review* 66 (April 1961): 639; Henry David Thoreau, "Natural History of Massachusetts," in *The Writings of Henry David Thoreau: Excursions and Poems*, edited by Bradford Torrey (Boston: Houghton Mifflin, 1906), 105.
28. Don Scheese, *Nature Writing: The Pastoral Impulse in America* (New York: Twayne Publishers, 1996), 60.
29. John Burroughs, "Thoreau's Wildness," *The Critic*, March 26, 1881, 74.
30. Henry David Thoreau, "Walking," in *Thoreau, The Natural History Essays*, edited by Robert Sattlemeyer (Salt Lake City, UT: Peregrine Smith, 1980), 116; Thoreau, *The Writings of Henry David Thoreau: Journal II*, edited by Bradford Torrey (Boston: Houghton Mifflin, 1906), 236 (hereafter HDTJ.)
31. HDTJ 9, 43; HDTJ 6, 364; Henry David Thoreau, *Walden* (New York: Thomas Y. Crowell, 1910), 165. See J. Walter Brain, "Thoreau's Poetic Vision and the Concord Landscape," in Edmund A. Schofield and Robert C. Baron, eds., *Thoreau's World and Ours: A Natural Legacy* (Golden, CO: North American Press, 1993), 288.
32. Henry David Thoreau, *A Week on the Concord and Merrimack Rivers*, in *The Writings of Henry David Thoreau*, vol. 1 (Boston: Houghton Mifflin, 1892), 54; Don Scheese, "Creation of a Sacred Place," in *Mapping American Culture*, edited by Wayne Franklin and Michael C. Steiner (Iowa City: University of Iowa Press, 1992), 144.
33. Henry David Thoreau, "Winter Walk," in *Thoreau, Natural History Essays*, 55.
34. Thoreau, *Walden*, 377.
35. HDTJ 1, 141.
36. Laura Dassow Walls, "Believing in Nature: Wilderness and Wildness in Thoreauvian Science," in Richard J. Schneider, ed., *Thoreau's Sense of Place: Essays in American Environmental Writing* (Ames: University of Iowa Press, 2000), 15; HDTJ 7, 133.
37. Thoreau, "Wild Apples," in *Henry David Thoreau, The Natural History Essays*, edited by Robert Sattlemeyer (Salt Lake City: Peregrine Smith, 1980), 193.
38. Eliot Porter, *In Wildness Is the Preservation of the World* (San Francisco: Sierra Club, 1962); Brooks Atkinson, "'Place No One Knew' Is Photographic Elegy on Demise of a Western Canyon," *New York Times*, June 11, 1963. See Jacob Deschin, "Porter's Camera Looks at Nature," *New York Times*, July 23, 1967.
39. Joseph Wood Krutch in Porter, *In Wildness*, 9 (first quote), 10, 11 (second quote). See Eliot Porter, *Summer Island: Penobscot Country* (San Francisco: Sierra Club and Ballantine Books, 1976).
40. Sandra Harbert Petrulionis and Laura Dassow Walls, "Afterword," in *More Day to Dawn: Thoreau's Walden for the Twenty-First Century*, edited by Petrulionis and Walls (Amherst: University of Massachusetts Press, 2007), 242.
41. Walter Harding, "Century of Thoreau," *Audubon* 47 (March 1945): 80.
42. Joseph Wood Krutch, "The Wilderness at Our Doorstep," *New York Times Book Review*, June 21, 1953. See Raymond Holden, "Search for the Untouched," *New York Times Book Review*, September 26, 1954.

Labor shortages during World War II compelled the Canadian government to use prisoners of war to meet demands for lumber. For both the government and the POWs, it worked out better than either party imagined.

“FREEDOM IN THE MIDST OF NATURE”

GERMAN PRISONERS OF WAR IN RIDING MOUNTAIN NATIONAL PARK

When Karl-Heinrich Landmann arrived at the new woodcutting camp in a national park in Manitoba, his immediate thought was “freedom.”¹ Captured by British soldiers in North Africa in November 1942, Landmann was one of thousands of German prisoners of war (POWs) transferred to

Canada to await the end of the war. Initially sent to one of Canada’s largest internment camps, Landmann, along with 439 other POWs, was transferred to work in Riding Mountain National Park in October 1943. With no barbed wire fences or guard towers, the remote camp was a most welcome change.

From 1939 to 1947, Canada held approximately 34,000 German POWs, enemy merchant seamen, and enemy aliens in 28 internment camps. Most of these men spent the first years of their internment sitting idle behind barbed wire, but in May 1943, the Canadian government approved the use of POW labor to help boost the struggling agricultural and pulpwood industries. Over the next three years, civilian companies and government projects employed more than sixteen thousand POWs in almost three hundred labor projects across the country.

In early 1943, the country was in the midst of a fuelwood shortage, one expected to worsen during the upcoming winter.

Manitoba was particularly affected, with an estimated shortage of a hundred thousand cords in the southwestern corner of the province alone, and its members of Parliament pleaded with the federal government for help. With alternative workers unavailable, in June 1943 the Canadian government elected to employ German POWs to meet the region’s fuelwood needs.²

Located on the Manitoba Escarpment 200 kilometers (125 miles) northwest of Winnipeg, Riding Mountain National Park covers approximately 3,000 km² (1,150 mi²)—an area slightly smaller than Rhode Island—and comprises boreal forest, eastern deciduous forest, and grasslands. Established in 1929, the park had previously been designated a forest reserve and had a history of providing fuelwood to surrounding areas; poplar in the western half of the park would be sufficient to relieve the province’s fuelwood shortage. The Minister of Mines and Resources approved the proposal to use POWs so long as the men would not be

BY MICHAEL O’HAGAN



A group of German POWs at Riding Mountain. One POW wrote home, “Woods, water, fresh air and healthy work with my comrades and a certain freedom in the midst of nature, that is what I have wanted.”

allowed to roam free,³ but not everyone liked the idea. In a letter to the Parks Bureau, Roy Gibson, the director of the Land, Parks, and Forest Branch of the Department of Mines and Resources, expressed his concerns:

It is now proposed to put German prisoners of war in a valuable national park upon which substantial amounts of public funds have been expended. The number of guards will be reduced to a small fraction of the number heretofore in charge of these prisoners, and the prisoners will not be housed in a flood-lighted barb wire compound. They will be working in the bush where it will be difficult to guard them and where it will be easy for them to start a disastrous fire.

Citing the experience of government programs employing internees in the early war years as well as during the First World War, Gibson did not believe POWs could be relied on.⁴

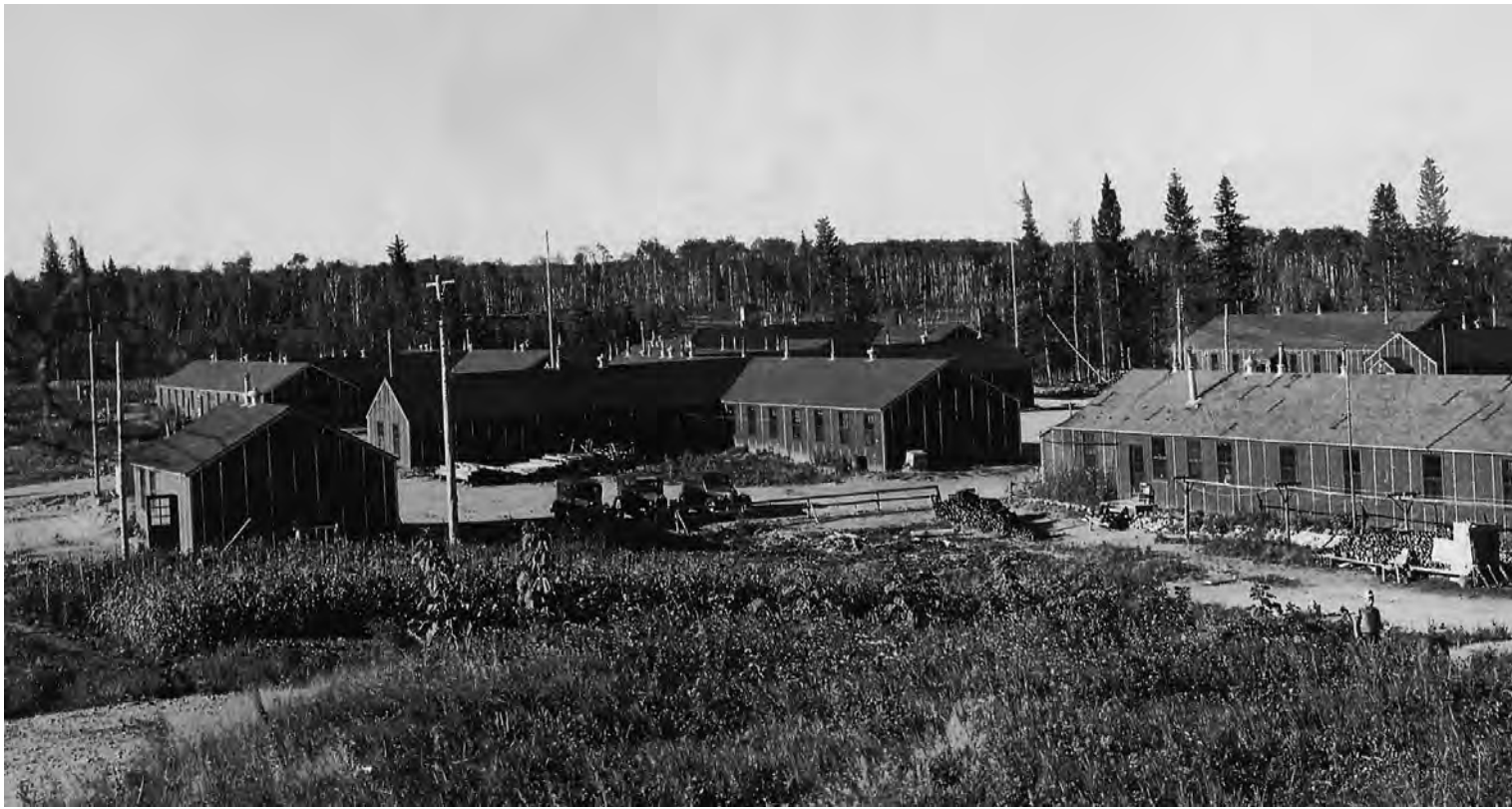
Despite concerns, the Department of Labour approved the project, and preparations began immediately. The timber controller selected a site on the northeastern shore of Whitewater Lake expected to yield an estimated two hundred thousand cords, and construction began in August.⁵ When completed, at an estimated cost of \$225,000, it was the largest and most expensive woodcutting camp in the country.⁶ It had fifteen buildings—three POW bunkhouses, a staff bunkhouse, two guards’ bunkhouses, a cooks’ bunkhouse, a kitchen and mess hall, an administration building, a barn, a garage, workshops, a powerhouse, a recreational hall, and a small hospital—plus running water, electricity, and sewage disposal, prompting one forestry employee to remark that living conditions there were better than those provided by

the Department of Mines and Resources to its own employees.⁷

Camp administration fell to Wartime Housing, Ltd., a Crown corporation, but the project also involved the Department of Labour, the Department of National Defence, and the Parks Bureau. In all, the camp employed some 175 military and civilian personnel, including guards, accountants, clerks, instructors, supervisors, and teamsters. Forty-five civilian guards provided security at both the camp and the worksite, and this force was supplemented by a small detachment from the Veterans’ Guard of Canada. Composed almost entirely of First World War veterans deemed too old for overseas service, the Veterans’ Guard was responsible for policing unruly POWs, maintaining discipline, handling mail, and providing escorts.⁸

The project relied on the dense Canadian woods and remote location to contain the POWs. With the nearest park boundary or civilian roadway ten kilometers away, the Department of Labour believed the camp sufficiently isolated to prevent POWs from making contact with civilians or escaping.⁹ Camp boundaries were marked only with red flags or blazes. Since most POWs had spent the previous year or more behind barbed wire, military authorities hoped they would work hard and not risk losing their newfound freedom by venturing beyond camp bounds.

The 440 POWs, nearly all veterans of the North African campaign, arrived from the base camp at Medicine Hat, Alberta, on October 26, 1943. All volunteers, 400 received woodcutting tools, and Wartime Housing expected them to cut and stack three-quarters of a cord per man per day. The remaining 40 were to assist with the day-to-day operation of the camp, working as clerks, medical orderlies, cooks, tradesmen, and in one case, a gardener. Each POW received fifty cents per working day and could spend



The Riding Mountain Park Labour Project had fifteen buildings—and no barbed wire fences.

these earnings in the small canteen, which stocked items such as tobacco, toiletries, candy, and soda.

The first large-scale POW woodcutting operation in the country, and with more than four hundred POWs allowed to move freely around the camp, the labor project was destined to encounter difficulties. But no one imagined it would happen so soon. Five days after their arrival, on October 31, 1943, nineteen POWs used their first day off to explore their new surroundings. As light snow began to fall late that afternoon, the POWs realized they had gotten lost, and as the snow became heavier, their tracks disappeared. While the lost men hunkered down for the night, the guards scrambled to find them.

Snow hampered initial searches, but the following morning, as guards, camp staff, and police scoured the area, some of the missing POWs wandered back to camp, cold and hungry. By the afternoon, all missing men were accounted for. Refuting accusations of escape, each man asserted they had lost their bearings while hiking.¹⁰ Local papers described the incident as the second-largest escape in the country, but camp staff agreed there was no motive for escape and released the men for work.¹¹

Regardless of the actual circumstances, the incident emphasized concerns about the considerable freedom enjoyed by POWs at Riding Mountain. Although each POW promised never to go beyond the camp bounds again, a more effective deterrent came not from camp staff or guards but from fellow POWs. Hoping to appease military authorities while ensuring they remained at Riding Mountain, POWs scheduled the nineteen errant men for a “hiding” (beating for punishment) but were prevented by doing so by the camp translator, who assured them this was both unnecessary and misguided.¹²

This incident demonstrated the value POWs placed upon the opportunity to live and work in relative freedom. Most enjoyed

their new life at Riding Mountain, as is evident from their correspondence, which was translated and reviewed by censors. In a letter home, one POW reassured a loved one not to worry for, as he described, “Woods, water, fresh air and healthy work with my comrades and a certain freedom in the midst of nature, that is what I have wanted.” His only regret was having failed to persuade a friend to volunteer with him. Compared with barbed wire fences, the forest was, as one POW described, a “real treat for the eyes.” Another remarked on how life at Riding Mountain was much better than that in an internment camp: “There is no barbed wire around our camp, and what that means can only be appreciated by one who has spent two years behind it.”¹³

It was not only their freedom that the POWs valued but also the opportunity for work. The monotony of life in an internment camp affected both physical and mental health, and many saw work as a potential cure. As one POW explained, “You cannot imagine how I felt when after three years I saw a forest again. To wander through the woods and to once again have real work before me was something divine.” Another informed his family, “[Work] makes muscles and is good for the body; also, one does not have so much time for brooding and the day passes more quickly [sic].”¹⁴

To prevent unrest in off-hours, the Department of Labour, Wartime Housing, and international aid organizations, notably the War Prisoners’ Aid of the YMCA and the International Committee of the Red Cross (ICRC), provided recreation and entertainment. In the rec hall, POWs had access to a piano, Ping-Pong tables, dart boards, card tables, writing tables, and a radio, where English-speaking POWs could often be found translating the latest news of the war for their comrades.¹⁵ Many POWs chose to spend their free time reading, painting, building models, working at handcrafts, improving their education, or putting on musical and theatrical performances for fellow POWs and camp staff.



