Part I

Ethical Systems in Forestry

New Attitudes about Forest Values

Answers to critical questions about forestry lie partly in the attitudes and values humans have about forests and their proper management and use, and these attitudes have been changing, over time, as American society has urbanized and become more affluent.[1] In contrast with the prevalent attitudes of native Americans, the forests and forest "wildernesses" of North America were originally seen by European settlers to be barriers to progress and threats to survival on a physical level, and also as locations for "savagery" and immorality, as they understood these eurocentrically-biased notions.[2] But forests were also basic sources of food, fuel, land, lumber, and other useful products that people needed to survive. In fact, until well into the twentieth century, trees provided "the most valuable raw material in American life and livelihood: wood," and wood manufacturing was one of the most important manufacturing industries in the United States as late as 1920. Aside from the milling of lumber, wood was used in a great variety of ways for quite an immense number of domestic and industrial products, ranging from construction materials to chemicals.[3] As recently as 1980 wood still accounted for "one-quarter of all the industrial raw materials used in the country," though this picture has now changed because of such factors as the rise of other forms of manufacturing and the use of other materials such as steel and plastic.[4] Moreover, forests have served other valuable purposes in our economy such as preventing floods and maintaining a cleaner and more constant flow of water for domestic water supplies, irrigation, and hydroelectric

1. Ronald Inglehart, *Cultural Shift in Advanced Industrial Society* and *Modernization and Postmodernization*, referred to above in note 5, General Introduction.

2. Chapter 2 in Roderick Nash, *Wilderness and the American Mind*, 3d rev. ed., 1982.

3. Williams, *Americans and Their Forests*, p. 5.

4. Ibid., p. 8.

power generation. In short, it is hard to imagine how our economic system could have prospered originally or could prosper today without forests and the material resources they provide.

Environmental historians conclude that these earlier colonial attitudes about forests began to change in the United States during the nineteenth century.[5] New ideas about the value of forests became important as old ideas about wilderness began to change. Forests came to be appreciated as more than sources of raw materials and valuable wood products; they were seen also as places of great natural beauty and spiritual inspiration and, later in the century, as locations for recreation and rejuvenation of the body and spirit. Under the influence of the theology of deism, protestant religious leaders, for example, began to emphasize the idea that, after all, since God had created and designed nature, wild forests were thus a reflection of God's very existence, not to mention his power and purposes. American novelists and artists such as Henry David Thoreau and the Hudson River painters began to glorify forested landscapes in their "natural" state, finding forests to be sublime aesthetically and a joy to behold even when not altered by human labor for commercial and agricultural purposes.[6] Later in the century, as the country began to urbanize and more and more people lived away from forests and wilder forest landscapes, city residents began to think of forests in more romantic terms and as places to visit for nonmaterialistic reasons. Moreover, as more and more of the midwestern and western forests in the last quarter of the nineteenth century were raided for their timber resources by large land and resource corporations, including railroad and timber companies, and as government officials, conservation groups, and private citizens began to call attention to this fact and to the possibility of a "timber famine," a strong forest conservation movement developed in the 1880s that had as its aim the reservation of forests for both economic and noneconomic purposes.[7]

Foundation Forest Philosophies

By 1900, two different philosophical conceptions about the nature and purposes of forests and the directions of forest management took hold and competed for public attention. On the one hand, the resource conservation philosophy became important in government forestry and resource management, under the vigorous shepherding of such public foresters as Bernhard Fernow and Gifford Pinchot. On the other hand, the forest preservation movement developed behind the direction of such national figures

5. Nash, *Wilderness and the American Mind;* see also Joseph M. Petulla, *American Environmental History* (San Francisco: Boyd and Fraser Publishing Company, 1977).

6. Barbara Novak, *Nature and Culture: American Landscape and Painting, 1825–1875* (New York: Oxford University Press, 1980).

7. Fears about a timber famine in the United States, in the late nineteenth century and later, are discussed by David A. Clary in *Timber and the Forest Service* (Lawrence: University Press of Kansas, 1986).

as Frederich Law Olmstead, perhaps America's most famous landscape architect, and John Muir, founder of the Sierra Club, wilderness theologian, and advocate for the cause of wild forest protection.[8]

To the resource conservationists like Pinchot, forests were to be reserved for utilitarian economic purposes; they were to become "fountains of timber" that would supply the wood manufacturing industry in perpetuity and produce material products that the current and succeeding generations of Americans would need to sustain themselves over time. The idea was that the greatest benefit for society would come from the orderly development and use of forests to yield products such as wood and grass and also returns on capital.[9] Forest preservationists like Muir, on the other hand, promoted the reservation of forests primarily for their scenic, recreational, and psychic benefits. Such conservationists obviously valued forests as habitats for animals and plants, but their preservation rationales were based on the aesthetic, spiritual, and recreational values in forests.[10] Most of them were not opposed to commercial exploitation of forests at some level of extraction, but they did believe that forests should become "garden[s] for the recreation of the lover of nature," to use the words of one of America's first conservationists, George Perkins Marsh.[11] In so doing, they championed a different way of thinking about forests and forest management, though one that was consistent with earlier European ideas about forest uses.[12] Because these two strains of philosophy are deeply embedded in our normal reactions to forests, and because we need forests for both kinds of purposes, these philosophies have had a major impact ever since on the thinking of Americans about what forests are and how they should be used. The two philosophies have significantly affected the management and use of forests, parks, and wilderness areas on federal, state, and other lands in all parts of the country, and were basic motivations behind the creation of both the national forest and the national park systems.

