Currently a good deal of political rhetoric focuses on wasteful government spending and reducing the role of the federal government. But forest economist Robert Healy reminds us that the Weeks Act purchases opposed by so many a century ago have turned out to be one of the best bargains ever made by the federal government, with benefits John Weeks and others never could have anticipated.

THE WEEKS ACT AS A PUBLIC INVESTMENT

There is much discussion these days about government "investments." As an economist, I have to assume that what is meant is a federal expenditure that not only is immediately useful (like hurricane forecasting) but also yields a continuing stream of income or benefits (like improving education at all levels). An appropriate investment for government would also presumably be something unlikely to be done, or done so well, by private capital. Historically speaking, the government has made some exceptionally good investments (such as the Louisiana Purchase) and some very poor ones (like the high-rise public housing projects of the 1950s, many now razed.)

I have been giving some thought to the investment aspects of the Weeks Act forests. From a strictly monetary standpoint, they seem to have been a remarkable bargain for the government. I suspect that even John Weeks and other proponents of land purchase in 1911 did not foresee the vast increase in cheap, marginal farmland that would be dumped on the market and available for government purchase during the 1930s. A combination of the devastation of the small farm sector in the 1920s and 1930s, when millions of people moved from marginal farms to the cities, and the general collapse of economic activity in the Great Depression caused enormous amounts of marginal land to become available for purchase, often through auction for unpaid taxes. Nor did Weeks foresee the enormous increase in demand for rural land, starting in the late 1960s and continuing to the present, for recreation and speculation, and because many urban people simply enjoy owing a piece of the countryside.

In 1912, the federal government used the Weeks Act to buy 287,698 acres at an average price of $5.65 per acre. Purchases during the period 1912–1931 totaled 4.9 million acres at an average price of $4.40 per acre. But then came the Great Depression and the New Deal's conservation programs, and with the latter came greatly increased purchases at greatly reduced prices. Between 1932 and 1942 (when Weeks Act purchases paused because of World War II) the government bought 14.1 million acres, paying on average only $3.44 per acre. In 1934 alone, Weeks Act purchases totaled 4.2 million acres, at an average price of only $2.38 per

BY ROBERT G. HEALY

acre. By 1942, the federal government had purchased a total of 19.1 million acres for $71 million, or only $3.72 per acre.[1]

The bulk of the land bought during the Depression was so worn out by cultivation, logging, and erosion that many considered it essentially worthless. It was the sort of land, found particularly though not exclusively in the Appalachians and the Piedmont South, that pioneer soil conservationist Hugh Hammond Bennett often termed "destroyed." In a speech given in 1934, Bennett said this of land in a Piedmont county in South Carolina,

> *No one lives on the land. From the higher points, all the surrounding country was observed to be much the same: Destroyed land, worn out and abandoned as far as the eye could reach. Silence pervaded the landscape, desolation, irretrievable ruin. Man had laid bare the bosom of the earth to the wrath of the elements. Nature had wreaked vengeance upon this once beautiful countryside; and yet, the same agency had set to work to rebuild what it had torn down. Pine trees had sprung up in every direction. Some of the land was too poor for trees, but much of it was covered with volunteer forests. Thus, the first step toward rejuvenation of the worn-out land was well under way. Unfortunately, the rehabilitation in all probability will require more than a thousand years.*[2]

Bennett had, of course, failed to appreciate that the volunteer pines would form the basis for a new kind of lumber and paper industry, and that nature's rebuilding would in a surprisingly short time create forests with values other than monetary.

To get a close-up view of one of these Depression-era purchases and its fate, in the spring of 2011 I visited the Talladega National Forest in central Alabama. The low price at which this land was purchased by the government was remarkable even by the standards of the Great Depression—just $2 to $4 per acre. Consider that a nationwide survey of construction workers done by the government in 1936 found average wages of $0.92 per hour, or $7.36 for an eight-hour workday. Another source estimates average wages per year in 1935 at $1,368, or $6.25 per day. And President Franklin Roosevelt fought for a national minimum wage of $0.25 per hour, or $2 per day. Using these as guidelines, an average day's work for an employed person could have bought almost three acres in Alabama's Clay County ($2.14 per acre) or Cleburne County ($2.36), or nearly two acres in Bibb County ($3.23 per acre) or Perry County ($3.40). Even a person making the national minimum wage

FROM OTTO G. KOENIG, "THE WEEKS ACT AND OUR NATIONAL FORESTS," U.S. FOREST SERVICE HISTORY COLLECTION, FOREST HISTORY SOCIETY

The impact of the restoration work carried out on Weeks Act forests can be seen on the same parcel of land on the De Soto National Forest in Mississippi. The top photo was taken in 1937, the bottom one in 1954.

could have purchased more than half an acre with a day's work.