The camp's surroundings provided abundant opportunities for those interested in the park's natural amenities. With hundreds of game trails and prewar logging roads throughout the area, not to mention the wildlife, hiking and exploring became a popular pastime. Herbert Kurda told his family he could walk in the forest without guards, and Erich Lamer wrote, "I often take walks to spy on the many wild animals, for such a sight is not offered to every European."¹⁶ In letters to his parents in Germany, Karl Kappel fondly described wandering through the dense, untouched forest and enjoying his quiet and peaceful surroundings while occasionally spotting deer, elk, moose, bears, and wolves.¹⁷

Animals were also common in the camp. With the help of civilian employees and the park warden, several stray dogs and cats were adopted by the prisoners and were prominently featured in group photographs. The most notable pet was a black bear cub captured by a group of POWs while hiking. Quickly adopted as the camp mascot, the bear was popular not only with POWs, one of whom fondly referred to it in a letter to his parents as "our good and faithful camp-bear," but with guards and camp staff as well.¹⁸

Prisoners were also quick to take advantage of the proximity to Whitewater Lake. After seeing a birchbark canoe on the cover of a magazine circulating through camp, some POWs tried their hand at building their own boats. Lacking the requisite tools and experience, they ultimately carved dugout canoes from large spruce and poplar logs and paddled around the lake under the supervision of their guards.¹⁹

While most were content with remaining within camp bounds, some POWs ignored the guards' orders and, after hearing about nearby settlements, set out to find them. In January 1944, rumors reached camp that POWs were roaming beyond park boundaries and fraternizing with civilians. Fearing that the farmers south of the park, who were predominately immigrants from Eastern Europe, would help POWs escape and provide them with clothing,



The "good and faithful camp-bear," with the translator and one of the guards.



A POW sits in a dugout canoe. Access to Whitewater Lake afforded POWs even more freedom, though guards did monitor their boating.

food, and maps, the guards and police began patrolling local communities. Their efforts were soon rewarded when, in February, guards apprehended several POWs beyond the park boundaries.

Camp staff soon discovered that POWs were leaving camp after the evening roll call, using money earned from the illicit sale of woodcrafts to pay admission to local dances, and returning to camp before morning roll call. Further information about POW exploits south of the park came when censors seized a POW diary.²⁰ Written by Konstantin Schwarz, a self-identified Nazi, the diary revealed that Schwarz and his comrades used homemade compasses to explore the area and make contact with civilians. The POWs had made friends with some farmers, many of whom had been given marginal land and therefore resented Canadian and British-born residents.²¹

With POWs in the countryside, it came as no surprise when other residents began voicing concerns. After the camp doctor was spotted in the nearby town of Dauphin under “very loose courtesy custody,” local newspapers protested this “preferred treatment” provided to POWs at Riding Mountain.²² The story made its way to the House of Commons, where a member of Parliament criticized the use of POW labor and said the camp’s so-called security measures were an insult to the families of those in uniform. The minister of National Defence assured everyone he did not approve of the POWs roaming free but emphasized that any restrictions on their freedom would likely result in a drastic reduction of production.²³

Anticipating more frequent visits to nearby settlements during

the summer months, camp staff introduced new measures to prevent POWs from leaving camp. Eliminating any ambiguity about camp boundaries, the guards clearly redefined the woodcutting area and warned that any POWs found out of bounds would face punishment.²⁴ Guards also introduced new patrols, erected warning signs, and staffed a small guardhouse near the camp entrance to turn away unauthorized visitors.²⁵

Hopes for productivity notwithstanding, in the initial months of operation, POWs were producing only two-thirds of a cord per man per day. Given that civilian workers could produce two cords per man per day, the wood fuel controller saw no excuse for the low rates. He recommended that military personnel replace the civilian guard force and provide the discipline required to increase production.²⁶ Describing current woodcutting operations as “most primitive and uneconomical,” his office also recommended that the camp follow the same practices as civilian operations.²⁷

On June 17, 1944, the Department of Labour took over all responsibility for the project and agreed to produce ten thousand cords of fuelwood by March 31, 1945.²⁸ The changeover was partly due to reduced demand for fuelwood, but the department also believed the camp needed a complete overhaul to boost production. The camp was downsized to two hundred men and the civilian guards replaced by men from the Veterans’ Guard of Canada. The takeover proved successful; by October 1944, the POWs had met their quota, and guards had succeeded in drastically reducing fraternization with civilians.²⁹



Located in southern Manitoba, the POW camp was about 160 miles (258 kilometers) northwest of Winnipeg as the crow flies.

Despite the visits to local communities, there were remarkably few escape attempts. The exception was Hans Weis. Weis first caught the guards' attention when he was found with two letters, both written by civilians, in his possession. But this was only the beginning. On November 22, 1944, Weis left camp and, proceeding south of the park boundary, purchased a train ticket to Winnipeg with money obtained from the sale of woodcrafts to camp employees and civilians.³⁰ Police eventually arrested him in Winnipeg four days after his escape, and military authorities transferred him to an Ontario detention facility for twenty-eight days of discipline.³¹ However, after returning to camp after Christmas, Weis stole a truck and made his way to the nearby town of Dauphin. This escape was cut short when two guards, both on leave, discovered Weis eating at the local bar and promptly took him into custody. After three months of discipline, Weis returned to camp only to be sentenced to fourteen days in the Dauphin jail for auto theft, after which he was transferred back to Medicine Hat.³²

In January 1945, military authorities selected the Riding Mountain camp as a testing ground for its new political classification system, PHERUDA. Intended to identify POWs' political attitude and determine their suitability for labor, the program examined a man's (P)olitical outlook, attitude towards (H)itler, (E)ducation, (R)eligious beliefs, (U)sefulness, (D)ependability, and (A)ttitude toward the Allies. Two intelligence personnel

interviewed each POW, and the results determined a man's classification: Black for pro-Nazis, White for anti-Nazis, and Grey for those in between.³³

Although unable to uncover any "Gestapo-like" activity, the interviews identified sixteen "Black" Nazis. Anti-Nazi POWs were also used as informers to identify troublemakers and pro-Nazis, who were then recommended for transfer out of concern for their reactions in the event of Germany's capitulation. One intelligence officer observed that the Whites and Greys enjoyed the privileges at Riding Mountain and did not want to be transferred to an internment camp.³⁴ However, after working in the bush for more than a year, many welcomed the possibility of farmwork.

Woodcutting operations ceased in Riding Mountain on March 31, 1945, by which time Manitoba had a fuelwood surplus. Although camp staff received applications from fifteen or twenty local farmers seeking POW labor, increasing demand for labor in Ontario bush camps prompted the transfer of most prisoners to other labor projects, leaving only forty POWs by the end of May. Unable to secure sufficient work for the remaining men by August, the Department of Labour closed the project. Because the buildings were too remote for use by the Parks Bureau, the Department of Labour handed the project over to the War Assets Corporation for termination, and demolition began September 1.³⁵ On October 10, 1945, the last ten POWs left Riding Mountain National Park.³⁶

The Parks Bureau allowed the site to return to its natural state, leaving little trace of the 440 POWs who spent almost two years of the war in the backcountry of Riding Mountain National Park. Although popular and local narratives of the camp have depicted a sort of *Hogan's Heroes* scenario, this was not the case. The camp generally succeeded in encouraging the men to work hard and avoid trouble. Despite mosquitoes, harsh weather, and the occasional lost toe or finger to frostbite or accident, POWs preferred life at Riding Mountain to that of a high-security camp and took it upon themselves to cooperate and protect their relative freedom in a near-wilderness environment. □

Michael O'Hagan is a PhD candidate at Western University in London, Ontario. His dissertation examines German POW labor projects in Canada during the Second World War.

NOTES

1. Author's Correspondence with Karl-Heinrich Landmann, July 29, 2012.
2. C. D. Howe to T. A. Crerar, June 8, 1943, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, Library and Archives Canada (LAC).
3. T. A. Crerar to C. D. Howe, June 10, 1943, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, LAC.
4. R. A. Gibson to Mr. Spero, June 8, 1943, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, LAC.
5. R. A. Gibson to J. S. Whalley, June 23, 1943, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, LAC.
6. "War Prisoners in Riding Mountain to Cut Fuel Wood," *Dauphin Herald*, November 4, 1943.
7. Controller to Mr. Gibson, October 13, 1943, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, LAC; "War Prisoners in Riding Mountain to Cut Fuel Wood," *Dauphin Herald*; G. Tunstell to the Dominion Forester, June 29, 1944, U165-7, Riding Mountain National Park, Prisoners of War, 1943–1948, vol. 165, T-12923, RG84, LAC.
8. Col. R. James to Mr. V. T. Goggin, November 5, 1943, Orders and Inspections Concerning PoW Procedure, vol. 966, RG27, LAC; T. Hislop to Brigadier R.A. MacFarlane, D.S.O., September 15, 1943, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
9. Lt.-Col. R. S. W. Fordham to A. MacNamara, October 4, 1943, Prisoners of War, General Correspondence, 1942–1944, File 611.1:21, Pts. 1-2, vol. 156, T-10128, LAC.
10. Sergt. F. H. Bebb, "Karl Keller et al. German Prisoners of War, Internment Camp, Whitewater Lake, Riding Mountain National Park, Manitoba, Alleged Escapes," November 3, 1943, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
11. "19 Nazis Back after Escape," *Winnipeg Tribune*, November 1, 1943.
12. Lieut. J. J. Zubick, "Intelligence Report: Mood and Morale," November 30, 1943, HQS 7236-94-6-132, Intelligence reports, Medicine Hat, C-5416, RG24, LAC (C5416_4123).
13. Canadian Postal Censorship, "Report on Prisoner of War Lumber Camps," July 13, 1944, HQS 7236-34-3, Department of Labour, Work Projects Policy, C-5380, RG24, LAC (C5380_3360); Zubick, "Intelligence Report: Mood and Morale."
14. Zubick, "Intelligence Report: Mood and Morale."
15. "Riding Mountain Camp," no date, Conditions of Employment of PoWs, vol. 965, RG27, LAC; Ludwig Carbyn, "Interview with Mr. George Foerster," April 1985, RMNP Collection.
16. Canadian Postal Censorship, "Report on Prisoner of War Lumber Camps," July 13, 1944, HQS 7236-34-3, Department of Labour, Work Projects Policy, C-5380, RG24, LAC (C5380_3360).
17. Karl Kappel to Kappel Family, November 5, 1943, and May 9, 1944, Private Collection.
18. Celes Davar, POW Interview with Josef Gabski, September 11, 1991, RMNP Collection; Censorship summary of letter from O'Gefr Gerhard Ribbe to family of Ernst Ribbe, August 25, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC; Statement of Major J. H. Keane, Camp Administrator, no date, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
19. Teresa Tabulenas, "Whitewater Lake Prisoner of War Camp," 1978, RMNP Collection; "Information Obtained from Diary Written by P/W Uffz. Konstantin Schwartz No. 36444, at Riding Mountain Park," June 16, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC; Maj. J. H. Keane to Camp Spokesman, September 7, 1944, Orders and Inspections Concerning PoW Procedure, vol. 966, RG27, LAC.
20. Col. R. H. James, "Report on Traffic of Prisoners-of-War, with Ukrainian Civilians," February 21, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
21. "Information Obtained from Diary."
22. "Protest," *Dauphin Herald*, February 3, 1944.
23. Draft of letter from Minister of National Defence to Mrs. L. W. Smith, no date, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
24. Wartime Housing Ltd., "Camp Boundaries," April 24, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
25. Brig. R. A. Macfarlane to Secretary, Department of National Defence, May 3, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC; Lieut. C. Mann to Lieut. Col. H. P. Rocke, April 23, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
26. J. S. Whalley to J. G. Fogo, January 26, 1944, Prisoners of War, General Correspondence, 1942–1944, File 611.1:21, Pts. 1-2, vol. 156, T-10128, LAC.
27. R. H. Candy, "Report on Riding Mountain Prisoner of War Camp, Manitoba," February 29, 1944, File 44962, Use of Prisoners of War, vol. 463, RG39, LAC.
28. Maj. A. F. Kemble, "History of Labour Projects PW," p. 15, History, Major A. F. Kemble, vol. 965, RG27, LAC.
29. D. A. M. to Mr. Smart, July 4, 1944, File 44962, Use of Prisoners of War, vol. 463, RG39, LAC.
30. Statement of PW 052317 Weis, Hans, Riding Mountain Park Labour Project, no date, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
31. Col. H. N. Streight to Director of Labour Projects PW, Department of Labour, December 29, 1944, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
32. Insp. J. M. Bella, "Hans Weis, #032311, Prisoner of War, Riding Mountain National Park Prisoner of War Camp, Section 377, C.O. Theft of Motor Car," January 18, 1945, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
33. Lt. Col. Christopher Kilford, *On the Way! The Military History of Lethbridge, Alberta (1914–1945) and the Untold Story of Ottawa's Plan to De-Nazify and Democratise German Prisoners of War Held in Lethbridge and Canada during the Second World War* (Victoria, BC: Trafford Publishing, 2004), 142–43.
34. Lt. E. Davidson, "Report on Visit to Riding Mountain Camp, Manitoba," February 15, 1945, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.
35. Kemble, "History of Labour Projects PW."
36. Brig. R. O. G. Morton to Secretary, Department of National Defence, October 11, 1945, HQS 7236-34-3-9, Department of Labour Work Project, Riding Mountain Park, C-5382, RG24, LAC.

