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Introduction

In an address to the annual meeting of the Agricultural History Society held in Washington, DC, April 15, 1937, Gifford Pinchot, long retired as first chief of the US Forest Service, took credit for creating American forestry. By forestry, he meant the science of managing stands of trees as agricultural crops. In his opinion, no American before him had worked forests in that way. Because the results of a forester's work do not appear during his lifetime, the forester is trained to take the long-term view, the application of which Pinchot called conservation.[1]

In taking credit for creating American forestry, Pinchot did not mean to detract from the preliminary work of those before him who had advocated for the protection of forests. Having knowledge of timber scarcities in Europe, some American colonies did try to regulate the sale and transport of timber; while the colonial government sought to reserve tall timbers for ship masts. Beginning in 1817, the US Congress passed a series of laws to create and protect certain tree plantations for naval timber.[2]

Beyond the military aspect, protecting and preserving forests had been of both economic and scientific interest to the founding fathers, enlightened agriculturists with intellectual roots in Europe. Andrea Wulf has argued that President James Madison (in retirement) was the first politician to speak publicly about the "excessive destruction of timber," to call for remedial action, and to express some understanding of the "balance of nature." In his "Address to the Agricultural Society of Albermarle" (1818), Madison noted that, through their successes, American farmers

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had increased the number of plants and animals "beyond their natural amount"; and he warned that by surpassing what we now call the historical range of variability, agricultural achievements could work against humanity's best interests.[3]

The eminent Vermonter George Perkins Marsh elaborated on those views in his address to the Agricultural Society of Rutland County in 1847. The views he expressed would become the theme of his major work, *Man and Nature or, Physical Geography as Modified by Human Action*: when human activity modifies nature to the extent that nature can no longer repair itself, such activity becomes detrimental to humanity in both the short and long term. Every Vermonter could see the results of timbering steep hillsides: erosion of topsoil, invasion of noxious weeds, and scattering of seeds to nearby arable lands. Marsh called for more careful selection of stands meant for timbering and suggested that the time had come to emulate those European nations in which timbering was regulated by law. Though not advocating government ownership of forests, Marsh appealed "to an enlightened self-interest to introduce the reforms, check the abuses, and preserve us from an increase of the [timbering] evils."[4]

As an early critic of the notion that America's natural resources are inexhaustible, Marsh added a moral dimension to the cause of forest conservation. "The destruction of the woods," he wrote, was "man's first physical conquest, his first violation of the harmonies of inanimate nature."[5] To restore disturbed harmonies, the agriculturist needed to "become a co-worker with nature in the reconstruction of the damaged fabric which the negligence or the wantonness of former lodgers has rendered untenable."[6]

But Marsh was no lover of pristine nature. In the case of forests, he favored growing trees for their timber, noting "the great general superiority of cultivated timber to that of strictly spontaneous growth." He believed the careful reader of late-eighteenth- and early-nineteenth-century French treatises on forestry would realize "that the sooner a natural wood is brought into the state of an artificially regulated one, the better it is for all the multiplied interests which depend on the wise administration of this branch of public economy."[7]

Despite *Man and Nature* and reports by scientists and federal officials who had observed the results of forest destruction, during the immediate post–Civil War period the US Congress continued to pass preemption laws; to transfer public lands to the states, which ended up in the hands of timber interests; and to grant public lands, many forested, to the railroads. In contrast, several states and territories on the Great Plains and in the Intermountain West had adopted legislation to protect forests and encourage tree planting. In 1851 the general assembly of Deseret enacted penalties for anyone wasting or otherwise destroying timber in the Wasatch Range, the source of water for farms in the Great Salt Lake Basin. In 1876 Colorado became the first state to write conservation of forests into its state constitution.[8]

Meanwhile, Nebraska had emerged as the preeminent tree-planting state; in 1869 the legislature provided property tax exemptions to settlers planting windbreaks, shade trees, and fruit trees and later made stock growers liable for damage to trees and shrubs caused by their herds. The Nebraska State Board of Agriculture established Arbor Day as a special day for the care and planting of trees.[9]

Nebraska US senator Phineas W. Hitchcock introduced the Timber Culture Act of 1873, which provided 160 acres of unappropriated public land to anyone who would agree to plant trees on 40 of those acres and keep them healthy for eight years. Deficiencies in the act, however, allowed speculators to amass claims, which led to its eventual repeal as part of the Forest Reserve Act (discussed later). That same year the American Association for the Advancement of Science recommended to Congress that a knowledgeable individual be hired to study the nation's existing timber resources, as well as their preservation and renewal, and proposed legislation for their protection. Although the legislative effort failed, Representative Mark H. Dunnell (R-MN) managed to attach a rider to the US Department of Agriculture appropriations bill for 1876, setting aside $2,000 for the study. Dunnell secured the appointment of Franklin Benjamin Hough—naturalist, physician, and longtime member of the association—to conduct the study.[10]

In fact, Hough had led the association's effort, outlined in his landmark paper "On the Duty of Governments in the Preservation of Forests." Because of the nation's absolute dependence on timber and on forests for water, Hough stated that the time had come for the United States to adopt a *system* to manage and regulate public forests. He praised the French government's actions to preserve forests, going back to the 1669 Forest Ordinance. But he recognized that France's autocratic approach would not work in the republican United States, where "we must begin at the centre of power, and that centre is the circumference. We must make the people themselves familiar with the facts and the necessities of the case."[11] Yet no matter how much the public knows, we still need laws to regulate and protect the woods, just as we have agreed to have laws for the management of roads and bridges and for other matters of public usefulness.[12]

Hough's appointment as forest agent in the Department of Agriculture marked the beginning of federally sponsored forestry, but public forests remained under the General Land Office in the Department of the Interior. Thus the situation, in the words of historian-archivist Harold Pinkett, was one "where one department, Agriculture, was placed in charge of forestry without forests, while another, Interior, remained in charge of forests without forestry."[13] In fairness, Carl Schurz, the distinguished secretary of the interior (1877–81), did establish a system of special agents to detect forest abuses, though Congress failed to appropriate sufficient funds for effective patrol over the hundreds of millions of acres; and he

did recommend that forestlands in the public domain be withdrawn from sale to private parties.