A fundamental finding from this examination was that these were truly the lands that nobody wanted. Indeed, the attitude at the time seemed to be that no one should have ever settled there; no one should have ever tried to make a living from that land. Many parts of the Talladega were made up of low, stony mountain ridges, accessible by neither railroad nor paved roads. The people who lived there were isolated mountain folk who produced little of value and were in many cases happy to move off such unpromising land. An expert on local history tells the story of an old woman, then in a nursing home, who had been given $400 for her farm by the government. "She was quite pleased to get the money," he said, "and remarked at the time that 'I would have sold that land for the price of a candy bar.'"[3] Other lands had belonged to a large timber company that had removed anything of value and then abandoned the land rather than pay property taxes.

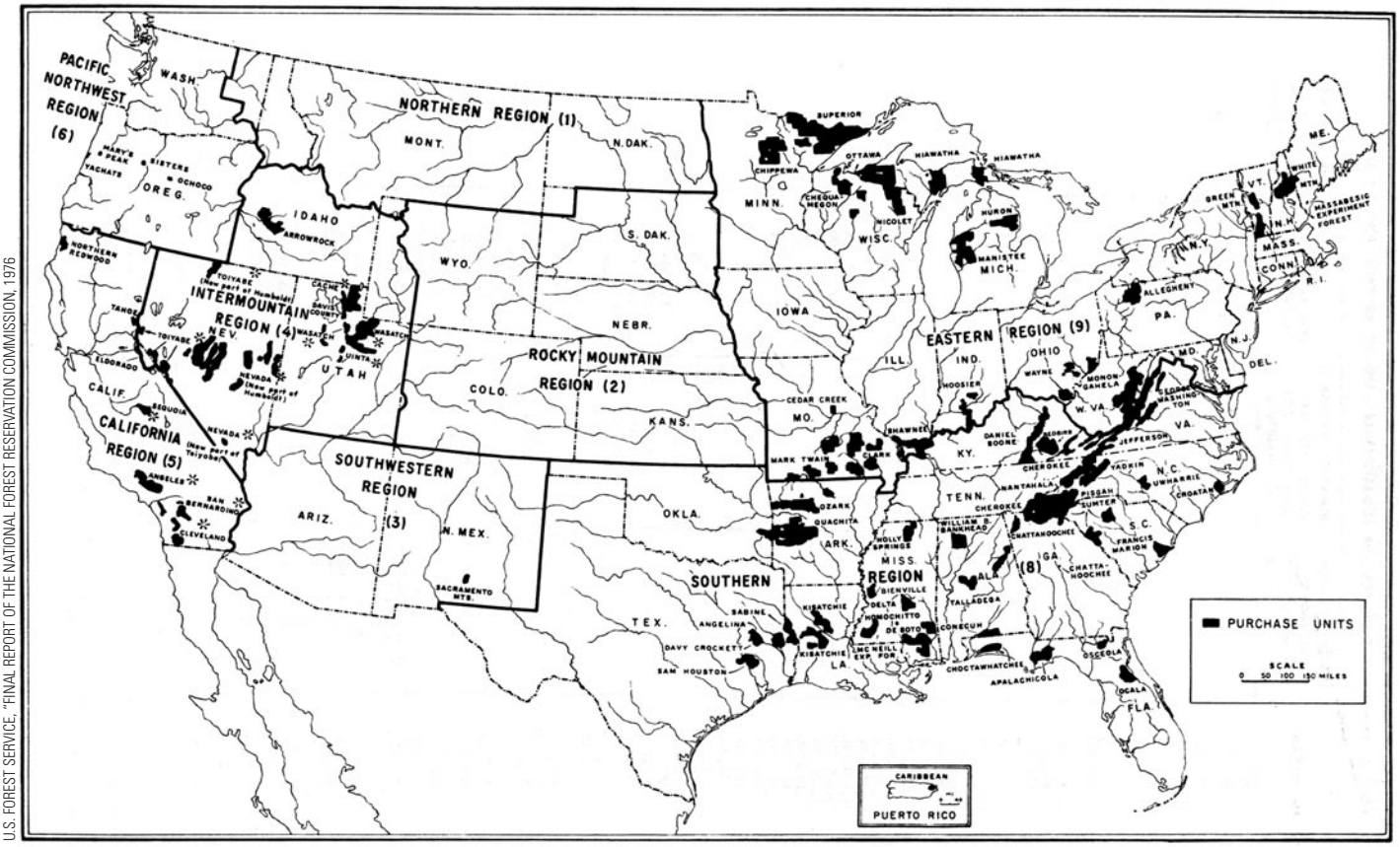
These lands that nobody wanted—lands now part of the Talladega, lands now restored—are now worth $1,500 to $2,000 per acre. One Forest Service employee noted that descendants (often the grandchildren) of people who had sold land now in the national forest sometimes felt that the government had in some way taken advantage of their kinfolk. And they also expressed nostalgia for what was once family land. This feeling probably does not reflect the view of the actual sellers, who may have loved some aspects of their way of life but regarded the land itself as a very poor place to make a living.[4]