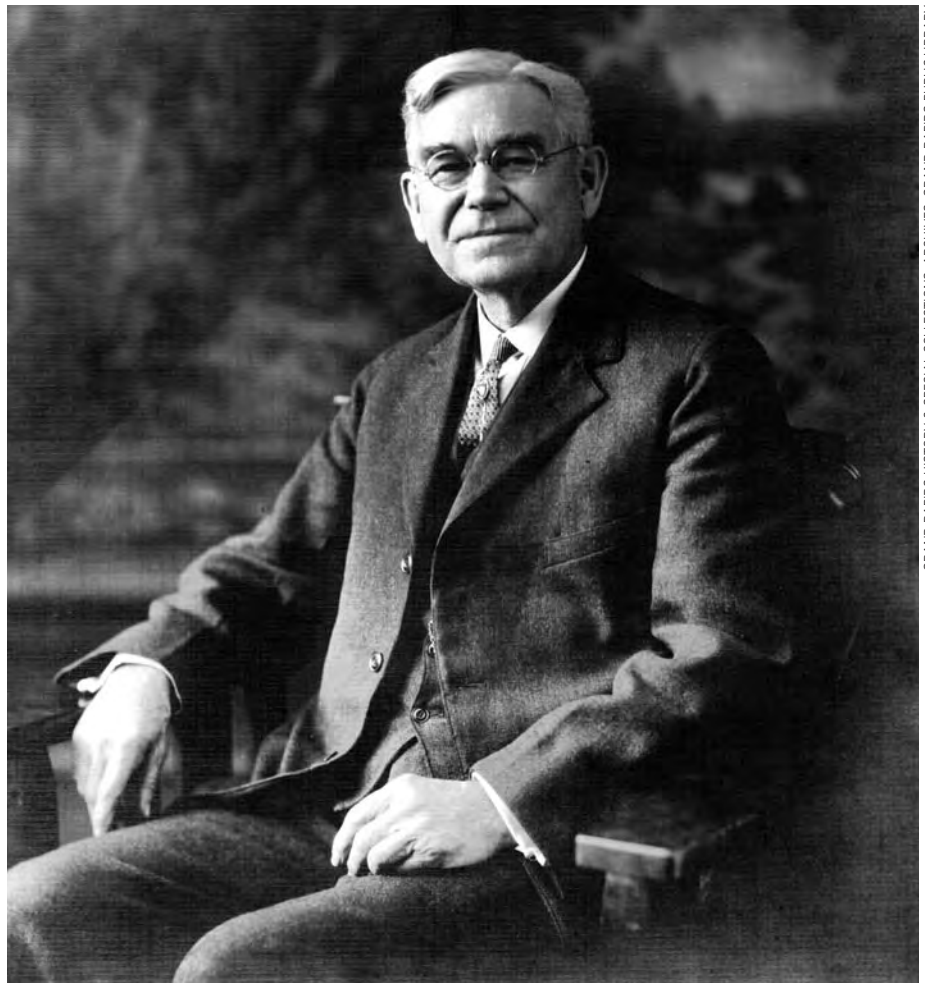
Biographical Portrait
CHARLES WILLIAM GARFIELD
(1848–1934)

LOVER OF TREES AND PEOPLE

By Joseph J. Jones

In 1913 journalist Ida M. Tarbell visited Grand Rapids, Michigan, to learn about its parks and playgrounds, which were said to be “within a half mile of every child in town.” Instead, she wrote of Charles W. Garfield, whom she called the “first citizen of Grand Rapids.”¹ Garfield had a “passion for trees,” she wrote, that served as the impetus for his conservation activity. He “knows [trees] and loves them more than most of us do people, and all his life he has made it his business to fight for them.”² Although Garfield’s love of trees was Tarbell’s hook, her actual point was that his forty-year passion for conservation was just one expression of his overriding goal of creating a great city for everyone. He changed the city and state not through political wrangling, economic inducement, or social strong-arming but by exuding an enthusiasm that generated cooperation for the health, beauty, and conservation of people, resources, and nature. Garfield’s practice of seeking and honoring such cooperation made him beloved, but it also set an example that made Michigan one of the most cooperative places for reforestation, public lands and parks, and country and city life in the nation.³

Charles William Garfield was born in a log cabin in Wauwatosa, Wisconsin, on March 14, 1848, to S. Marshall and Harriet Garfield.⁴ Marshall, a farmer and sawmill superintendent, taught his son the importance of trees at an early age. One of Charles’s earliest memories was planting a honey locust in the front yard with his parents. On a visit to Michigan when Charles was eight, their stagecoach stopped outside the village of Martin, which gave the family an opportunity to view the



GRAND RAPIDS HISTORY & SPECIAL COLLECTIONS, ARCHIVES, GRAND RAPIDS PUBLIC LIBRARY

largest black walnut tree in the state. When standing before the ten-foot-diameter trunk, Marshall told Charles to remove his hat to honor the “noble tree.” After the family relocated to the Grand Rapids area when Charles was ten, a common family outing was to travel to a pine grove considered by Marshall as “holy ground” and listen to the wind in the trees. The consis-

tent emphasis on a love of trees affected Charles greatly, and promoting forest concerns became the focus of his life’s work.⁵

After moving to Michigan, his father purchased a portion of Burton Farm, located two and a half miles south of downtown Grand Rapids and one of the oldest farms in Kent County. For the rest of his life Charles’s permanent residence

was on or near the farm. The Garfields grew a variety of crops on Burton Farm, but arboriculture was practiced from the outset as Marshall and Charles planted orchards and shade trees near the house. As an adult, Charles broadened to silviculture experiments of forest and ornamental trees. His experiences with farming and horticulture fueled his interest in other sciences. As a student at Grand Rapids Central High School, Charles and other students founded the Kent Scientific Institute to display natural history specimens.⁶ In 1870, he graduated from Michigan Agricultural College (MAC, now Michigan State University) with a bachelor's degree in geology with the intention of becoming a teacher. However, the poor physical health that would disrupt many of his life plans prompted him to initially select an outdoor career instead, in keeping with the accepted medical beliefs of the day.

In 1871, Garfield began working in Painesville, Ohio, at the Storrs & Harrison Nursery, a growing national supplier of ornamental shrubs, trees, and perennials. Even though his own nursery failed in the severely cold winter of 1872–1873 (which nearly ruined Storrs & Harrison), he was hired to tend the gardens of MAC. During his four years there, he earned a master's degree and became one of the foremost horticulturalists in the state. He was a founder and secretary of the State Horticulture Society, a position that later gave him considerable influence in the forest conservation movement. He developed the first promotional exhibits and advertising campaigns for Michigan fruit. He became agriculture editor of the *Detroit Free Press* and was a regular contributor to state newspapers—an activity he would continue throughout his life. Taken as a whole, this work made Garfield nationally prominent in horticulture. Numerous colleges (most notably Cornell) offered him the position of department chair, and Republican politicians considered him for the federal post of secretary of Agriculture. However, his father's death in 1877 and his desire to care for his mother led him to return to Grand Rapids and reject these and other offers for significant national positions over the next forty years.⁷

Garfield served as a representative to the Michigan legislature in 1880–1881, a seat his father had held for two terms in the early 1870s. Forestry was at the core of the bills he introduced, and his views were ahead of their time. He proposed tax credits for



AMERICAN MAGAZINE VIA HATHITRUST.ORG

Ida Tarbell's article about Garfield featured this photo of him. The caption states in part, "He wants to make Grand Rapids the finest place in the world to live in."

property owners who planted and cared for shade trees along public highways, for example. He also attempted to establish the first state forestry reserve, encompassing sixteen townships in Roscommon and Crawford counties, based on a large land donation by lumberman Delos Blodgett. His resolution recognizing Arbor Day in the state was his only conservation bill approved by the legislature. It would be another two decades, however, until his forestry advocacy began to bear fruit.⁸

After his term with the legislature, he returned to Burton Farm and managed

it until it was subdivided for homes in 1904. His primary source of income was finance: he served as director, president, and chairman of the board at Grand Rapids Savings Bank, which his father had founded. His work at the bank enabled working-class citizens to improve their financial situation and purchase homes.⁹ Yet Garfield's true calling was advocating for Michigan's forests.¹⁰ In August 1882, he attended a meeting of the American Forestry Congress (later the American Forestry Association), which expanded his ideas regarding

forestry in Michigan. His first major publication—"The Forestry Problem," written for the 1886 State Horticulture Society annual report—reflected two years of research. Lumbermen, he wrote, did not care about the effects of forest removal, but other citizens must. He described prevailing notions regarding the effects of forests on climate, flooding, and health. He also provided suggestions on how to grow and transplant trees and curb tree destruction, and instructed readers on proper timber-cutting methods to maximize returns while ensuring regrowth. He concluded by urging that fires and waste of timber resources be prevented to ensure national prosperity.¹¹

His political connections and work as secretary of the State Horticulture Society resulted in the 1887 creation of the state's Forestry Commission, which Garfield codirected with William Beal, a MAC botanist. The commission investigated the forestry situation in Michigan and identified land that might be suitable for a forest reserve, but its most significant act was a botanical expedition across northern Michigan in 1888. With Garfield unable to travel because of illness, Beal took Liberty Hyde Bailey, his former horticulture student and fellow faculty member. (Garfield no doubt approved the choice: he had encouraged Bailey to study at MAC. Bailey returned the favor by dedicating his 1911 volume *The Country-Life Movement in the United States* to Garfield.¹²) The two identified new plant species, potential agricultural products for the region, and several sites for forest experiments.¹³

Garfield continued using the Horticulture Society to assert his forestry goals. He led a session at its 1890 meeting on the value of forests for farming and the need for a state forest reserve.¹⁴ Although budget cuts by the legislature the following year eliminated the commission, the impetus toward forestry had begun. It would gain momentum over the decade because of pressure from the Horticulture Society and from the rise of progressive politics. At one society meeting, Beal showed his progressive sentiments (and sarcastic wit) when advocating for a permanent forestry commission, asserting that only in such a "free country" would the government let individuals abuse their own land in ways that could harm their neighbors through fire and erosion.¹⁵ At subsequent meetings, representatives from the state colleges, women's clubs, sportsmen's organizations,

and the state game commission began speaking in favor of forestry.¹⁶ This broad-based coalition, combined with an improved economic picture in the state, persuaded the state legislature to establish a new forestry commission in 1899. It was charged with establishing public education in scientific forestry and identifying tax-reverted and public domain land for state forest reserves under scientific management. Garfield served as president of the three-man commission until it was reorganized as part of the Public Domain Commission in 1909.¹⁷

As commission president, Garfield was involved in every facet of forestry politics and action in the state. He argued that the legal problems of forestry were more pressing than the scientific ones. Timber theft, land titles, taxation, and fire needed legislative action and law enforcement before the principles of scientific management could be implemented and embraced by landowners and citizens. He explained these concerns in letters, speeches, and essays to state supporters and opponents, as well as a national audience. In a direct appeal to Michigan citizens, Garfield urged them to become active in reforestation, which, he said, would contribute to the state's prosperity by providing wind breaks, preventing erosion, and conserving water for farmers and could make lumbering in northern Michigan "a permanent business." His argument did not solely rest on political, scientific, and economic arguments; Garfield included moral appeals from his pastor at Park Congregational Church in Grand Rapids, who specifically cited Ezekiel 31 from the Old Testament to warn that the destruction of life comes from the waste of resources.¹⁸ For Garfield, forest conservation went back to the lessons he learned as a child.

To get results on the ground, Garfield united federal foresters, academic experts, and journalists with state officials to assess northern Michigan. At Garfield's direction, in 1901 state land commissioner William French withheld cutover land in Roscommon and Crawford counties from sale for testing of scientific management procedures. The following summer in Lansing the forestry commission hosted the annual meeting of the American Forestry Association. The highlight of the conference was a field trip to this experimental reserve. The resulting national and state publicity built support for the reserve but

generated opposition from local residents who saw the forest reserve as a threat to their boosterism efforts. Garfield's response defined Michigan conservation politics for decades. Rather than conceding or asserting state authority, Garfield chose to meet with reserve opponents and in 1903 negotiated a compromise on its borders and purpose. These actions broadened support for the reserve and set the stage for the state's approach to reforestation politics until the mid-twentieth century.¹⁹

Garfield also campaigned for establishing college forestry programs and a state forestry association. As a lifelong advocate of the land-grant education model, Garfield initially thought that MAC would provide the best site for scientific forestry education. However, college officials felt that the school should serve state farmers and considered the botanical study of trees and the agricultural application of those studies as the college's only role in forestry. Garfield, preferring to train professional foresters who could assist the commission's efforts, appealed to the University of Michigan, which then hired former federal forester and Cornell professor Filibert Roth as the first permanent forestry chair. MAC hired its own forestry professors. Within a few years, the University of Michigan was training professional foresters and implementing the policies of the state commission, while MAC taught forestry as adjunct to agricultural education. The result was increased public and professional education and support for forestry in the state.²⁰

Recognizing the limits of the forestry commission, Garfield wanted a citizens group that could be an effective advocate. With other forest conservation supporters he formed the Michigan Forestry Association, which held its first meeting on September 29–30, 1905, in Grand Rapids at Ryerson Library and Park Congregational Church. Though he distanced himself from its leadership and activities while on the forestry commission, the association clearly followed Garfield's lead regarding state action. For several years, the association published a periodical for advocacy and public education. When the association launched a drive to increase membership to reinvigorate itself in 1923, its leaders contacted Garfield for his support and blessing in their endeavor.²¹

In addition to his state work, Garfield also served the interests of the residents of Grand Rapids, then a city of 115,000. It was this work that would bring Ida

Tarbell to town in 1913. His efforts increased green and open spaces, as well as playgrounds and ball fields, throughout the city, including in working-class neighborhoods. As Tarbell noted, to children he was known as the “playground man”; homeowners called him the “tree man.”²² As such, these civic conservation activities defined how he presented himself and how the public knew him.

In 1906, he and his cousin Julia Fletcher donated the land for the Garfield-Fletcher Playground on the site of the family’s portion of Burton Farm. Twelve years later, Garfield added 15 more acres, including the nearby six acres of Burton Woods, with the native trees he had raised from seeds. In recognition of this gift, the city renamed it Garfield Park.²³ He organized the Grand Rapids Citizens League to counsel city management.²⁴ He organized the Playground and Recreation Association of America’s annual meeting in Grand Rapids in October 1916. He chaired the city’s Planning Commission from 1919 to 1929, focusing on expanding the park system. Upon construction of Alger School, a local public elementary school, he visited the students often and encouraged them in their studies and sponsored their garden and museum.²⁵ Even in his last year of life, he was an honorary member of the Better Government League—though he could not attend the meetings, he always sent a letter of greeting and support.²⁶

For all of his service to the city and state, numerous groups feted Garfield late in life. MAC granted him an honorary doctoral degree in law in 1917. The Boy Scouts planted trees in city parks in 1924 in his honor. A testimonial dinner with twelve hundred invited guests was held on December 17, 1924, at the Pantlind Hotel. E. A. Stowe, the long-time editor of the *Michigan Tradesman* journal, published articles honoring Garfield in November 1927 as a surprise for his friend of nearly sixty years. In 1929 the Grand Rapids Rotary Club honored him as a “public-spirited citizen” known for being “lovable, loyal, reverent, charitable, clean, wholesome, winsome, modest, and helpful.”²⁷

After his death from heart disease on September 9, 1934, the honors to Garfield continued. His cremated remains were placed under his favorite sycamore in Garfield Park and marked with a simple stone and plaque.²⁸ Michigan State College dedicated an issue of its alumni magazine to Garfield, with heartfelt remembrances



The remains of Charles and Jesse Garfield were placed under his favorite sycamore in Garfield Park and marked with a simple stone and plaque.

from friends on how he had shaped their lives. The contributors stressed Garfield’s goodness and commitment to others as influencing their views on nature and humanity.²⁹ On February 12, 1938, Boy Scouts from throughout the city marched to his grave in Garfield Park to honor his work for the children of the city.³⁰

Garfield is important to forest history not so much because of the scope of his

work but for the model he provided in obtaining results that benefited both trees and people. Stowe summarized the importance of his thought and work: Garfield recognized talent and opportunities, organized civic work for the present and future, and trained his contemporaries and successors in his methods of cooperative problem solving.³¹ The results were conservation programs in Grand Rapids and

COURTESY OF THE AUTHOR

throughout Michigan that united individuals and groups at local, state, and national levels in creating forests and parks and promoting land and resource management—all gifts to the people of the state today. □

Joseph J. Jones holds an interdisciplinary PhD from Michigan State University. He last wrote for *Forest History Today* in 2011 about the establishment of national forests in Northern Michigan.

NOTES

I would like to thank the staff of the Grand Rapids History and Special Collections at the Grand Rapids Public Library who tracked down various photographs, collections, and volumes that inform this article. Most of the articles from Grand Rapids publications are available in the Charles W. Garfield biographical file located in the library's vertical files.

