

Aldo Leopold: his career and his Land Ethic''

Peter List,
Department of Philosophy, Oregon State University

Introduction

During the rise of the environmental movement in the United States in the 1960s, many individuals and organizations called for the establishment of a new environmental or ecological ethic. The assumption behind this recommendation and this admonishment was that our environmental crisis had become so severe and so pressing that only a new form of ethical thinking could help lead us out of our environmental predicaments. While many factors have been identified as causes of environmental degradation and change, including some of those mentioned by Jane Lubchenco last week in this lecture series, the idea is that our philosophies, attitudes, beliefs, and values are ultimately important for understanding why we face this crisis.¹ It was thought then, and is still argued today, that, as Aldo Leopold put it, we need an "internal change in our intellectual emphases, loyalties, affections, and convictions," what he referred to as the "foundations of our conduct", if we are to develop a new ecological conscience and alter our environmental behavior for the better.²

To help formulate this new ethic, intellectuals in the environmental movement at the time searched into American cultural history for ideas that could form the basis of new practices and a new philosophy about human relationships to the environment. Leopold was one of those earlier thinkers who was selected for special notice because of the ethical ideas and convictions he formulated in his book, *A Sand County Almanac*, the conservation classic published in 1949. It took twenty years for Leopold's ideas to percolate into public consciousness in the United States, but by the first Earth Day in 1970 *A Sand County Almanac* had become the "new testament" of the environmental movement.³ It attained this stature for several reasons: first because it tied together diverse ideas from ecology, natural history, the natural resource sciences, ethics, and Leopold's own experiences and observations as a naturalist and scientist into an elegant expression of a holistic philosophy about the conservation and preservation of the "biotic community," in short, a new "land ethic." But second because it came to public attention when the time was ripe for new environmental philosophies.

Since this lecture series focuses on the ethical legacy of Leopold, I want to set the stage for subsequent lectures in a different way than Jane Lubchenco did. I will first discuss Leopold's career, showing how some of his ethical ideas about the land evolved, and then outline some of the key elements of a Leopoldian perspective in

environmental ethics, including the general ethical responsibilities it entails to the land and its components and systems. In the process I will indicate what I admire in his ethic, since I believe that many of its elements are still quite relevant and in fact have never been put into practice in our society, even though they are clearly valuable underpinnings for a more sustainable way of relating to the earth. In 1948, just before *A Sand County Almanac* was published, Leopold himself did not believe that our society had adopted a land ethic, as he understood this concept, and it is probable that he would be skeptical today about the prospects for this kind of evolution in our social ethics though he would still be arguing that we need such an ethic.

By explaining some of the admirable features of a Leopoldian ethical perspective, I will not be suggesting that Leopold, once and for all, provided the only principles that are needed and should be adopted in a new environmental ethic. Given the variety and seriousness of the many situations we face environmentally, politically and socially, the diverse nature of our society and culture, and the twenty-five year history of philosophical debates in the field of environmental ethics itself, I think it best to incorporate many voices and principles into our social ethics, including some that do not appear in this perspective.⁴

Leopold: his career and ethical evolution

Leopold's personal and professional life has been fairly comprehensively described by two historians, Susan Flader and especially Curt Meine, and also fondly recalled by his children.⁵ J. Baird Callicott, the most famous interpreter and defender of Leopold's land ethic in the field of environmental philosophy, has also identified some of the changes in Leopold's ethical thinking from his early days as a forester to his later career at the University of Wisconsin.⁶ In addition to my own study of his writings, I will turn to these scholarly sources to discuss and explain his ethical development.

Briefly, Leopold was born in Burlington, Iowa, on January 11, 1887, into a family of privileged circumstances, that lived comfortably in a large house on a bluff overlooking the Mississippi River. The Mississippi was at the time a "semi-wild stream" and directly below his home were the bottom-lands of the river where Leopold spent a good deal of time as a youth, playing and observing nature, especially birds.⁷ This was one of the important migratory routes for ducks and geese in the United States, and of course is still one of the most notable bird flyways in North America, and so he had many opportunities to learn about bird behavior. Leopold's father Carl owned a company that manufactured first-rate wooden, roll-top desks, and he had a deep passion for the outdoors, for nature, and for hunting, all of which he communicated to his children. His mother Clara Starker was a refined person, sociable, a member of a wealthy family, and well-educated for the day, having gone to school in the east. She too loved the outdoors, and favored Leopold as the oldest child.

Leopold's grandparents were of German ancestry, and had migrated to the west in the 1830s and 1840s.⁸ They passed along elements of German language and culture to their children, and they in turn to their children, so much so that Leopold was sometimes said to have a "German soul."