INVESTMENT RETURNS

As someone who has long studied rural land values, I can assert with some confidence that an "average market price" for forestland simply does not exist. For example, as of this writing, one-to five-acre lots for houses near the first tract purchased under the Weeks Act in North Carolina range from $3,000 to $10,000; lots adjacent to the White Mountain National Forest in New Hampshire with views of the mountains can sell for up to $100,000. And even if one could assign an average price, the eastern national forests include areas of unusual scenic value (think of the Blue Ridge Parkway through the Pisgah, Nantahala, and George Washington national forests, or the Appalachian Trail through the White Mountains) and timber stands that are older and better managed than the "average" for their respective states.

So let us try another approach. In 1940 the government purchased 545,000 acres at $4 per acre. For argument's sake, assume that all the eastern national forests were worth $4 per acre at that time. What are they worth today? Let us assume the government (adventurously) invested that $4 per acre in the stock market. Between 1940 (when the S&P 500 index began) and 2010, a representative average of common stocks increased 8,600 percent.[5] Thus the $4 invested in 1940 would be worth $344. What if the government had instead bought its own bonds with that $4? The return would be lower—for that same time period, an investment in 10-year Treasury bonds would have climbed 2,600 percent—and the $4 acre would now cost $106.[6]

I think that most people would consider either $106 or $344 per acre to be far, far below what the eastern national forests are worth on the market. So there can be little doubt that by buying the Weeks Act forests and hanging on to them for several decades, the government got a bargain, or putting it another way, it made a good long-term investment.[7]



U.S. FOREST SERVICE, "FINAL REPORT OF THE NATIONAL FOREST RESERVATION COMMISSION, 1976

NATIONAL FOREST PURCHASE UNITS APPROVED BY THE COMMISSION EXCEPT THOSE MARKED "*", WHICH WERE AUTHORIZED BY SPECIAL ACTS OF CONGRESS.

OTHER WAYS OF MEASURING VALUE

But clearly the eastern national forests have values far beyond their real estate value. They provide water control, wildlife, timber, and recreation. And they increasingly are seen as reservoirs of biological diversity and possible buffers against some of the effects of climate change. Some of these values were foreseen by Weeks and his colleagues, others were not.

Perhaps the greatest surprise is how rapidly much of the land recovered biologically. Hugh Hammond Bennett predicted the rehabilitation of abused land would take more than a thousand years. But a combination of plant succession (Bennett's "volunteer forests") and replanting by the Civilian Conservation Corps, Agricultural Resettlement Administration, and the Forest Service rather quickly returned cleared and cutover land to dense forest cover. The restoration of forest cover to the new national forests was greatly aided by aggressive control of forest fires and the exclusion of domestic grazing animals. The damage to the soil noted by Bennett was real and was a serious impediment to continued farming. But it rarely held back reforestation, particularly by loblolly pines, which thrive on poor soils. It is very common in many eastern national forests to find deep erosion gullies within well-stocked and valuable stands of trees. Wildlife has returned to a remarkable extent: white-tailed deer, turkey, bear, and beaver, all but extinct in much of the eastern half of the United States by the early 1900s, are now abundant.