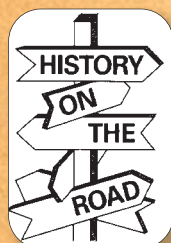
1. Ida M. Tarbell, "Charles W. Garfield," *American Magazine* (March 1914): 62–65.
2. Tarbell, "Charles W. Garfield," 62.
3. Tarbell, "Charles W. Garfield," 64; E. A. Stowe, "The Late Charles W. Garfield," *Michigan History Magazine* 19, no. 1 (Winter 1935): 51–63.
4. Samuel Marshall Garfield was called Marshall by his contemporaries but Samuel by Charles's biographers. I am using the name his friends used.
5. Charles W. Garfield, "Learned to Love Woods," *Michigan Tradesman* (September 12, 1900): 44, 46, 48; "Death Claims Charles W. Garfield," *Grand Rapids Herald*, September 10, 1934; Stowe, "The Late Charles W. Garfield," 52–55.
6. The Kent Institute was the forerunner of the Grand Rapids Public Museum. Allen G. Miller, "Charles W. Garfield," *Spokes o' the Wheel*, March 14, 1929; Stowe, "The Late Charles W. Garfield," 55–56. *Spokes o' the Wheel* was the periodical of the Grand Rapids Rotary Club.
7. "Charles W. Garfield—A Biographical Sketch," *Annual Report of the Secretary of the State Horticulture Society of Michigan, 1895* (Lansing: Robert Smith Printing, 1895), 40–53; "Death Claims Charles W. Garfield"; Glen O. Stewart (ed.), "A Tribute to Charles W. Garfield—Most Beloved Alumnus," *Michigan State College Record* 40, no. 1 (September 1934).
8. "Death Claims Charles W. Garfield"; Dave Dempsey, *Ruin & Recovery: Michigan's Rise as a Conservation Leader* (Ann Arbor: University of Michigan Press, 2001), 52.
9. "Men of Mark: Charles W. Garfield, President Grand Rapids Savings Bank," *Michigan Tradesman*, January 23, 1901: 6, and "Men of Mark: Charles W. Garfield, President Grand Rapids Savings Bank," June 4, 1902: 9; Tarbell, "Charles W. Garfield," 65. *Tradesman* had a regular feature called "Men of Mark." These two articles have the same name and neither had an author credit. However, they are not the same article, nor are they a continuation of one another.
10. Letter from Charles W. Garfield to Kenyon L. Butterfield, October 7, 1904, Charles W. Garfield (1) folder, Box 3, Kenyon L. Butterfield Papers, Library of Congress (hereafter cited as Butterfield Papers).
11. Charles W. Garfield, "The Forestry Problem," *Annual Report of the Secretary of the State Horticulture Society of Michigan, 1886* (Lansing: W. S. George, 1886), 60–128.
12. *The Country-Life Movement in the United States* (New York: Macmillan, 1911), dedication page. Bailey called Garfield a "seer of visions, prophet of the better country life."
13. William J. Beal, "Report of the Independent Forestry Commission" and "Report of the Botanist," *1888 State Board of Agriculture Report* (Lansing: Thorp & Godfrey, 1888), 69–135, 171–93; Joseph J. Jones, "Good for a National Cemetery: Questions of Land Use and an 1888 Botanical Expedition across Northern Michigan," *Agricultural History* 83, no. 2 (Spring 2009): 174–200.
14. "Proceedings of State Conference in Kalamazoo, Dec. 2–4, 1890," *Annual Report of the Secretary of the State Horticulture Society of Michigan, 1890* (Lansing: W. S. George, 1890), 40–53.
15. William J. Beal, "The Needs of Michigan Forestry," *Annual Report of the Secretary of the State Horticulture Society of Michigan, 1894* (Lansing: W. S. George, 1894), 124–29.
16. "Proceedings of State Conference in Ann Arbor, Dec. 6–8, 1898," *Annual Report of the Secretary of the State Horticulture Society of Michigan, 1898* (Lansing: Robert Smith, 1898), 246–72.
17. Dempsey, *Ruin & Recovery*, 49–64; William B. Botti and Michael D. Moore, *Michigan's State Forests: A Century of Stewardship* (East Lansing: Michigan State University Press, 2006), 1–19; Joseph J. Jones, "The Making of a National Forest: The Contest over the West Michigan Cutover, 1888–1943" (PhD diss., Michigan State University, 2007), 74–136.
18. Charles W. Garfield, "Forest Problems in Michigan," *Forester* 6, no. 11 (November 1900): 255–58; Charles W. Garfield, "A Little Talk about Michigan Forestry" (Lansing: Michigan State Forestry Commission, 1900[?]). Garfield's parents were Universalists and raised their son the same. Garfield was accepted as a member of Park Congregational Church when he married Jessie Robertson Smith in 1897 despite his assertion that he would not change his theological beliefs. His character and loyalty to the church were such that he served as an elder for many years. *Park Congregational Church: The Story of One Hundred Years* (Grand Rapids: Park Congregational Church, 1936), 34–35.
19. Joseph J. Jones, "An Unanswerable Argument in Favor of Forests: Conservation, Compromise, and the 1903 Creation of Michigan's First Forest Reserve," *Michigan Historical Review* 39, no. 1 (Spring 2013): 101–32. Much of this forest reserve land was the same as the land Garfield had wanted for a state forest reserve in 1881.
20. Charles W. Garfield to Kenyon L. Butterfield, May 6, 1907, Charles W. Garfield (2) folder, Box 3, Butterfield Papers; Donald I. Dickmann and Larry A. Leefers, *The Forests of Michigan* (Ann Arbor: University of Michigan Press, 2003), 176–177; Jones, "The Making of a National Forest," 90–93.
21. Michigan Forestry Commission, "The Advance Movement in Michigan Forestry" (Lansing: Michigan State Forestry Commission, 1905); Charles W. Garfield to Kenyon L. Butterfield, October 9, 1905, Charles W. Garfield (1) folder, Box 3, Butterfield Papers; Charles W. Garfield to Kenyon L. Butterfield, April 6, 1923, Charles W. Garfield (6) folder, Box 3, Butterfield Papers. The periodical was called *The State Review and Michigan Roads and Forests*.
22. Tarbell, "Charles W. Garfield," 62.
23. "Garfield Park," *Friends of Grand Rapids Parks*, <https://www.friendsofgrparks.org/parks/find-a-park/garfield-park-2>. The Garfield Lodge that still stands was constructed in 1906 with funds provided by Harriet Garfield, in memory of her husband Marshall, as a meeting place for people and societies for purposes of art, learning, and community gatherings.
24. "Citizen Garfield: His Splendid Gift to the City He Loves," *Michigan Tradesman* (January 31, 1906): 6; "Sale of Burton Home: Important Link in Chain of Local Events," *Michigan Tradesman* (June 23, 1920): 16; Stowe, "The Late Charles W. Garfield," 58–59; Mary Emily Schroeder, *The Charles W. Garfield Story* (Grand Rapids: Serfling, 1977).
25. "Gabby Gleanings from Grand Rapids," *Michigan Tradesman* (August 27, 1930): 1; "Unveiled Marker in Tribute to C. W. Garfield," *Grand Rapids Herald*, May 12, 1932.
26. Miller, "Charles W. Garfield"; Stowe, "The Late Charles W. Garfield," 59.
27. "1200 Are Invited to Testimonial to Sterling Citizen," *Grand Rapids Herald*, December 14, 1924; "The Garfield Symposium" and "The Glory of Grand Rapids," *Michigan Tradesman* (November 16, 1927); Miller, "Charles W. Garfield."
28. "Garfield Park," *Friends of Grand Rapids Parks*, <https://www.friendsofgrparks.org/parks/find-a-park/garfield-park-2/>. Garfield had raised the tree from seed and planted it himself.
29. Stewart (ed.), "A Tribute to Charles W. Garfield." Contributors to the special issue of *Michigan State College Record* included Senator Arthur Vandenberg, college president Robert Shaw, University of Illinois dean Eugene Davenport, horticulturalist Liberty Hyde Bailey, journalist Ray Stannard Baker, and educator Kenyon Butterfield. Bailey stated that Garfield's "life was a poem."
30. "G.R. Scouts to Pay Tribute Saturday to Charles Garfield," *Grand Rapids Herald*, February 6, 1938.
31. Stowe, "The Late Charles W. Garfield," 60–63.

HISTORY ON THE ROAD

CATOCTIN MOUNTAIN PARK

By Thomas J. Straka and James G. Lewis

Photographs by Patricia A. Straka



Sometimes you just stumble upon forest history. We did that while driving from Antietam to Gettysburg. The road between the battlefields passes through Catoctin Mountain Park in Maryland, a recreation area managed by the National Park Service. The map shows it is really two parks: a federal park to the north, contiguous with Cunningham Falls State Park to the south. In the middle of federally controlled Catoctin Mountain Park is Camp David, the president's retreat. Of course, Camp David can't be visited, but the curious can drive by the main road that leads to it.¹ About two miles from that entrance we encountered some fascinating forest history, centered on the Charcoal Trail, which was designed to teach visitors about the early use of the surrounding forest.

At the southern end of the state park is the Catoctin Iron Furnace. Based on the simple fact that charcoal is made from wood, iron furnaces, especially older ones fueled by charcoal, often have a strong forest history connection. In all, three iron furnaces were built at the site.² The second of these, "Isabella," which was built in the 1850s and burned charcoal, is the only one still standing.³

Charcoal production began with packing wood into a conical pile, called a charcoal pit, which was covered with a thin layer of leaves and then soil to create an airtight seal. The wood was burned with minimal oxygen in a process called carbonization, which over one to two weeks of incomplete combustion resulted in a lightweight but potent fuel. "Charcoal pit," though, is a misnomer. The wood was piled above ground on a flat surface called a hearth. Although the trail in the Catoctin Mountains has no charcoal pits, it does have the remains of old hearths. Colliers, as charcoal makers were called, lived in the forest near

the charcoal pits, which required constant supervision: the smallest crack in the skin of the pit would allow in oxygen and quickly burn the wood into ash.

Demand for charcoal was responsible for the earliest large-scale industrial exploitation of Maryland's forests. Beginning in the early eighteenth century, iron was in short supply, so the state legislature encouraged the building of iron furnaces by offering 100-acre land grants to support the efforts.⁴ However, each furnace required hundreds of acres of forestland to fuel the furnaces.

From 1774 to 1873, when it converted to coal for fuel, the Catoctin Furnace used charcoal generated from wood harvested on surrounding woodlands, holdings that varied over time from about 4,600 to 11,000 acres. At its peak in the 1870s, when the owners had two furnaces running—one charcoal-fueled and the other coke-fueled—"Isabella" needed more than 300 men to cut wood and make charcoal, 100 men to operate the furnace, and an additional 100 working in the open pits of the ore and limestone banks, many of whom were immigrants.⁵ In the antebellum period, the owners had used both free and slave labor in those roles. Until the mid-1830s, when immigrants arrived, enslaved workers provided at least half the labor. Though not much is known about these individuals, their situation differed markedly from that of African Americans on plantations, so much so that during a small riot in 1838, black and white furnace workers fought side by side against residents of Mechanics-town (now Thurmont).⁶

The size of the operation explains the patchwork of charcoal hearths and charcoal hauling roads still visible two centuries years later. In addition, numerous tanneries and sawmills drew from the forests, and by 1920, the harvesting plus early-twentieth-century forest fires and chestnut blight had left a landscape with "very little timber of value."⁷ As the forest was cleared, farms sprang up on land that the federal government later

would classify as submarginal—land that would not profitably grow crops and even caused environmental problems, like soil erosion in cutover watersheds.⁸

In 1922 the state forester described the forests used for charcoal production:

The original character of the forest has been greatly changed under use and abuse, particularly as the result of frequent and destructive forest fires. Practically the entire forest area of the County has been cut-over. A considerable portion has been cut-over two or three times.... A large portion of the forests in the vicinity of Catoctin Furnace was operated for more than 100 years prior to 1890 for the production of charcoal in supplying the iron furnace at that point. The furnaces required a continuous supply of wood, which was obtained by cutting clean each year a portion of the forest, coming back again for another cutting at intervals of from 25 to 35 years. This resulted in even-aged sprout forests, coming up from the stumps, following cutting. Trees of the greatest sprouting capacity, such as chestnut and the oaks, thrive under this system, and where fires were kept out maximum wood production was maintained. It is interesting today to note the old charcoal beds and the wagon roads built for taking out the charcoal many years ago.⁹

CHARCOAL AND FOREST CONSERVATION

It was not unusual that old charcoal production areas, often called coaling grounds, became candidates for the Land Utilization Program. (Another example is Hopewell Furnace, in southeastern Pennsylvania, which appeared in the 2010 issue of this magazine.¹⁰) Catoctin had been logged for more than a century before the New Deal era. Beginning in the early 1800s, thousands of acres in western Maryland, a region rich in both iron ore and forests,

were cleared for charcoal.¹¹ In 1816 one traveler predicted “this Extensive now Barren forest” would take a couple of centuries before it might become “a tolerable handsome hill Country.”¹² A traveler in western South Carolina in 1849 offered a similarly dismal picture of the area surrounding a furnace: “For miles on either side of the iron works, the whole country has been laid waste, presenting as far as the eye can reach, the most desolate and gloomy appearance. The lands having all been bought up by the Company for the sake of fuel.”¹³

In 1884 the influential magazine *Puck* published a political cartoon that reflected a growing concern over, and understanding of, the environmental effects of the iron industry on watersheds.¹⁴ In the middle ground are burning charcoal pits. The

background strongly implies that indiscriminate logging for charcoal has left behind clearcut land, an eroded riverbank, and a downriver town underwater. The woodcutters in the foreground have logs at their feet, most likely billets just the size needed for the charcoal pits. Hovering above the two men, a female apparition labeled “Public Spirit” holds up her hand and warns, “Preserve Your Forests from Destruction and Protect Your Country from Floods and Drought.”

A decade before the New Deal, the perception of Catoctin Mountain’s forests was still one of cutover land. The state forester reported, “The woodlands of Frederick County are today producing less than half of a full timber crop, because of destructive agencies, which for more than 150 years have been operating in the forests.”

He cited “destructive cutting methods” as one of the chief concerns.¹⁵

These depictions of coaling grounds were misleading. Although the charcoal iron industry created highly visible and concentrated areas of wood harvesting that drew local denigration, criticism of its consequences for the nation’s forests was disproportionate. Historical geographer Michael Williams, in *Americans and Their Forests*, estimates that forest “clearing for iron production is only 1.3 percent of the land cleared for agriculture.” However, it was, he concedes, an industry that had an enormous visual impact.¹⁶

In this same era, in fact, the charcoal iron industry was an unheralded leader in forest conservation. The industry needed to regenerate forests near a furnace and was one of the few exploitive industries to take the long view and plan for sustainability. Some of the earliest literature on sustained-yield forestry and forest fire protection in the United States appears in the industry’s *Journal of the United States Association of Charcoal Iron Worker*, which began publication in 1881, shortly before the *Puck* illustration appeared. The journal carried news of furnaces throughout the United States and Europe in addition to scientific and economic news. Two of the founders of the American forestry movement published in it. Franklin B. Hough, appointed the first chief of the U.S. Division of Forestry (predecessor to the U.S. Forest Service) in 1881, wrote a piece on the need for a “permanent” or sustained wood supply that was necessary for the long-term operation of a charcoal iron furnace.¹⁷

A frequent contributor was Bernhard E. Fernow, the only professionally trained forester in the United States until 1890, who in 1886 became chief of the Division of Forestry. Before that, he managed a charcoal iron furnace and its 15,000 acres of woodlands from 1879 to 1883.¹⁸ Fernow published some of his earliest forestry articles in the charcoal industry’s journal. He explained the importance of sustained yield in creating a continuous supply of wood for charcoal production,¹⁹ writing about topics like the “inferior yield of charcoal due to the unprincipled character of wood-choppers,” using “beech for charcoal” production, and coppice growth for “charcoal production for iron works.”²⁰

Of course, not all charcoal furnace woodlands were managed using sustained-yield management principles and practices. After all, the Catoctin Recreational



The frame of a collier's hut. An occupied hut would be covered with leaves and dirt to provide further shelter.

Demonstration Area was established from submarginal lands containing both denuded forests and unproductive farms. The desire for forest conservation and ecological restoration was the genesis of the park, along with preservation of an iron furnace thought to be of historical significance and the park's proximity to major population centers.²¹ It was only the intervention of New Deal federal land policy that made the park possible.