Leopold had the advantages as well of a privileged education. He attended school in Burlington as a youngster, but on the insistence of his mother, he was eventually sent to prep school in the East, to Lawrenceville Prep in New Jersey, where he maintained his early interests in field ornithology and natural history. At the age of sixteen he chose forestry as his future profession and took a preparatory, undergraduate course of study in forestry at Yale's Sheffield Scientific School in 1905 and 1906. He then entered the Yale Forest School, the first graduate forestry school in the United States, graduating with a masters degree in 1909.

It is not surprising that someone with such an avid interest in nature should have chosen forestry as his occupation, for it was a very new and exciting profession in this country at the time. It was at the forefront of the conservation movement in the United States, and the Yale School was at the forward edge of professional forestry. The family of Gifford Pinchot, the first native-born professional forester in America and first head of the U.S. Forest Service in 1905, donated the funds to open the graduate program at Yale, and the school was staffed by leading forestry professionals in the country.⁹

Newly educated foresters were not typically employed by timber or logging companies, who had yet to understand their value, but were badly needed by the federal government to help protect, catalogue, and manage the millions of acres of forest reservations, or national forests, that had been set aside by various Presidents in the 1890s and after. After graduating from Yale it was thus natural for Leopold to take a job with the Forest Service, which was then itself a fairly new government agency (1905). He was sent to Albuquerque, New Mexico Territory, where the Southwestern Forest District was being organized, and his first job was with the Apache National Forest in Arizona Territory, doing reconnaissance and inventory work in the forest, which meant determining the "amount, location, quality and character of the timber" at hand.¹⁰ Promotion came quickly, and by 1912 he was made supervisor of the Carson National Forest in northern New Mexico and southern Colorado, a domain of one million acres supporting large numbers of sheep, cattle, a billion board feet of timber, and over six hundred homesteads.

After an illness in 1913, Leopold became acting head of the office of grazing in the District 3 headquarters in Albuquerque in 1914. As a result of his field observations, he had become convinced of the need to conserve wildlife and wild game, and argued on moral, aesthetic and economic grounds for native game protection in the national

forests at a time when the Forest Service had not taken significant steps to maintain game populations.¹¹ In 1915 he was assigned to organizing game and fish work in the district, something new for the Forest Service at the time and something Leopold was obviously more suited for than grazing work. In this capacity, he helped sportsmen and forest officers to organize local game protective associations, ensure enforcement of game laws, and eradicate predatory animals, a practice which he and most others in the conservation movement then supported. He also worked to create game refuges and restock depleted lands and waters, thus moved away from his earlier and direct responsibilities in forestry.

Leopold was quite interested in hunting and outdoor recreation, and he promoted the southwest as a valuable vacation and recreation area. He became secretary of the New Mexico Game Protective Association and edited its official bulletin, the *Pine Cone*, in which he published many of his early writings. He also wrestled with the issue of whether one could, on ethical grounds, be both a hunter or "sportsman" and a protector of game animals, deciding that these were compatible activities as long as one followed ethical standards in hunting and exercised appropriate restraint.¹² Hunters too, he concluded, have a love for nature and the outdoors.

During WWI, the Forest Service budget was cut back dramatically so Leopold left the agency to work for a while with the Albuquerque Chamber of Commerce, advocating game conservation and the preservation of indigenous Spanish architecture in the city, among other things. In 1919 he returned to the Forest Service to become assistant district forester in charge of operations, the second highest position in the Southwest district. This job involved responsibility for business organization, personnel, finance, roads and trails, and forest fire control, on the district's twenty million acres of forest. For five years he worked at this administrative position, helping the Service to develop new fire control procedures and evaluate the condition of its forests.¹³ He also did some research on erosion control, evaluated the relationships between land erosion and human uses of the land, and argued that overgrazing was a serious misuse of the land in the Southwest.

During these early years, Leopold apparently adopted "by default" Pinchot's philosophy of resource conservation that he had learned at Yale.¹⁴ Consequently his early, professional philosophy about natural resource management was quite utilitarian and oriented to the interests of the primary users of forests and grazing lands at that time. He applied concepts of "wise use," an idea President Theodore Roosevelt had championed, and also sustained yield to both game and forest conservation.¹⁵ Significantly, however, he also developed a keen interest in ecology in 1920, especially plant ecology, and in a form of ecological research that incorporated wildlife into ecosystems. Flader and Callicott note that, at this stage of his career, his efforts to integrate ecological thinking into his field work occurred

primarily in the area of watershed rather than game management.¹⁶ His field studies led him to tie together some of the ecological relationships between vegetation changes and soil erosion, and he "integrated soils, vegetation, topography and climate, geologic and human history, lightning fires and livestock grazing into a single system of interactions."¹⁷ Leopold began to see erosion as one symptom of a more general conservation problem, and began to define conservation as a philosophical and "moral problem" for the earth as a whole.¹⁸ His nascent holism was stimulated by his discovery of the organicism of the Russian mystic philosopher P.D. Ouspensky, who considered the earth a living being; it was also influenced by the ecological ideas of the pioneering ecologist Frederick Clements.¹⁹