Not everything has been recovered, especially if one's standard is recreating the condition of the forest before the arrival of Europeans.[8] The wolf, elk, bison, cougar, and ivory-billed woodpecker are no longer part of the ecosystem.[9] On the other hand, the coyote is found in places where it did not exist in earlier times. And the forest, however impressive, is not full of the truly breathtaking trees of the past—the white pines do not have boles the size of automobiles, the oaks and maples are not 300 or 400 years old, and the loblolly has largely replaced the longleaf. The American chestnut, once making up as much as 25 percent of the tree cover in eastern and southern forests, is no more, a victim not of abusive land practices but of imported blight.

If one considers that the primary reason for passing the Weeks Act was the regulation of the "flow of navigable streams," then Weeks Act forests have fulfilled their statutory purpose. But the link made between forests and water runoff at the heart of the legislation was based on a rather primitive and misguided understanding of the underlying science. The idea that tree cover could regulate stream flow, and thus make rivers and streams flood less in heavy rain and more dependably when there was little rain, was simply not correct. Trees tend to better limit runoff from small storms than from large ones, the effect depends on the tree species (conifers are generally better than deciduous trees), and planting grass can be just as effective as tree cover in absorbing rainfall.[10] Ironically, much of the research that would prove this was undertaken on Forest Service experimental watersheds at places like the Hubbard Brook Forest and the Coweeta Forest, both located on Weeks Act forests, the White Mountain and the Nantahala, respectively.[11]

A secondary consideration for passing the Weeks Act was a desire to promote outdoor recreation and tourism. The Weeks Act forests have fulfilled that promise, although as with watershed protection, the way in which the story actually played out was quite different from what was originally envisioned. With regard to recreation and tourism, the forests did indeed become major

TABLE 2 - GROSS ACREAGE APPROVED FOR PURCHASE UNDER THE WEEKS LAW BY FISCAL YEARS

Year	Acres	Average price	Year	Acres	Average price
1912.....	287,698	$5.65	1946.....	-	$ -
1913.....	425,717	4.71	1947.....	371,671	5.76
1914.....	391,114	4.96	1948.....	96,250	6.91
1915.....	282,900	5.72	1949.....	53,784	7.95
1916.....	54,898	5.76	1950.....	51,569	7.39
1917.....	175,463	4.86	1951.....	17,070	8.62
1918.....	185,199	5.12	1952.....	6,154	8.65
1919.....	103,355	6.35	1953.....	7,242	8.81
1920.....	101,428	4.44	1954.....	6,837	10.54
1921.....	112,397	4.44	1955.....	16,672	7.16
1922.....	242,169	3.41	1956.....	19,866	9.38
1923.....	79,923	4.35	1957.....	7,342	12.69
1924.....	130,290	3.26	1958.....	7,169	14.03
1925.....	247,067	4.80	1959.....	6,012	15.14
1926.....	191,725	3.85	1960.....	5,669	13.95
1927.....	135,088	5.37	1961.....	8,598	12.80
1928.....	261,107	7.65	1962.....	20,335	25.78
1929.....	464,177	3.85	1963.....	16,815	27.27
1930.....	538,048	2.73	1964.....	28,022	32.44
1931.....	547,945	3.55	1965.....	26,489	39.13
1932.....	83,086	2.48	1966.....	168,921	78.09
1933.....	667,314	1.83	1967.....	103,799	67.45
1934.....	4,206,817	2.38	1968.....	111,433	84.19
1935.....	3,661,848	4.09	1969.....	125,681	97.80
1936.....	2,891,040	3.99	1970.....	91,742	125.34
1937.....	410,218	5.06	1971.....	32,281	138.39
1938.....	786,969	3.40	1972.....	78,959	186.83
1939.....	506,039	4.34	1973.....	117,454	149.01
1940.....	544,989	4.00	1974.....	24,636	244.57
1941.....	164,020	4.31	1975.....	11,213	282.69
1942.....	205,811	4.59	1976 & 1977.....	48,315	292.41
1943.....	8,759	4.31			
1944.....	9	66.02			
1945.....	5	194.00	TOTAL APPROVED	20,782,632	

When the National Forest Reservation Commission was dissolved in 1976, the final report contained the tally of gross acreage approved for purchase under the Weeks Act at that time. The total includes land purchases made in the western United States.

destinations. The spread of automobile ownership and major improvement in roads beginning in the 1920s and quickening after World War II meant that these forests would be not just playgrounds for the wealthy, who were expected to arrive by train, but also among the nation's most important lands for mass outdoor recreation. Recreational visits to the Weeks Act forests for 2005–2009 were 44.6 million annually. Moreover, some of the types of recreation were unimaginable in 1910. The national forests of New England and the upper Midwest receive heavy winter use by snowmobilers. Downhill skiing and snowboarding are popular wintertime activities, and in warmer months visitors enjoy driving off-road vehicles and motor boats. And the restoration of the national forests has led to a recent increase in photographing and viewing wildlife, plants, and natural scenery, engaging both local people and those who drive long distances.[12]