A NEW DEAL FOR OLD LANDS

By the 1930s the Catoctin Mountains were known as cutover charcoal land with scattered submarginal farms, and also as a popular recreation area a little more than an hour from both Washington and Baltimore. The two parks originated from a New Deal conservation project. Until then federal policy had encouraged settlement on undeveloped lands for the cultivation of agricultural crops, even when the farms might be on submarginal lands.²² During the 1920s the land utilization movement, which had started with the forest conservation efforts of Gifford Pinchot and Theodore Roosevelt, had expanded to include conserving and restoring farming, grazing, and wild lands.²³ The movement culminated in the creation of the New Deal's Natural Resources Planning Board. In 1934 the board recommended that the federal government purchase 75 million acres of submarginal farmland through the Land Utilization Program.²⁴ Under it the federal government initiated 250 projects between 1933 and 1946, totaling 11.3 million acres. Forty years later, it was estimated that about 40 percent of those projects ended up as forest, 28 percent as recreation areas, 20 percent as wildlife areas, and 12 percent as pasture and range. One thrust of the program was creation of recreational opportunities areas near urban populations, and 46 of the projects were recreational demonstration areas.²⁵

The old charcoal production lands near the Catoctin Furnace—90 percent cutover forestland and 10 percent submarginal agricultural land—were ideal candidates for the program. In 1935 the federal government began acquiring the land that would become Catoctin Mountain Park and Cunningham Falls State Park; in all about 130 properties from more than 50 different owners were purchased. The federal government began referring to it in correspondence as the Catoctin Recreational Demonstration Area the following year.²⁶

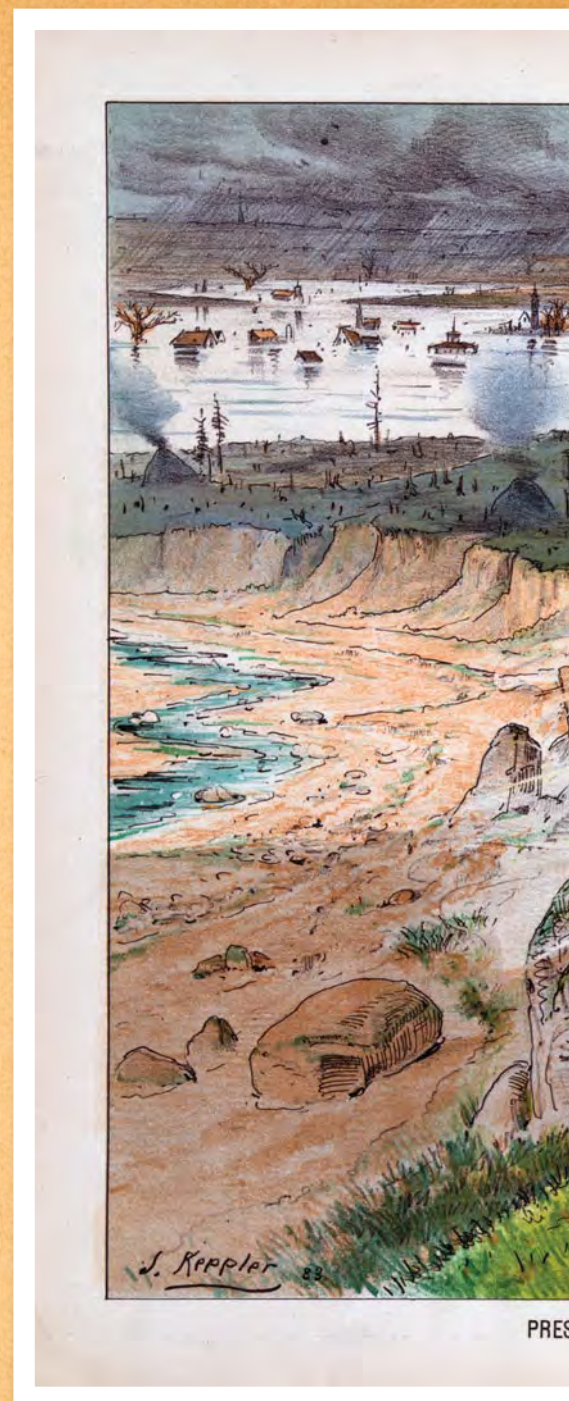
Though originally administration was delegated to the National Park Service, from the outset the idea was for the demonstration areas to become state parks (although a few others under the program became national parks).²⁷ But then in 1942, at the height of World War II, the government established the presidential retreat known today as Camp David so that the president could vacation close to Washington. When it came time to transfer the land to the state in 1954, the retreat's presence in the center of the northern half of the park posed a problem. In the end, the land north of Maryland Route 77 remained under federal control and became Catoctin Mountain Park, and the area south of the state road became Cunningham Falls State Park.²⁸ Thus, part of the forest history involves New Deal conservation policy and, to a lesser extent, national security.

ON THE CHARCOAL TRAIL

The Catoctin Mountain Park's landscape was shaped during two historical eras. The first was its support of the iron furnace from 1774 to 1903: its forests provided the wood that became the charcoal fuel. This era is interpreted along the Charcoal Trail, a half-mile loop in the northern part of Catoctin accessed from the Thurmont vista parking lot one mile north of the visitor center on Park Central Road. As previously mentioned, the park includes old sites of charcoal pits. Careful observation still yields the web of roads that led from the forest to the charcoal hearths and that eventually sent charcoal to the furnace. An even more careful observer will discover the many hearths that still dot the forest.

The second era, 1934 to 1942, is seen in the forest itself: the Charcoal Trail winds through woods that are a product of the New Deal policies of forest conservation and developing recreational demonstration areas, including Works Progress Administration and Civilian Conservation Corps programs that helped restore the forest by planting trees. (The latter also built the cabins, made of American chestnut, which one can rent.) The displays in the visitor center and the Charcoal Trail interpretative signs provide context for both historical eras. Related cultural features scattered across the park include a reconstructed sawmill on Owens Creek that represents the lumbering industry's long presence on the mountain.

The park provides a fascinating window into an early and sometimes destructive



forest-harvesting activity, plus a view of New Deal land management and conservation policies, especially ones related to the labor relief effort. Like Camp David, this forest history road trip is well hidden in plain sight. □

Thomas J. Straka is a forestry professor at Clemson University and Patricia A. Straka is a consulting forester in Pendleton, South Carolina. James G. Lewis is editor of Forest History Today and wishes to thank Tom for letting him collaborate.

PUCK.



ERVE YOUR FORESTS FROM DESTRUCTION, AND PROTECT YOUR COUNTRY FROM FLOODS AND DROUGHT.

“Preserve Your Forests from Destruction, and Protect Your Country from Floods and Drought” is one of the earliest color forest conservation political cartoons. The charcoal pits in the background reveal the true focus of the artist’s criticism.

NOTES

1. Camp David is closed to the public, and the National Park Service forbids motorists from stopping even to photograph the main road.
2. Elizabeth Yourtee Anderson, *Catoctin Furnace: Portrait of an Iron-Making Village* (Charleston, SC: History Press, 2013), 49, 61–62.
3. American Iron and Steel Association, *Directory to the Iron and Steel Works of the United States*, 14th ed. (Philadelphia: American Iron and Steel Association, 1898), 27–28; Karen Gardner, “Catoctin Mountains Rich in Iron Industry History,” *Frederick News Post*, July 11, 2001, https://www.fredericknewspost.com/archives/catoctin-mountains-rich-in-iron-industry-history/article_b19cd7ae-75de-5f0d-be30-138c77c8059b.html.
4. Jonathan S. Kays, “Maryland’s Forests: Past, Present, and Future,” Fact Sheet 627 (College Park: University of Maryland, Maryland Cooperative Extension, 1995), 2. Michael Williams estimates it took 150 acres of woodland to produce 1,000 tons of pig iron. *Americans and Their Forests: A Historical Geography* (New York: Cambridge University Press, 1989), 342–43.
5. Edmund F. Wehrle, *Catoctin Mountain Park: A Historic Resource Study* (Washington, DC: National Park Service, 2000), 93; Anderson, *Catoctin Furnace*, 52.
6. Wehrle, *Catoctin Mountain Park*, 59–60, 63–73; “African Americans,” *Catoctin Mountain Park*, Maryland, National Park Service, last modified April 10, 2015, <https://www.nps.gov/cato/>



A charcoal hearth with billets lies ready to be formed into a charcoal pit. Numerous former charcoal pits are located along the trail.



Using a pair of mules or horses, wood haulers moved half a cord on sleds like this to a charcoal hearth. They would unload the wood on both sides of the sled around the hearth, then return for another load.

learn/historyculture/africanamericans.htm. The visitor center information is to be updated in 2018 to include information about the use of slave labor at the furnace.

7. *Catoctin Clarion*, May 13, 1920, quoted in Wehrle, *Catoctin Mountain Park*, 120–22.
8. Barbara M. Kirkconnell, *Catoctin Mountain Park: An Administrative History* (Washington, DC: National Park Service, 1988), 5–6.
9. F. W. Besley, *The Forests of Frederick County* (Baltimore: Maryland State Board of Forestry, 1922), 10–11.

10. Thomas J. Straka and Wayne C. Ramer, "Hopewell Furnace National Historic Site," *Forest History Today* 16, no. 1–2 (Spring/Fall 2010): 58–62. H. H. Wooten, *The Land Utilization Program, 1934 to 1964: Origin, Development, and Present Status*, Agricultural Economics Report No. 85 (Washington, DC: USDA Economic Research Service, 1985), 55.
11. Wilma A. Dunaway, *The First American Frontier: Transition to Capitalism in Southern Appalachia, 1700–1860* (Chapel Hill: University of North Carolina Press, 1996), 280–81. Western

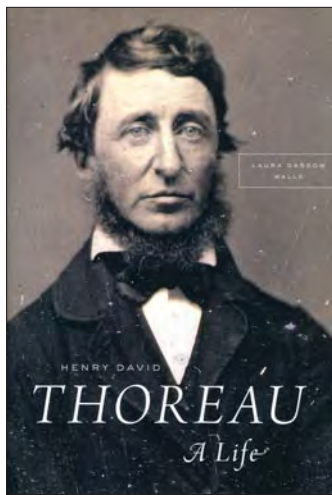
Maryland comprises four counties, Frederick, Washington, Allegany, and Garrett.

12. Uria Brown, "Uria Brown's Journal: Of a Journey from the City of Baltimore to the States of Pennsylvania, Virginia, Ohio and through Some Part of the State of Maryland," *Maryland Historical Magazine* 10, no. 3 (September 1915): 282.
13. Answers of F. H. Elmore, 17, *Laurensville Herald*, May 11, 1849, quoted in Ernest M. Lander Jr., "The Iron Industry in Ante-Bellum South Carolina," *Journal of Southern History* 20, no. 3 (August 1954): 354–55.
14. Michael Alexander Kahn and Richard Samuel West, *What Fools These Mortals Be: The Story of Puck, America's First and Most Influential Magazine of Color Political Cartoons* (San Diego: IDW Publishing, 2014), 11. The cartoon appeared in the January 9, 1884, issue of *Puck* and is in the Library of Congress, Prints and Photographs Division. The artist was Joseph Ferdinand Keppler, one of the founders of the magazine.
15. Besley, *Forests of Frederick County*, 21.
16. Williams, *Americans and Their Forests*, 344.
17. Franklin B. Hough, "On the Importance of Giving Timely Attention to the Growth of Woodlands for the Supply of Charcoal for Metallurgical Uses," *Journal of the United States Association of Charcoal Iron Workers* 1 (1880): 67–80.
18. Filibert Roth, "Great Teacher of Forestry Retires," *American Forestry* 26 (April 1920): 209–12.
19. Richard W. Behan, *Plundered Promise: Capitalism, Politics, and the Fate of the Federal Lands* (Washington, DC: Island Press, 2001), 100–103.
20. Bernhard E. Fernow, "The Yield of Wood and When to Cut It," *Journal of the United States Association of Charcoal Iron Workers* 3 (March 1882): 19–26; "The Beech for Charcoal," 4 (April 1883): 102–104; and "Shall Our Charcoal in Future Be Produced from Coppice Growth or Future Forest?" 6 (October 1885): 272–81.
21. Angela Sirna, "Tracing a Lineage of Social Reform Programs at Catoctin Mountain Park," *Public Historian* 38 (November 2016): 167–89; and Kirkconnell, *Catoctin Mountain Park*, 52–56.
22. L. C. Gray, "National Land Policies in Retrospect and Prospect," *Journal of Farm Economics* 13, no. 2 (April 1931): 231–45.
23. Albert Z. Guttenberg, "The Land Utilization Movement of the 1920s," *Agricultural History* 50, no. 3 (1976): 479–81.
24. Marion Clawson, *New Deal Planning: The National Resources Planning Board* (Baltimore: Johns Hopkins University Press, 1981), 111.
25. Wooten, *Land Utilization Program*, v.
26. Kirkconnell, *Catoctin Mountain Park*, 8–21; J. Early and B. Stafford, *Catoctin Mountain Park: Cultural Landscapes Inventory* (Washington, DC: National Park Service National Capital Regional Office, 2008), 2.
27. Wehrle, *Catoctin Mountain Park*, 158–61.
28. Barry Mackintosh, *The National Parks: Shaping the System* (Washington, DC: National Park Service, 1991), 56–57.

BOOKS OF INTEREST

by Jason Howard, Eben Lehman, and James G. Lewis

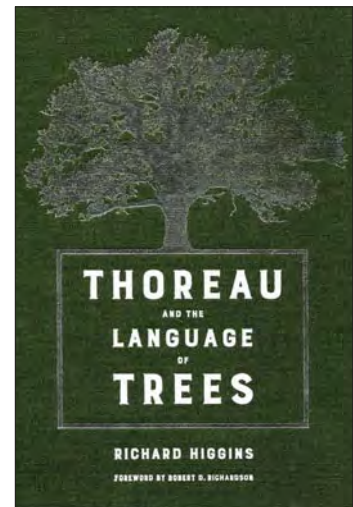
With the possible exception of John Muir, no figure in American conservation history is as misunderstood by the public and coopted by the environmental movement as Henry David Thoreau. Out-of-context quotes are splashed across posters of idyllic nature scenes, reducing Thoreau's thoughtful and thought-filled books and essays to aphorisms or even dicta. (Richard Judd's article elsewhere in this issue about Thoreau's famous phrase, "in Wildness is the preservation of the World," offers a case study of sorts.) Much is lost when Thoreau's rigorous labor of several years is condensed to fewer than 140 characters: today's smartphone-dependent world is rendering us ignorant of Thoreau's work and writings, which require time and effort to absorb and appreciate. Fortunately, we now have Laura Dassow Walls's new biography to encourage us to go back to the source material. As she notes in the preface of *Henry David Thoreau: A Life* (University of Chicago Press, 2017), Thoreau held



many jobs (land surveyor, writer, and teacher, to name a few) and wrote on many subjects. But biographers and historians "have invented two Thoreaus, both of them hermits, yet radically at odds with each other. One speaks for nature; the other for social justice." Both emanate from the same roots: "he found society in nature, and nature he found everywhere, including the town center and the human

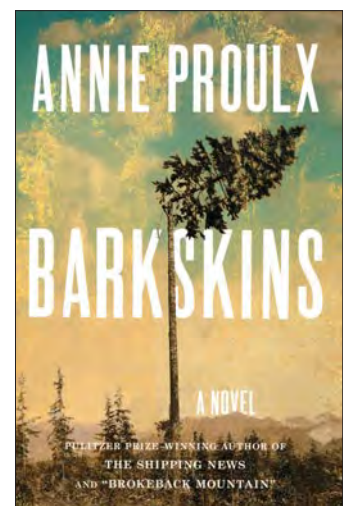
heart." Because both Thoreaus are found in his writings, Walls chose to examine Thoreau's life as a writer. (She previously looked at Thoreau the scientist in *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science*, published in 1995.) Thus we are given a well-rounded biography of a man some have portrayed as a hermit and misanthrope, which he certainly could be at times, but who in his lifetime was also known as a loving son and devoted friend. This important work captures Thoreau in all his complexity and contradictions, and makes him and his writings accessible to all. (JL)