Philosophical and ethical notions about forests have a way of evolving over time, however, to incorporate new realities and new beliefs about nature. One such change occurred in the first half of the twentieth century, as evolutionary theory and the

8. Max Oelschlaeger does a masterful job of explaining Muir's significance as a wilderness thinker in *The Idea of Wilderness: From Prehistory to the Age of Ecology* (New Haven: Yale University Press, 1991).

9. Gifford Pinchot, *A Primer of Forestry, Part II: Practical Forestry* (USDA Bureau of Forestry, Washington, D.C.: Government Printing Office, 1905), p. 11.

10. J. Baird Callicott, "Current Concepts in Conservation," paper presented at the Program for Ethics, Science and the Environment, Oregon State University, May 1997.

11. See Nash, *Wilderness and the American Mind*, p. 105.

12. Bryan Norton does an illuminating comparison of the conservation ideas of Pinchot and Muir, arguing that they were both well within the "anthropocentric" camp of nature valuers with regard to the national forests and that their ideas lay on different ends of a single value continuum. Thus Muir accepted that forests had to be used for economic purposes, and Pinchot believed that forests had aesthetic and recreational value; however, they diverged in regard to the emphases they placed on these values. See Norton's book, *Toward Unity among Environmentalists* (New York: Oxford University Press, 1991).

new science of ecology began to influence the thinking of biologists, foresters, wildlife scientists, environmental scientists, and philosophers of many stripes. These scientific developments came to be seen as fundamental for understanding nature and for interpreting the ethical responsibilities of humans in nature. One thinker who helped to spearhead this process was Aldo Leopold, because of the land ethic he proposed in several of his scientific publications in the 1930s and later in his seminal work *A Sand County Almanac,* published in 1949, a year after his death.[13]

Leopold's relationship to forests and forestry is clear enough; he was trained as a forester at the new graduate school of forestry at Yale University, from 1906 to 1909, then was employed, off and on, by the newly organized U.S. Forest Service in the Southwest and Upper Midwest. He had responsibilities as a forester, forest supervisor, and forest administrator and also, later on, as an academic forester and wildlife management expert. By the time of his death in 1948 he had developed an international reputation as a wildlife ecologist and had been elected president of the Ecological Society of America. He helped found the Wilderness Society, served on the state game commission in Wisconsin, and became an influential professor at the University of Wisconsin and speaker in academic and nonacademic circles around the country. Because he was respected for his deeper thoughts about conservation, he was often given free reign to publish more literary and persuasive pieces in science journals, and not only articles that recorded his scientific research. He was well aware of the ideological leanings of forestry and its roots in Pinchotian conservation, and sought to steer it in new, more ecologically sensitive directions in the 1930s and 1940s.

For nearly twenty years, *A Sand County Almanac* went largely unnoticed by the public until it was republished in several inexpensive editions just before environmental fervor reached one of its recent peaks on Earth Day 1970. Leopold's ethical ideas at first had a more significant impact on a small group of individuals who were either leaders in the environmental movement or knowledgeable about his work as a result of their own scientific and professional activities. Then, through their enthusiasm and promotion, the land ethic idea became known to so many mainstream environmentalists that *A Sand County Almanac* was seen eventually as "the new testament" of the environmental movement in the early 1970s, not just as a call for a new kind of forestry and wildlife science.[14] Leopold's land ethic achieved this status because it elegantly tied together diverse ideas from ecology, natural history, ethics, the natural resource sciences such as wildlife management and forestry, and Leopold's field observations into a novel, holistic philosophy about the conservation and preservation of "the biotic community." Leopold argued for new values and attitudes that would harmonize our personal behavior and

13. Aldo Leopold, *A Sand County Almanac* (New York: Oxford University Press, 1949).
14. This is Nash's term in his book, *The Rights of Nature* (1989).

environmental practices, including forestry, with the ecological systems of nature, and he managed to delineate in a coherent manner some of the important ingredients of the ecological ethic that many in our society thought we so badly needed. As one historian has noted, more than any other writing, Leopold's classic signaled the arrival of the "Age of Ecology." It combined "a scientific approach to nature, a high level of ecological sophistication, and a biocentric, communitarian ethic that challenged the dominant economic attitude toward land use" that was embodied in resource conservation thinking and commercial ideology in our society at large.[15]