UNINTENDED OUTCOMES

Many other economic and social trends affecting forests simply could not have been anticipated in 1911. They include the enormous increases in agricultural productivity that led to the abandonment of tens of millions of acres of marginal farmland and its reversion to forest, particularly in the 1920s and 1930s; the proliferation of second homes in mountain areas and other scenic spots that began in the 1960s; the invention of methods of making kraft paper and boxes (in 1914) and newsprint (in the late 1930s) from southern pines; the invention of plywood and oriented-strand board; and the scientific and public concern that emerged in the mid-1960s about endangered animal species that went well beyond those taken by hunters.

The net effect of these unforeseen factors on the Weeks Act forests has been complex and significant. By occupying the "high ground" in the Appalachians and other mountain ranges, the Weeks Act forests have saved views and recreational opportunities that surely would have been privatized through second homes. The logging companies so vilified in the time of John Weeks have played a part in the recovery of the eastern national forests. The reforestation of abandoned farmland, coupled with changes in lumber and paper technology, led large forest products companies to purchase and manage large tracts in the Northeast, South, and Lakes states on a sustainable basis. Rather than conduct the cut-and-run logging of the past, they sought dependable supplies of timber for their expensive new mills. This timber came from their own land, from nonindustrial forestland, and from the Weeks Act national forests. The demand for a continual timber supply encouraged replanting after harvest. The preferred species were fast-growing pines, which were then clearcut on rotations of 30 years or so. From 1930 to 1975, the Forest Service applied that industrial forestry recipe widely on the Weeks Act forests. Public concern over clearcutting and the planting of pine monocultures then led to a series of federal laws and important court cases that quite suddenly shifted the Forest Service's management practices. Today, timber programs on Weeks Act forests are much smaller than before, and management for ecological diversity and protection of endangered species (the red-cockaded woodpecker is a prime example) has become a major emphasis.

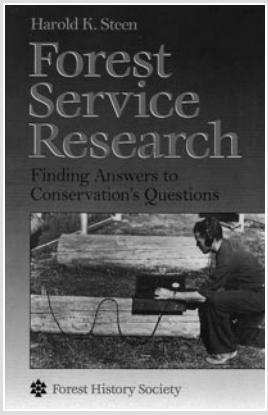
So the Weeks Act has not only been a good financial investment for the government but has also created a system of forests whose valuable functions go well beyond those envisioned in 1911. The protection of headwaters mentioned in the act has proved to be only one of many functions and values of these forests. And the recreational and timber production goals that were the unmentioned, but not so hidden, justification for the act have proved to be quite different from what was imagined in 1911. The Weeks Act has been a remarkably flexible public policy, creating important public benefits much larger than, and quite different from, those sought by its proponents. □

Robert Healy is Professor Emeritus of Environmental Policy at Duke University's Nicholas School of the Environment. With William E. Shands he co-authored The Lands Nobody Wanted: Policy for National Forests in the Eastern United States *(1977).*