Speaking of making Thoreau accessible, Richard Higgins also does so by exploring Thoreau's deep connection to trees in *Thoreau and the Language of Trees* (University of California Press, 2017). He celebrated them with beautiful prose, depicted them in sketches, nurtured his soul by spending time among them, and studied them closely as a naturalist. The bond was never broken, writes Higgins. "As a saunterer, poet, surveyor, and naturalist, Thoreau loved trees and wrote about them his whole adult life. In the 1850s, he began to study them in depth.... His detailed observations about the growth and life span of trees, their methods of propagation and how they succeed each other in the forest, although mostly ignored in professional forestry, were decades ahead of his time." His devotion and interest were so great that it ultimately cost him his life. It was while counting rings in hickory trees on a cold and rainy December day in 1860 that he caught a cold that quickly worsened and turned into bronchitis, and then the tuberculosis from which he never recovered. Each of the book's ten chapters contains a short essay and a selection of one hundred excerpts from his writings about trees, which are largely taken from his two-million-word journal. Each excerpt is accompanied by a photograph by the author or by Herbert Wendell Cleason, who documented Thoreau's world a century ago, or by a sketch by Thoreau him-



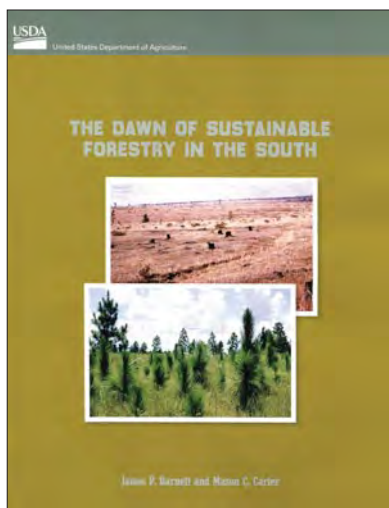
self. The chapters vary in focus. Some explore Thoreau's different emotional or scientific responses to trees. One is about his deep affinity for "an iconic American tree," the eastern white pine; two are about his romantic views of old trees. This format invites one to dip into the book to read random journal entries, even after one has read it cover to cover. (JL)

It's not often that fiction writers turn to forest history for inspiration or setting. And it is even rarer when the novelist is a writer of the caliber of Annie Proulx, winner of multiple awards, including the Pulitzer Prize for Fiction. In *Barkskins* (Simon and Schuster, 2016), she has produced an epic



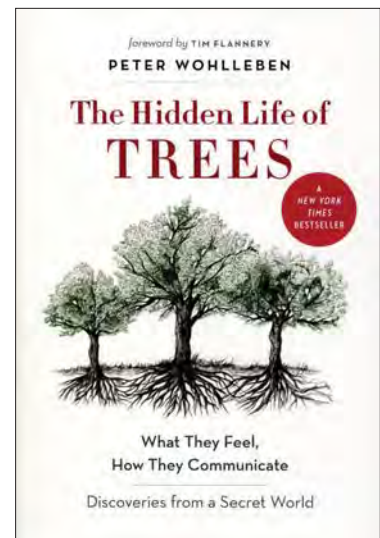
tale of two men, René Sel and Charles Duquet, and their descendants spanning more than three hundred years. In 1693, the two men come to New France as indentured servants, having been transported from the slums of Paris to cut trees for their master for the next three years. Duquet flees the first chance he gets and makes his fortune in the New World by harvesting furs and milling lumber. Sel stays, dutifully clearing farmland for the *seigneur*. He eventually is forced to marry Mari, the Mi'kmaq woman who had been living with the master. Their offspring, considered Native American, are forced to make their way in a white man's world. Meanwhile, Duquet establishes himself in Boston and marries the daughter of a Dutch business partner, anglicizes the family name to Duke, and with his sons builds a timber empire. Their stories unspool across three centuries as each family engages with forests and deforestation on its own terms. Proulx is known for her beautiful prose, which is on full display throughout the novel's more than seven hundred pages. (JL)

After reading the feature article "Causes and Consequences of the First Lumber Boom in Louisiana and the Gulf South" in this issue, those wanting to know what happened after the southern pine lumber industry fell on hard times in the 1920s can pick up *The Dawn of Sustainable Forestry in the South* (USDA Forest Service, 2017). This short book (38 pages; available online for free) takes an in-depth look at the boom years and details how the federal government and private industry responded to the market's collapse. Over three chapters, authors James P. Barnett and Mason C. Carter use biographical sketches of three



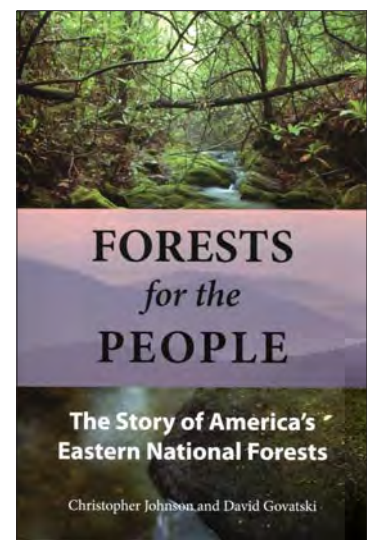
men to help tell the story of the beginning of reforestation: "The Influence of Henry E. Hardtner" introduces readers to the founder of the Urania Lumber Company and one of the first advocates of forest management; "The Action of William H. Sullivan" focuses on the general manager of the Great Southern Lumber Company, who embraced Hardtner's ideas of employing both natural and artificial regeneration; and "The Persistence of Philip C. Wakeley" tells of the U.S. Forest Service researcher whose collaboration with Great Southern (and his later work at the agency's Stuart Nursery) had a huge influence on tree nursery production. Their efforts, combined with that of others in both public and private forestry more briefly discussed, laid the foundation for a "golden age of industrial forestry in the South following World War II." (JL)

Every so often, a book comes through that makes a person stop and think and transforms one's view of the natural world. *The Hidden Life of Trees: What They Feel, How They Communicate—Discoveries from a Secret World* (Greystone Books, 2015), by Peter Wohlleben, is one of these. Wohlleben, a forester for the village of Hümmel in the Eifel Mountains in western Germany, started his career as a forester, one who admittedly viewed trees for their market value and little else. When he began organizing survival training and log-cabin tours for tourists about twenty-five years ago, conversations with his visitors "reignited" his lifelong love of nature and helped him to look anew at the trees he previously ignored. A gnarled, twisted tree, for example, which to a forester had low commercial value, now became fascinating for its aesthetic appeal. His investigations—unfocused and deliberate; some in the field, some in the professional literature—revealed to him that trees are social creatures, capable of communication, feelings, and pain, and even of aiding one another in distress. With this knowledge in hand, he set about changing how he managed the community's forest and persuaded his employer to do so as well. The village subsequently banned the use of machines for harvesting trees out of a desire to minimize the pain to the tree community. The book is an introduction to forest ecology and silviculture, and the author makes the science accessible and fascinating to the novice. He reveals one amazing fact after another. How does a professional forester bring silviculture and forest



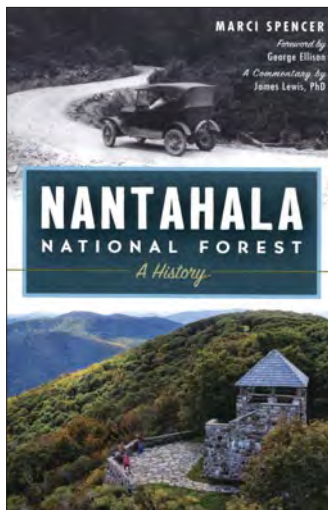
ecology to a general audience? In part by posing and addressing questions that people have about different tree species and how they grow or behave. Although his study is rooted in his experience working with the beech, spruce, and fir trees of Europe, the lessons he has learned can be universally applied. (JL)

The upcoming centennial of the establishment of the White Mountain National Forest in New England in 2018 is a good opportunity to look back on the history and legacy of the 1911 Weeks Act, the law responsible for creating the White Mountain and numerous other eastern national forests. The Weeks Act fundamentally changed the National Forest System map, and also the relationship between the federal and state governments. As written by Massachusetts Representative John Weeks, the law bearing his name gave the federal government the power to purchase private lands and



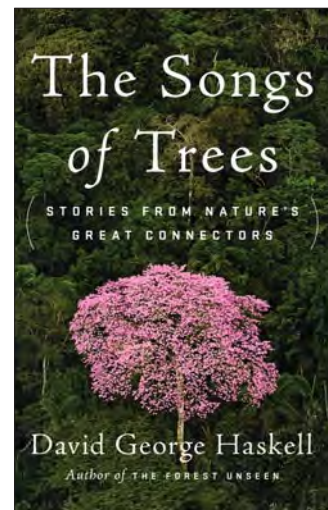
convert them into national forests to protect navigable waterways and watersheds. This narrow purpose was later eliminated, making it easier to protect more land. Section 2 of the law called for federal-state cooperation in fighting wildfires around the country. That part of the law has had an enormous effect on the nation's fire policy and both public and private forests. *Forests for the People: The Story of America's Eastern National Forests* (Island Press, 2013) is the single best volume about the Weeks Act and its legacy. The book's first part tells the story of how America's eastern forests were saved in the early twentieth century and how the Weeks Act was applied to create national forests in the East, South, and Lake states. In all, 52 national forests, encompassing 25 million acres in 26 states and Puerto Rico, have been established. The second part of the book offers eight case studies to shed light on current issues facing the eastern national forests. Topics include the return of the wolf to two national forests, shale oil drilling on the Allegheny National Forest, the emerald ash borer infestation in Michigan and beyond, and the conflict between the preservation desires of the general public and the multiple-use mandate of the Forest Service. The coauthors bring a wealth of experience to their topic. David Govatski is a forester and environmental consultant who worked for the U.S. Forest Service for more than thirty years in a variety of positions, and he was involved in the Weeks Act centennial celebrations in 2011. Christopher Johnson has extensive experience in writing about nature and the environment. Both live near the White Mountain National Forest. (JL)

If she isn't already, naturalist Marci Spencer is becoming the go-to forest historian of western North Carolina. Her latest book, *Nantahala National Forest: A History* (History Press, 2017), comes just a few years after her books on the Pisgah National Forest and Clingmans Dome, the highest mountain in the Great Smoky Mountains National Park. *Nantahala* is another entry in the Natural History series, which offers popular histories of natural places in the United States. Nantahala National Forest, created in 1920 as one of the Weeks Act national forests, covers a half million acres in southwestern North Carolina. It is home to such attractions as Whitewater Falls, the highest waterfall in the East, and Joyce Kilmer Memorial



Forest, one of the region's largest contiguous tracts of old-growth forest. The book is divided into four sections. The first tells the history of the region from European settlement to the present; the remaining three describe each of the three ranger districts and offer a bit more history on their most popular recreation destinations. Building on a foundation of solid research, Spencer mixes primary documents and interviews with land managers and stakeholders to good effect, creating a lively history that encourages the reader to visit the forest. The book also includes numerous photos that show off Nantahala's splendor, as well as the work of the Forest Service to manage and maintain it. (Full disclosure: FHS historian James Lewis wrote an introduction, called "A Commentary" by the publisher, for the book.) (JL)

In the winter of 1874, John Muir stood deep in the forests of the Sierra Nevada during a windstorm and took in the natural music around him. "Even when the grand anthem had swelled to its highest pitch, I could distinctly hear the varying tones of individual trees, Spruce, and Fir, and Pine, and leafless Oak," he wrote. "Each was expressing itself in its own way, singing its own song." Muir's characterization of trees as musicians, their work part of a greater natural symphony, is the springboard for David George Haskell's latest book, *The Songs of Trees: Stories from Nature's Great Connectors* (Viking, 2017). Haskell, a Pulitzer Prize finalist for his previous work, *The Forest Unseen*, reveals the sounds and stories surrounding trees, and what they tell us about the biological networks in which they live. He takes the reader on a unique journey around the world to twelve specimen trees, each representing a different species, and examines



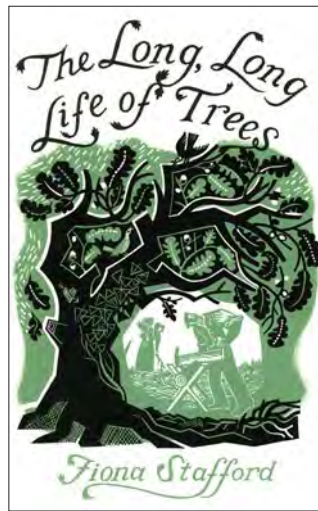
their relationships with humans and other species. Some of the trees grow in seemingly natural environments, such as a ceibo tree deep in the Amazonian rainforest of Ecuador, and a balsam fir in the boreal forest of northwestern Ontario. Also examined are trees touched directly by humans, like an olive tree at Damascus Gate outside the Old City of Jerusalem, and the Yamaki pine, or bonsai, tree given to the U.S. National Arboretum. Regardless of its location, though, Haskell delves into the biological networks surrounding each tree. This includes, of course, the literal sounds of its environment, as well as the human influences on the biological system. Each tree serves as an example of how we as humans participate in nature's networks, and how all of life is a part of these networked relationships. With this work, Haskell takes us well beyond the old philosophical question, "If a tree falls in the forest and no one is around to hear it, does it make a sound?" In fact, all trees are full of sound at every stage of their lives. More importantly, it is the story behind each of these sounds that show how trees are the "great connectors" of all living species. (EL)

The often overlooked hawthorn has played a crucial role across thousands of years of human history. *Hawthorn: The Tree That Has Nourished, Healed, and Inspired through the Ages* (Yale University Press, 2015), by Bill Vaughn, takes the reader through the fascinating political, cultural, religious, and natural history of the species. A genus of shrubs and small trees, the hawthorn has tough wood, dense branching, and sharp thorns. Vaughn opens the book with a personal story of coming across a hawthorn on his property in rural Montana. What begins as a humbling and literally painful



experience—he is impaled by a thorn while trying to remove a branch—becomes a long journey of discovery around the world, ultimately leaving him in awe. What initially looked like a foreboding mutant ultimately revealed itself to be a tree of great historical importance, as well as a unique religious and literary symbol. Vaughn journeys through thousands of years of history across North America, Europe, and China as he discovers how the hawthorn figures in everything from Celtic folklore to ancient Chinese beverages. One chapter focuses on the historical use of hawthorn as living fences, a natural barbed-wire boundary that was widely used across Europe to control livestock and assert private property rights. Other chapters look at the appearance of the tree and its thorns in both ancient pagan and early Christian iconography. Many of these ancient mystical and superstitious connections with the tree remain today, especially in Ireland, where crews reroute modern roads around hawthorn trees rather than cut them down. In an interesting side note, we learn that some people attribute the failure of John DeLorean’s auto company (of *Back to the Future* movie fame) to his ill-fated decision to cut down a hawthorn tree when siting his auto plant in Northern Ireland; shortly thereafter his company was brought to financial ruin. Overall, the book is an engaging read about an overlooked species whose importance and influence on human culture the reader will come to appreciate. (EL)