Secretary Schurz's efforts combined with Hough's forestry reports—for which he was promoted from forest agent to chief of the Division of Forestry, still a one-person operation within the Department of Agriculture—undoubtedly contributed to increased interest in forest protection. At the first American Forestry Congress meeting at Cincinnati in 1882, its secretary, Bernhard Eduard Fernow, presented a paper recommending that owners of American woodlands adopt the principles of European forestry to improve their stands, reduce waste, and remain in business. A native of Prussia, Fernow was the first formally trained forester to practice in the United States and was a founding member of the American Forestry Association. In 1886 Fernow succeeded Hough as chief of the Division of Forestry. He used his position with the American Forestry Association to lobby for repeal of the Timber Culture Act, which became known as the Forest Reserve Act of 1891.[14]

During his last year at Yale (1889–89), Gifford Pinchot sought the advice of Fernow, as chief of the Division of Forestry, on how best to prepare for a career as a professionally trained forester. Pinchot had credited his father, a wealthy and philanthropic New York City merchant, with suggesting such a career. Pinchot père also owned a large estate at Milford, along the Delaware River in northeastern Pennsylvania, where he sought to restore the woods. Pinchot's parents gave him books on forestry, and the Yale Library contained more, but Gifford remembered that he had found only one book, Jules Clavé's *Etudes sur l'économie forestière* (1862), that dealt with "the application of Forestry to the forest."[15] At Fernow's recommendation and through family connections, Pinchot enrolled at the prestigious French national forestry school in Nancy, where Lucien Boppe, professor of silviculture, took him under his wing. It was Boppe, Pinchot recalled, who taught him that the "master quality" of the forester was the "forester's eye," an innate feel for what needed to be done. From field trips to nearby managed forests, Pinchot reported that he had gained his "first concrete understanding of the forest as a crop, and I became deeply interested not only in how the crop was grown, but also in how it was harvested and reproduced." [16] He was impressed, furthermore, that "the forest supported a permanent population of trained men . . . and not only a permanent population but also permanent forest industries, supported and guaranteed by a fixed annual supply of trees ready for the ax."[17] In a nutshell, this was what he and his successors would seek in the management of America's national forests.

After he left France, Pinchot spent one month with Superintendent Ulrich Meister at the Zurich municipal forest, which had been managed for timbering since the seventeenth century and was considered the most instructive forest in Europe. His experience in Switzerland convinced Pinchot of the urgent need for

the US government to regulate timbering in public and, to some degree, privately owned forests. Shortly after his return to the United States, Fernow arranged for Pinchot's first public appearance as a forester. Before a joint meeting of the American Forestry Association and the American Economic Association, Pinchot read a paper on "Governmental Forestry Abroad" in which he favorably compared Swiss forestry, where foresters exercised professional discretion, to German forestry, where government rules covered the smallest details.[18]

Again through family connections, Pinchot landed his first job, as manager of the Biltmore Forest near Asheville, North Carolina. Proprietor George W. Vanderbilt II provided Pinchot with the opportunity to adapt into practice what he had learned in Europe. In December 1893 Pinchot moved to New York City to start his own business as "consulting forester," hiring his Yale classmate, Henry S. Graves, as his assistant. From that business, Pinchot and Graves launched their careers as public foresters, which would eventually lead them to the Black Hills.[19]

NOTES

1. Gifford Pinchot, "How Conservation Began in the United States," *Agricultural History* 11, no. 4 (October 1937): 255.

2. Harold T. Pinkett, *Gifford Pinchot, Private and Public Forester* (Urbana: University of Illinois Press, 1970), 6–8.

3. Andrea Wulf, *Founding Gardeners: The Revolutionary Generation, Nature, and the Shaping of the American Nation* (New York: Alfred A. Knopf, 2011), 205–7.

4. George Perkins Marsh, "Address Delivered before the Agricultural Society of Rutland County, Sept. 30, 1847," 17–19, at http://memory.loc.gov/ammem/today/sep30.html; accessed March 2010.

5. George Perkins Marsh, *Man and Nature or, Physical Geography as Modified by Human Action,* ed. David Lowenthal (Cambridge: Harvard University Press, 1965 [1864]), 119.

6. Ibid., 35.

7. Ibid., 260–61.

8. John Ise, *The United States Forest Policy* (New Haven: Yale University Press, 1920), 28.

9. John F. Freeman, *High Plains Horticulture, a History* (Boulder: University Press of Colorado, 2008), 19–20.

10. Harold K. Stern, *The U.S. Forest Service: A History* (Seattle: University of Washington Press, 2004), 11–13.

11. Franklin B. Hough, "On the Duty of Governments in the Preservation of Forests," *Proceedings of the American Association for the Advancement of Science,* August 1873, Portland, ME, 4, http://memory.loc.gov/ammem/amrvhtml/cnchron2.html; accessed February 2008.

12. Ibid., 6.
13. Pinkett, *Gifford Pinchot*, 9.
14. Ibid., 10–11.
15. Gifford Pinchot, *Breaking New Ground* (Washington, DC: Island, 1998 [1947]), 4.
16. Ibid., 11.
17. Ibid., 13.
18. Ibid., 35.
19. Ibid., 69–73.