NOTES

1. Data on land prices from U.S. Forest Service, *Final Report of the National Forest Reservation Commission* (Washington, DC: U.S. Department of Agriculture, 1976).
2. Hugh Hammond Bennett, "Soil Erosion a Costly Farm Evil," speech delivered at Ohio State University, January 31, 1933. Accessed August 1, 2011, at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/?ss=16&navtype=SubNavigation&cid=nrcs143_021397&navid=210160000000000&pnavid=2100000000000000&position=Not%20Yet%20Determined.Html&ttype=detail&pname=Speeches%20of%20HHB,%20Soil%20Erosion%20a%20Costly%20Farm%20Evil%20%7C%20NRCS.
3. Interview, Anniston, Alabama, April 12, 2011.
4. Interview, Brent, Alabama, April 12, 2011.
5. The S&P 500 tracks the common stock of most of the country's largest firms. The year 1940 was the earliest time for which I could find a time series stretching to the present.
6. Actually, the real return would have been less, since inflation over the period was 1,500 percent. In this calculation, all figures, for both 1940 and 2010 are in then-current dollars.
7. The calculations are meant to be broadly illustrative. S&P 500 returns include reinvested dividends, as does the index of 10-year government bonds. Certainly the government would have made a higher return in the stock market if it had included small company securities in its portfolio. But that would have been quite unrealistic—even more so than investing in the 500 largest firms, which make up the S&P 500. Returns on government's actual purchases, rather than using a 1940 base, would affect the return somewhat, but the calculations are tedious and unlikely to much affect the results.
8. This idealized state (the virgin or old-growth forest) tends to be the standard against which we measure environmental degradation. In fact, ecologists and environmental historians now emphasize the fact that large areas of "primeval" forest were heavily influenced by both natural forces, such as fire and windthrow, and the activities of Native Americans. See, for example, William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill & Wang, 1983).
9. Greta Nilsson, "Endangered Species Handbook," accessed at http://www.endangeredspecieshandbook.org/dinos_eastern.php. There are still wolves in the forests of the upper Great Lakes states and a few cougars in Florida, and possibly in the Appalachians.
10. Herrera Environmental Consultants, Inc., *The Effects of Trees on Stormwater Runoff* (Seattle: Herrera Environmental Consultants, Inc., 2008), 1, accessed at http://www.psparchives.com/publications/our_work/stormwater/lid/clearing_grading/Effect%20of%20Trees%20on%20Stormwater%20Lit%20Review-Herrera.pdf.
11. Some scientists testifying before Congress during the Weeks Act debates had a better idea of the relationship than did others; the head of the U.S. Weather Bureau, for example, said that only precipitation, not land cover, determined runoff. See "The Battle for the Weeks Bill," *American Forestry* 16 (March 1910): 133–44.
12. See H. Ken Cordell, "The Latest on Trends in Nature-based Outdoor Recreation," *Forest History Today* 14:1 (Spring 2008): 4–10.

U.S. Forest Service History from the Forest History Society…



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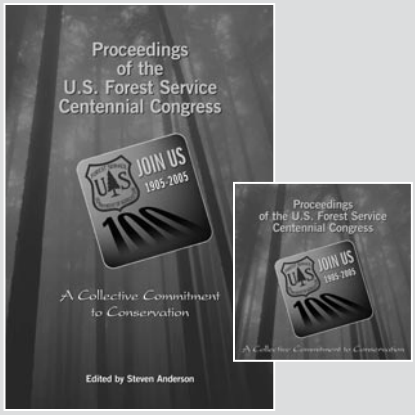

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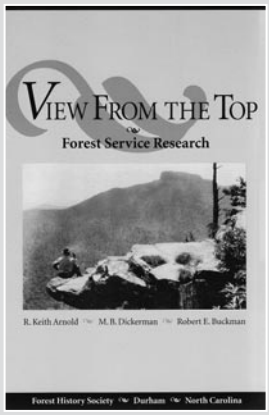

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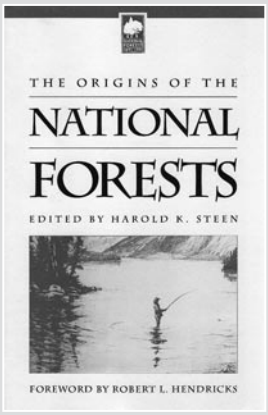

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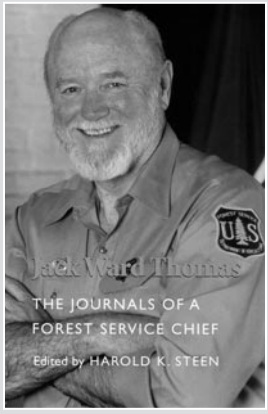

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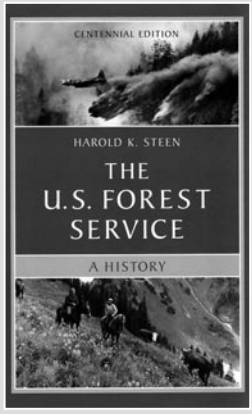

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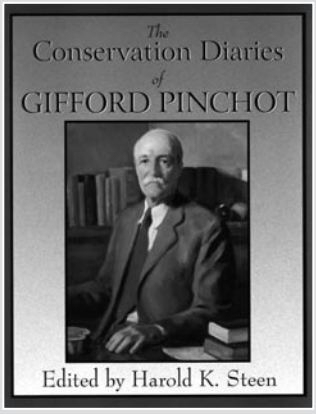

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