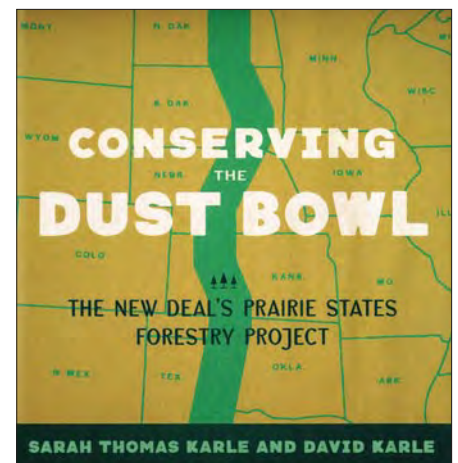
The hawthorn is among seventeen genera of trees—from ash and apple to willow and yew—explored in detail by Fiona Stafford in *The Long, Long Life of Trees* (Yale University Press, 2016). The author weaves her love of these trees into an examination



of their influence on art, literature, religion, science, technology, and culture. While focusing primarily on England, the book also takes the reader on a journey through other parts of the world. Stafford is a professor of English at the University of Oxford, and her engaging prose and poetic language—not to mention her command of history and literature—bring each tree to life on the page. She considers the trees’ symbolic importance (the olive as a metaphor for peace, the apple as a tree of knowledge, the willow representing loss), practical applications (ash for walking sticks and airplanes), and cultural associations (the rowan tree in Scottish folk tradition). Stafford also examines individual trees of special historical importance, like the elm under which John Wesley held open prayer meetings, the Ankerwyke yew where Henry VIII courted Anne Boleyn, and the horse chestnut tree in Amsterdam that Anne Frank could glimpse from her small window while in hiding from the Nazis. The stories show how trees are intertwined with human life, contributing to life, art, and culture in ways we sometimes take for granted. (EL)

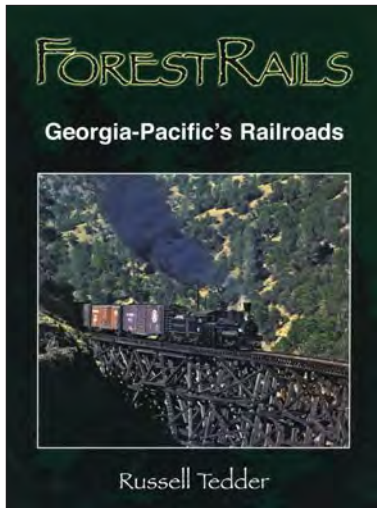
By the early 1930s the United States was reeling from the effects of one of the worst ecological disasters in history. Decades of unsustainable large-scale farming practices had exacerbated drought conditions and unleashed a rolling onslaught of fierce dust storms across the Great Plains. On a tour across the country, President Franklin D. Roosevelt witnessed firsthand the environmental and economic destruction in the Dust Bowl. His response was a New Deal program to plant a wall of trees in a north-south line to help combat soil erosion. The story of this program is the subject of

Conserving the Dust Bowl: The New Deal’s Prairie States Forestry Project (LSU Press, 2017), by Sarah Thomas Karle and David Karle. This is a detailed history of Roosevelt’s ambition to create a “shelterbelt” from Texas to Canada, and how it economically and ecologically transformed the region. After exploring the events leading to the conditions of the Dust Bowl, the authors examine the creation, implementation, and legacy of the Prairie States Forestry Project. They also provide insight into Roosevelt’s interest in the natural environment, and the influence of other figures, such as forester Raphael Zon, on the president’s decision-making. Roosevelt got his “Great Wall of Trees,” which ultimately proved effective in multiple ways. In this cooperative project involving the U.S. Forest Service, the Civilian Conservation Corps, and the Works Progress Administration, thousands of unemployed young men were given jobs planting trees. And despite debates within the forestry profession over its scientific merit, the more than 220 million trees planted between



1935 and 1942 succeeded in controlling wind erosion, protecting farms, and creating habitat for birds and other wildlife. Many sections of these shelterbelts endure today, and the authors conclude the book with a photo essay of tree belts in Nebraska in 2015. Providing an excellent history of an ambitious moment in American environmental policy, the book also offers lessons in how we might adapt to future ecological crises. (EL)

The Georgia-Pacific Company was founded in 1927 as a wholesaler of hardwood lumber and over the ensuing decades developed into one of the leading forest products companies in the world. The tremendous growth of the company



in the first half of the twentieth century can be largely attributed not just to its shrewd acquisitions but also to the operation of an expansive railroad network—the subject of *Forest Rails: Georgia-Pacific's Railroads* (White River Productions, 2016), by Russell Tedder. This is a meticulous, comprehensive history of every rail line owned or operated at some point by Georgia-Pacific throughout the country. The author gives the reader detailed information on each line, from construction through its eventual sale or abandonment. The growth of Georgia-Pacific's railroad network also directly parallels the history of the company's logging and manufacturing operations. Though not a company history in the traditional sense, the book provides insight into Georgia-Pacific's expansion to the West and, more importantly, gives a ground-level view of moving timber from the forest to mills and other points of sale. Tedder also shows the direct connection between the U.S. forest products industry and the railroads. Steam engine locomotives were an integral part of the industry from the late nineteenth through mid-twentieth centuries, and diesel-electric trains remained important in many areas for decades afterward. There is no better source on this subject matter than Tedder, who spent his entire career working in shortline railroading. Tedder, who retired in 1997 as director of Corporate Rail Service at Georgia-Pacific, brings a wealth of knowledge of the company's railroad operations to this book. Its 450 pages are packed with historical photos, and he provides numerous detailed maps of long-lost railroad lines. You will not find a more exhaustive history of this subject. (EL)

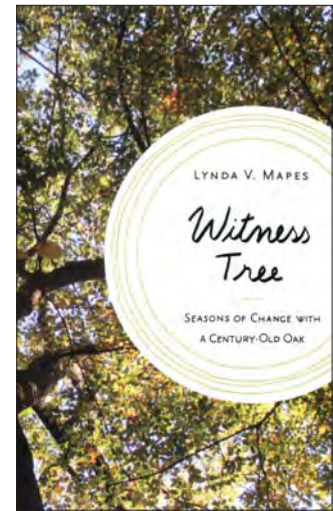
Published to coincide with the National

Park Service's centennial, the revised edition of *Challenge of the Big Trees: The History of Sequoia and Kings Canyon National Parks* (George F. Thompson Publishing, 2016) is most welcome. The new edition notes major changes in the parks since 1990, when the book was first published. Authors William C. Tweed and Lary M. Dilsaver also discuss climate change and evolving attitudes toward nature. These two parks are famous for being home to some of the largest trees in the world, but they also protect important cultural and natural resources, including important watersheds. The history of Sequoia (established in 1890) and Kings Canyon (established in 1890 as General Grant National Park), which adjoin each other in the Sierra Nevada, dates back to the early days in the national park movement and thus offers a microcosmic history of nature preservation in the United States. The challenges of maintaining and protecting these parks, which have been jointly administered since 1943, includes fending



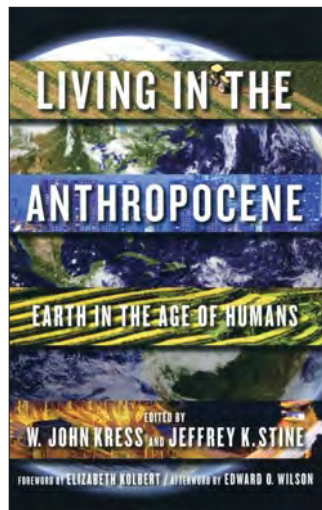
off developers and at turns clashing and cooperating with the U.S. Forest Service, which administers adjacent forests. Historic photos and custom maps help tell the story. If one ever plans to visit Sequoia and or King Canyon National Park, this book will enrich the experience. (JH)

Climate change is a real and frightening issue, portending dangerous weather extremes and rising sea levels. Yet for the average person, the volume of research and publications on the issue can be overwhelming. With so much information on so many aspects of the phenomenon, it may be hard to grasp what is happening on a global scale. To make this subject relatable, Lynda V. Mapes decided to find



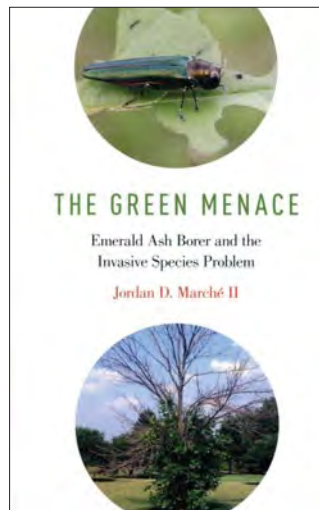
out what an individual tree in the Harvard Forest might tell us about climate change. She explores this question in *Witness Tree: Seasons of Change with a Century-Old Oak* (Bloomsbury, 2017). By “interviewing” a red oak that sprouted in 1905, a time when deforestation had peaked in New England, and putting its story in context, Mapes makes the vast subject of climate change relatable. She came up with the idea following a research fellowship at MIT, where she was investigating how trees respond to climate change. The result is an engaging approach to educating lay readers about the consequences of climate change. The book also makes use of physics and ecological and biological data to interpret the “testimony” of the oak. *Witness Tree* adds tremendous value to the climate change conversation. (JH)

Besides climate change, another topic in current environmental literature is Anthropocene, “the Age of Humans.” The term, whose official adoption is still being debated by geologists, is slowly entering the lexicon because scientists increasingly are recognizing that the human species is making major changes to the planet's ecosystems: on that there is no debate. Changes to the atmosphere most likely began with the invention of agriculture and have accelerated since humans started burning coal and oil. *Living in the Anthropocene: Earth in the Age of Humans*, edited by John W. Kress and Jeffrey K. Stine, with a foreword by Elizabeth Kolbert and an afterword by Edward O. Wilson (Smithsonian Books, 2017), offers thirty-two short essays (most are less than five pages) by experts across many disciplines who explore the topic from scientific, anthropological, social,



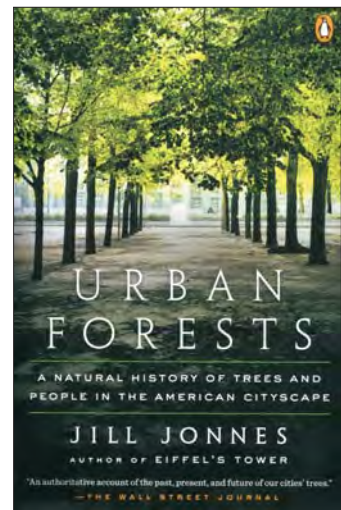
artistic, economic, and historical perspectives. The book is divided into five sections, each with a two-page introduction: “A Changing Planet,” “Drivers of Change,” “Responding to Change,” “Visual Culture,” and “The Way Forward.” Essays in the “Visual Culture” section examine the depiction and interpretation of the Anthropocene in paintings, sculpture, and film, with essays on art created by Africans and another about indigenous people in the Arctic—two groups disproportionately affected by their fellow human beings in other regions. Two essays focus on forests. Sean M. McMahon’s “Temperate Forests: A Tale of the Anthropocene” (in “Drivers of Change”) explores the history of human use, misuse, mismanagement, and restoration of temperate forests, warning that humans are doing to tropical forests what was done to temperate ones at their own peril. Robin L. Chazdon’s essay in the “Responding to Change” section, “Forest Succession and Human Agency in an Uncertain Future,” warns that the mutual partnership between people and forests means nothing less than that the fate of the human race is at stake; conversely, she writes, “Restoring the world’s forests will also restore humanity.” The book is not all doom and gloom. The six essays in the closing section offer hope and some solutions—none of which are easy—for mitigating the damage humans are doing to the planet. Overall, the book provides an excellent introduction to the topic. (JL)

Climate change is not the only threat to trees and the environment. The proliferation of invasive insects, at times aided by climate change, is another. Ash is one of several tree species in North America endangered by an insect. Ash is a common



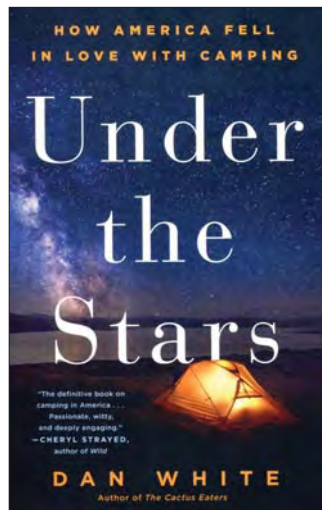
street tree in cities, where its large canopy provides shade and mitigates the heat island effect, and its wood is used in baseball bats, tool handles, furniture, and flooring. Because of an insect smaller than a penny, however, ash trees are dying at an alarming rate. The emerald ash borer (EAB) arrived in the Detroit area from Asia around 2002 and has been spreading largely unchecked since. Female borers lay eggs inside the bark of ash trees, and the larvae feed out of sight. The insect is usually found only after it’s too late to save the tree. Jordan D. Marché II, who wrote about this topic in the Fall 2012 issue of this magazine, offers the first book-length look at the pest and the varied responses to its presence in *The Green Menace: Emerald Ash Borer and the Invasive Species Problem* (Oxford University Press, 2017). Though it is a case study, the book also addresses larger issues concerning invasives, such as the inadvertent transport of insects, regulations to prevent their introduction, and state and federal agencies’ efforts to enforce those regulations. With the likelihood that the EAB is just one of many invasive pests that will threaten North American forests in the coming decades, *The Green Menace* provides a cautionary tale about the need for vigilance in both urban and rural forest settings. (JH)

If the previous title has you interested in the role urban trees play in our lives, consider Jill Jonnes’s *Urban Forests: A Natural History of Trees and People in the American Cityscape* (Viking Penguin, 2016). Jonnes, a Maryland Master Naturalist and founder of the Baltimore Tree Trust, has produced an engaging history of urban trees in the United States by weaving together the biographies of people and the tree species they have favored in cities. She highlights



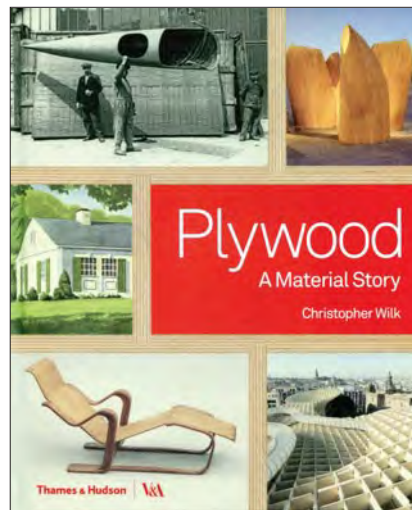
the American presidents, explorers, scientists, nurserymen, and other individuals who have had a hand in creating tree cities and livable spaces. Some, like Charles S. Sargent of Harvard’s Arnold Arboretum, will be familiar to most readers, but she also brings to light long-forgotten figures like Frank Meyer and David Fairchild, two U.S. Department of Agriculture employees whose work gathering and importing trees and seeds in the early twentieth century transformed America’s urban landscapes. *Urban Forests* looks at the Japanese cherry trees in the nation’s capital, the American chestnut and American elm, Bradford Callery pears, and the unintended consequences of single-species urban forests. Other chapters explain current issues like invasive pests and various blights, with interviews of forest pathologists and entomologists. Her concluding chapter reviews many of the efforts being undertaken by both national and local groups around the country to mitigate climate change and reduce human-caused issues like water and air pollution by planting more trees and promoting urban forestry. (JH)

Camping is a memorable experience that brings one close to nature. Whether one prefers primitive camping and lives off the land or goes glamping with all the comforts of home, sleeping out of doors has an enduring appeal. “I love camping. I hate camping,” proclaims Dan White, a writer and avid camper who has spent more than six hundred nights out. “I can’t seem to stop. In case you haven’t noticed, campouts hardly ever go the way you want them to go.” In *Under the Stars: How America Fell in Love with Camping* (Henry Holt, 2016), he explores the history of recreational camping, which began in the nineteenth