Leopold's land ethic has also had a significant impact on the thinking of academic, environmental philosophers, including some who have made efforts to devise new systems of environmental ethics or to develop the implications of the land ethic itself. Leopold was not a professional philosopher, and his writings raise philosophical issues that require interpretation and further explanation. While his ethic may be serviceable for his followers, professional philosophers are more fussy, intellectually, and demand that an ethic be more fully defensible. Thus, some of Leopold's basic ideas, such as his ecological holism[16] and his assumptions about the foundations of ethics, particularly the assumption that ecological science can provide moral directives, have not always fared well in environmental philosophy.[17] But his ethic did help to crystallize and inspire the thinking of such environmental philosophers as J. Baird Callicott and Holmes Rolston III, two leading representatives of the "holistic" branch of environmental ethics, and George Sessions, one of the more influential American deep ecologists.[18] Callicott has spent considerable intellectual effort to, in his words, "flesh out the arguments which Leopold himself only evoked and to connect his ideas, especially his ethical ideas, with the antecedents in the history of Western philosophy echoing in his rich literary allusions."[19]

15. Donald Wooster, *Nature's Economy: The Roots of Ecology* (Garden City, New York: Anchor Books, 1979), p. 284.

16. Ecological holism in environmental ethics is the view that the biotic community or biosphere as a whole is a primary object of moral consideration, moral respect, or inherent worth. Some philosophers argue that this means the biosphere itself is to take priority over its component species, ecosystem processes, and individuals, such as members of the human race.

17. An example of a philosopher critic of holism is Paul W. Taylor in his landmark of environmental philosophy, *Respect for Nature: A Theory of Environmental Ethics* (Princeton, N.J.: Princeton University Press, 1986). Kristin Shrader-Frechette of the University of Notre Dame, another important figure in environmental ethics, has also led the attack on holism. See K. Shrader-Frechette and E. D. McCoy, *Method in Ecology: Strategies for Conservation* (Cambridge, U.K.: Cambridge University Press, 1993).

18. See, e.g., J. Baird Callicott, *In Defense of the Land Ethic* (Albany, N.Y.: SUNY Press, 1989); and Holmes Rolston III, *Environmental Ethics: Duties to and Values in The Natural World* (Philadelphia: Temple University Press, 1988).

19. Callicott, *In Defense of the Land Ethic*, p. 6. See also J. Baird Callicott, ed., *Companion to A Sand County Almanac: Interpretive and Critical Essays* (Madison: The University of Wisconsin Press, 1987).

Some Recent Forms of Radical Environmental Philosophy

The founding philosophies of American forestry were all constructed with forests and forestry very directly in mind. They were created by applied scientists and designed to provide very general ethical guidelines that would undergird public forest management.[20] Deep ecology and ecofeminism, in contrast, are two recent and much discussed environmental philosophies that have different origins and a more broad social orientation. They draw on philosophical traditions more purposively and make their ethical foundations and norms more explicit. Both were formulated to a large degree by philosophers instead of scientists, and both recognize, as Leopold did, the central importance of reshaping philosophical beliefs and attitudes if society is to practice true conservation. Moreover, they are an outgrowth of public worries about the environmental crisis that emerged in the 1960s, and they respond to social concerns of the day. In agreement with Leopold, they argue that there is a need for a completely novel form of environmental consciousness in industrialized nations, something in fact that is unprecedented in the dominant intellectual traditions of modern industrial culture. They propose a radical reshaping of personal attitudes and social institutions, rather than only reform in our basic worldview, in our typical attitudes toward nature, or in our social practices. At the same time, these two philosophical systems are an outgrowth of somewhat different philosophical and social traditions, are buoyed by somewhat different central concepts, and have somewhat different implications for human behavior in nature.

If these philosophies are to be implemented, forestry and the other applied environmental sciences must dramatically change their principles and practices, as must most humans in industrialized countries. Both philosophies have been critical of the subservience of forestry to the goals of industrial capitalism, though they have rarely been taken seriously or evaluated in any detail by mainline foresters and by the academic disciplines that deal directly with forests. They have found enthusiastic acceptance by some of the most vocal environmentalist critics of forestry, such as adherents of the Sierra Club, Earth First, and other forest interest groups that are influential in the radical branch of the environmental movement. Moreover, deep ecology is now being used to provide philosophical support for the budding "ecoforestry movement" and thus for new kinds of forestry and forest ethics.[21]

20. While John Muir was not employed as a scientist, he did receive some scientific education at the University of Wisconsin and obviously was accomplished in natural history, particularly in botany. He later developed a scientific account of glaciation in the Sierras that was based on his own observations and his desire to correct what he thought were false scientific accounts by geologists about the history of Sierra land formation. He successfully argued, for example, that glaciation was a major factor in the formation of the Yosemite Valley. His knowledge of geology impressed Joseph LeConte, a leading geologist at the time, and LeConte was at least partially convinced of the truth of Muir's glaciation theory, against its rivals. Other geologists dismissed his explanation, however. See Frederick Turner, *Rediscovering America: John Muir in His Time and Ours* (New York: Viking, 1985).

21. For an account of their influence on environmentalism, see the introduction to Peter List, ed., *Radical Environmentalism: Philosophy and Tactics* (Belmont, Calif.: Wadsworth Publishing Company, 1993).