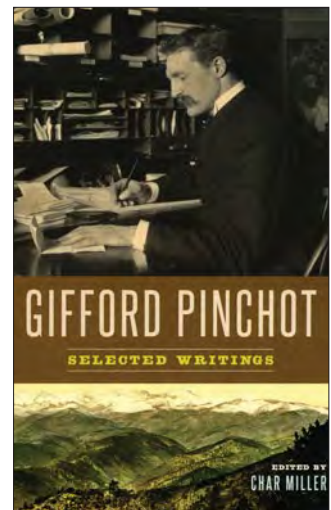
century mostly as a tonic for—or bulwark against—the modern world, and mixes it with accounts of his own camping experiences in places like the Sierras, the Adirondacks, and the Everglades. His famous “campers” of the past include Henry David Thoreau, who helped shape America’s perspective of natural areas and the outdoors experience, including the author’s. White also describes the travels of John Muir, Ernest Thompson Seton, and even the Merry Tramps of Oakland, a late-1800s group of middle-class California urbanites who traveled by rail to camp in spectacular places. White’s own accounts are entertaining. He decided not to write about a period of camping without trying it for himself using period equipment, and so the reader follows along as White struggles to light a fire for his wife and daughter on their first family camping trip. He even attempted to emulate Joseph Knowles, the early-twentieth-century outdoor celebrity known as “Nature Man,” by camping naked. Yet getting stung by wasps during that excursion and attacked by a demoiselle crane while glamping in Sonoma, California, has not stopped him. *Under the Stars* is not a comprehensive history of camping, but it reminds us of the complex relationship many of us have with sleeping al fresco. (JH)

Made by gluing together layers of cross-grained veneers, plywood can be stronger than solid wood. The value and history of this versatile product are explored in Christopher Wilk’s *Plywood: A Material Story* (Thames and Hudson, 2017). Wilk, Keeper of the Furniture, Textiles and Fashion Department at the Victorian and Albert Museum in London, prepared this book for a museum exhibition, *Plywood:*



Material of the Modern World. (Wilk conducted a portion of his research for the book and exhibit at the Forest History Society, and *Plywood* contains images from the Alvin J. Huss Archives and cites articles in *American Lumberman* and *Southern Lumberman* in the Carl Weyerhaeuser Library.) To the general public, plywood may be just another material used in buildings. But its versatility, as Wilk demonstrates in this well-researched and heavily illustrated book, seems limited only by one’s imagination. His book is the first comprehensive study of the history of plywood and its myriad applications, from its invention in the 1700s to the present. He looks at the veneer-making process and plywood’s use over time: building construction, high-end modernist furniture, even clothing. In the 1920s one manufacturer made veneer swimming costumes for women to demonstrate that its product was waterproof. The introduction of synthetic adhesives in the mid-1930s improved the strength and structural reliability of plywood and eventually transformed the entire plywood industry. In the eight decades since, plywood has gone in and out of fashion with furniture designers and building architects, but it has never completely disappeared. Wilk’s book entertainingly shows why. (JH)

The founding chief of the U.S. Forest Service and a two-time governor of Pennsylvania, Gifford Pinchot (1865–1946) was a central figure in the early-twentieth-century conservation movement in the United States and a pivotal figure in the history of his adopted state in the 1920s and 1930s. The forester-turned-politician was a prolific writer, correspondent, and essayist. His manuscript collection at the Library



of Congress is one of its largest, totaling more than one million items. A national figure for more than half a century, his interests ranged far beyond forestry; he wrote on energy policy, Prohibition laws, and the influence of women in politics, to name a few issues. These topics, and of course forestry, are all covered in *Gifford Pinchot: Selected Writings* (Pennsylvania State University Press, 2017). Char Miller, Pinchot’s leading biographer, has done researchers a great service by going through the man’s myriad publications and whittling them down into this handy, well-conceived volume. Miller’s introduction to the book offers a good summation for those not familiar with Pinchot’s accomplishments or his writing life. The collection of essays, articles, speeches, and letters is divided into five parts: “Forests, Forestry, and Foresters,” “War and Peace,” “Governing the Keystone State,” “Water, Energy, and Power,” and “Natural Engagements.” The last section shows a side of Pinchot his critics rarely acknowledge. They are quick to lambaste him as a utilitarian conservationist who favored building a dam in Yosemite National Park to provide water to San Francisco. But the nation’s first forester loved nature. He could write reflectively, if not a little romantically, about the joys of fishing with his wife, and he could be rather evocative when talking about sailing across the Pacific Ocean. On the whole, this is an excellent introduction to Pinchot. (JL) □

PUBLICATIONS OF THE FOREST HISTORY SOCIETY

These are books and films available from the Forest History Society on our website at www.ForestHistory.org/Publications.

From THE FOREST HISTORY SOCIETY

Issues Series—\$9.95 each

Books in the Issues Series bring a historical context to today's most pressing issues in forestry and natural resource management. These introductory texts are created for a general audience.

America's Fires: A Historical Context for Policy and Practice, Stephen J. Pyne

America's Forested Wetlands: From Wasteland to Valued Resource,
Jeffrey K. Stine

American Forests: A History of Resiliency and Recovery,
Douglas W. MacCleery

Canada's Forests: A History, Ken Drushka

Forest Pharmacy: Medicinal Plants in American Forests, Steven Foster

Forest Sustainability: The History, the Challenge, the Promise,
Donald W. Floyd

Genetically Modified Forests: From Stone Age to Modern Biotechnology,
Rowland D. Burdon and William J. Libby

Newsprint: Canadian Supply and American Demand, Thomas R. Roach

Wood for Bioenergy: Forests as a Resource for Biomass and Biofuels,
Brooks C. Mendell and Amanda Hamsley Lang

Other Publications

A Hard Road to Travel: Lands, Forests and People in the Upper Athabasca Region, Peter J. Murphy, et al., cloth \$49.95, paper \$29.95

Bringing in the Wood: The Way It Was at Chesapeake Corporation,
Mary Wakefield Buxton, cloth \$29.95, paper \$19.95

Common Goals for Sustainable Forest Management, V. Alaric Sample and Steven Anderson (eds.), \$24.95

Cradle of Forestry in America: The Biltmore Forest School, 1898–1913,
Carl Alwin Schenck, \$10.95

Forest Aesthetics, Heinrich von Salisch, trans. by Walter L. Cook Jr. and Doris Wehlau, \$24.95

Forest and Wildlife Science in America: A History,
Harold K. Steen (ed.), \$14.95

Forest Management for All: State and Private Forestry in the U.S. Forest Service, Lincoln Bramwell, \$10.95

Forest Service Research: Finding Answers to Conservation's Questions,
Harold K. Steen, \$10.95

From Sagebrush to Sage: The Making of a Natural Resource Economist,
Marion Clawson, \$9.95

Ground Work: Conservation in American Culture, Char Miller, \$19.95

Jack Ward Thomas: The Journals of a Forest Service Chief,
Harold K. Steen (ed.), \$30.00

Millicoma: Biography of a Pacific Northwestern Forest,
Arthur V. Smyth, \$12.95

Pathway to Sustainability: Defining the Bounds on Forest Management,
John Fedkiw, Douglas W. MacCleery, V. Alaric Sample, \$8.95

Plantation Forestry in the Amazon: The Jari Experience, Clayton E. Posey,
Robert J. Gilvary, John C. Welker, L. N. Thompson, \$16.95

Proceedings of the U.S. Forest Service Centennial Congress: A Collective Commitment to Conservation, Steven Anderson (ed.), \$24.95;

The Chiefs Remember: The Forest Service, 1952–2001, Harold K. Steen, cloth \$29.00, paper \$20.00

The Forest Service and the Greatest Good: A Centennial History,
James G. Lewis, paper \$20.00

Tongass Timber: A History of Logging and Timber Utilization in Southeast Alaska, James Mackovjak, \$19.95

View From the Top: Forest Service Research, R. Keith Arnold,
M. B. Dickerman, Robert E. Buckman, \$13.00

With DUKE UNIVERSITY PRESS

Changing Pacific Forests: Historical Perspectives on the Forest Economy of the Pacific Basin, John Dargavel and Richard Tucker, paper \$5.00

David T. Mason: Forestry Advocate, Elmo Richardson, \$8.00

Bernhard Eduard Fernow: A Story of North American Forestry,
Andrew Denny Rodgers III, \$5.00

Origins of the National Forests: A Centennial Symposium,
Harold K. Steen, cloth \$10.00, paper \$5.00

Changing Tropical Forests: Historical Perspectives on Today's Challenges in Central and South America, Harold K. Steen and Richard P. Tucker, cloth \$10.00, paper \$5.00

With GREENWOOD PUBLISHING GROUP, INC.

Beyond the Adirondacks: The Story of St. Regis Paper Company,
Eleanor Amigo and Mark Neuffer, \$35.00

Lost Initiatives: Canada's Forest Industries, Forest Policy and Forest Conservation, R. Peter Gillis and Thomas R. Roach, \$15.00

With ISLAND PRESS

The Conservation Diaries of Gifford Pinchot, Harold K. Steen (ed.), cloth \$29.00

With LOUISIANA STATE UNIVERSITY PRESS

Forestry in the U.S. South: A History, Mason C. Carter, Robert C. Kellison, and R. Scott Wallinger, \$65.00

With UNIVERSITY OF GEORGIA PRESS

Crusading for Chemistry: The Professional Career of Charles Holmes Herty,
Germaine M. Reed, \$20.00

With UNIVERSITY OF NEBRASKA PRESS

This Well-Wooded Land: Americans and Their Forests from Colonial Times to the Present, Thomas R. Cox, et al., \$27.95

With UNIVERSITY OF WASHINGTON PRESS

George S. Long: Timber Statesman, Charles E. Twining, \$10.00

Phil Weyerhaeuser: Lumberman, Charles E. Twining, \$10.00

The Forested Land: A History of Lumbering in Western Washington,
Robert E. Ficken, \$10.00

The U.S. Forest Service: A History (Centennial Edition), Harold K. Steen, cloth \$20.00, paper \$15.00

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

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:

<https://foresthistor.org/research-explore/oral-history-interview-collection>.



FOREST HISTORY SOCIETY

is a nonprofit educational institution. Founded in 1946, it is dedicated to advancing historical understanding of human interactions with forested environments.

Officers

Doug Decker, *chair*
 Kent Gilges, *co-vice-chair*
 Douglas W. MacCleery, *co-vice-chair*
 Chris Zinkhan, *immediate past chair*
 Henry I. Barclay III, *treasurer*
 Steven Anderson, *secretary and president*

Board of Directors (Fall 2017–Fall 2018)

Henry I. Barclay III, Lehmann, Ullman and Barclay LLP, Birmingham, AL*
 Matthew Booker, North Carolina State University, Raleigh, NC
 Chris Boyer, University of Illinois/Chicago, Chicago, IL
 Chris Davidson, WestRock, Richmond, VA
 Doug Decker, (ret.) Oregon Department of Forestry, Portland, OR*
 C. A. "Chip" Dillon, Vertical Research Partners, Summit, NJ
 Stephen Fairweather, Mason, Girard & Bruce, Inc., Portland, OR
 Shawn Fowler, Frazier & Deeter, LLC, Atlanta, GA
 Kent Gilges, Conversation Forestry, LLC, Canandaigua, NY*
 Rhonda Hunter, Weyerhaeuser Company, Seattle, WA
 Douglas Hutton, King Motion Picture Corporation, Stony Plain, AB
 Bob Izlar, University of Georgia, Athens, GA
 Richard Judd, University of Maine, Orono, ME
 Douglas W. MacCleery, (ret.) USDA Forest Service, Alexandria, VA*
 Peter Madden, Drax Biomass, Inc., Atlanta, GA
 John J. Martin, Duke University, Durham NC
 Glenn Mason, Canadian Forest Service, Ottawa, ON
 Brooks Mendell, Forisk Consulting, LLC, Watkinsville, GA
 Rose-Marie Muzika, University of Missouri, Columbia, MO
 Jonathan Prather, Perella Weinberg Partners, New York, NY
 William McLeod "Mac" Rhodes, Charleston, SC
 Michelle Steen-Adams, USDA Forest Service, Portland, OR
 Ellen Stroud, Pennsylvania State University,
 Rick Titcomb, (ret.) Weyerhaeuser Family Foundation, Seattle, WA
 Charles VanOver, Forest Investment Associates, Atlanta, GA
 N. Lynn Wilson, Louisiana Pacific Corporation, Nashville, TN
 Chris Zinkhan, The Forestland Group LLC, Chapel Hill, NC*
 *member, executive committee

USDA Forest Service Liaison

vacant

National Park Service Liaison

Donald Stevens, National Park Service, Omaha, NE

Emeritus Members of the Board

Herbert I. Winer, New Haven, CT

Staff

Steven Anderson, *president*
 Andrea H. Anderson, *administrative assistant*
 Janet Askew, *assistant director for administration*
 Valerie Bass, *development program coordinator*
 Barbara J. Cushing, *campaign associate*
 Dave Gunderson, *library volunteer*
 Laura Hayden, *development associate*
 Jason Howard, *librarian*
 Eben K. Lehman, *director of library and archives*
 James G. Lewis, *historian*

Senior Research Fellow

Edgar B. Brannon, Brannon and Associates, Inc.
 Gil Latz, Indiana University–Purdue University Indianapolis

2017 F. K. Weyerhaeuser Forest History Fellow
 Zachary Brecheisen

**2017 Walter S. Rosenberry Graduate Fellowship
 in Forest and Conservation History**
 Jackson Perry

JOIN THE FOREST HISTORY SOCIETY

*or become a joint member
 of the American Society for Environmental History
 and the Forest History Society*

Name _____ Title _____
 Company/Institution _____
 Address _____
 City/State/Zip _____
 Work phone () _____ Home phone () _____
 E-mail _____
 Employer _____
 Date of Birth _____

PLEASE ENROLL ME AS A MEMBER IN THE FOLLOWING CATEGORY:

FHS Individual **FHS Student:** \$41.00
 \$75.00
 \$100.00 **Institution:** \$150.00
 \$250.00
 \$500.00 **Joint ASEH/FHS Memberships:**
 \$1000 and up \$56.00 student \$126.00 individual

STATISTICAL DATA

Which of the following best describes your employment setting?

College or university Association or foundation
 Federal government Museum or library
 State/local government Other nonprofit
 Private industry K–12 school
 Consultant/Self-employed Retired
 Historical Society Unemployed

Which of the following best describes your current position?

Research/educator Private landowner
 Field forester/technician Journalist
 Staff specialist Student
 Mid-level management Other _____
 Upper-level management

Which of the following best describes your field of expertise?

Anthropology Economics
 History Journalism
 Sociology Education
 Forestry Archeology
 Wildlife Other _____
 Ecology

Which of the following best describes your level of education?

Less than high school Master's degree
 High school Doctoral degree
 College (BA/BS)

PLEASE PAY IN U.S. FUNDS

Enclosed is my check or money order.
 Charge \$ _____ to my credit card.
 Visa MasterCard American Express Discover
 Card # _____
 Expiration Date _____
 Signature _____

PLEASE MAIL YOUR CHECK AND THIS FORM TO:

Forest History Society
 701 William Vickers Avenue
 Durham, NC 27701
 919/682-9319
 www.Forest-History.org

Financial information about this organization and a copy of its license are available from the State Solicitation Licensing Branch at 919/807-2214. The license is not an endorsement by the state.



FOREST HISTORY
SOCIETY