An important aspect of his work at the time was helping to get some half-million acres of forest designated as roadless wilderness in the Gila River headwaters located in the mountains of west-central New Mexico. This was one of the first administratively designated wilderness sites in the western United States. Leopold argued in the *Journal of Forestry* for significant wilderness set-asides primarily on recreational grounds, though he was also concerned about the condition of the forests themselves.²⁰ His argument was primarily utilitarian in content, but it did signal a break from his Pinchotian conservation roots for he began to identify other, important cultural values in public lands than those generated by commodity uses.

In 1924, Leopold was asked to accept a transfer to the U.S. Forest Products Laboratory in Madison, Wisconsin, then the main research institution of the Forest Service. He was made the assistant director, apparently on the assumption that he would become director of the Lab, and this was quite an honor because it meant that he was being recognized "as one of the outstanding leaders of the country in forest research."²¹ The Lab however was concerned almost exclusively with research on forest products, rather than with the growing of trees or field research in forest science or ecology. Leopold was able to use the position to promote closer cooperation between the Lab and the national forests, and he worked on efforts to reduce wood wastage by industry.²² But, after four years of frustration with the activities of the Lab, he struck out on his own in the newly developing profession of game management, something that was more suited to his real interests in wildlife conservation. He also became an active member of the Izaak Walton League and helped draft a proposal to the Wisconsin legislature for a state game commission, which eventually passed in 1927. Later he became a member of the commission.

From 1928 until 1932, he traveled through the upper Midwest, conducting several game surveys of the north-central states with funding from the Sporting Arms and Ammunition Manufacturers' Institute. This involved an appraisal of the environmental factors that affect the productivity of game, and, though his survey methods were limited, he concluded that intensive agriculture was eliminating food and cover

needed by certain game species and that habitat preservation and improvements were necessary.²³ Because the science behind wildlife management was mostly unheard of at the time, and there were heated controversies about the best way to conserve wildlife among game protection groups, Leopold's survey research brought him to national prominence and made him one of the foremost authorities on native game in the United States. He delivered lectures on his research in the Midwest and East, identifying human population increases as an important pressure on wildlife survival and also noted a decrease in the ability of the land and in the incentives for landowners to maintain game populations.²⁴ He published the results of this research in 1931, in his *Report on a Game Survey of the North Central States*. This book became a pioneering effort to provide an empirical basis for game policy, and he also recommended new policies for conserving wildlife.²⁵ In this connection, he became the chair and main draftsman of a national committee that was charged with formulating a policy on game in the United States, and the committee's efforts became the basis for a new approach to wildlife conservation that stressed the idea of production of game in the wild and the encouragement of habitat management by land owners, in addition to cooperation between landowners, hunters, and the public. In 1933, he published the classic textbook *Game Management*,²⁶ the crowning achievement of his scientific work at the time, and, as a consequence of all of this, Leopold was later acknowledged to be the father of the profession of wildlife management in this country. It is significant that he mentioned in the book the need for a new ethic to guide human relationships to wildlife, an idea that was later generalized into a new conservation or "land ethic" that encompassed ethical responsibilities to all components of the earth.²⁷

Leopold also became friends with Charles Elton, author of the important ecological landmark, *Animal Ecology* (1927) and a professor of zoology at Oxford University, and he began to incorporate some of Elton's ecological functionalism, such as the notion of an ecological niche, into his own thinking.²⁸ Ecological science was in the process of shifting from the organism model to the community and ecosystem models in the mid- 1930s. Leopold was aware of this, though he continued to use the language of all of these models in his writings. By the time he finished the land ethic section of *A Sand County Almanac*, however, it is pretty clear that he had accepted these newer "paradigms" in ecology.²⁹

In August 1933 Leopold was offered and he accepted the first chair of game management in the country, which was set up in the Department of Agricultural Economics at the University of Wisconsin. He remained at the university for the rest of his life until he died in 1948. Aside from his professorial duties, he was research director for the newly created university arboretum, and set up a graduate training

program which used farms near Madison and other areas of the Midwest for cooperative experiments in land management and also for field research on wildlife.³⁰

During his tenure at Wisconsin, he became a consultant for a number of federal agencies on various conservation projects, emphasizing the need to coordinate and integrate land-uses, including farming, forestry, wildlife, and recreation, and to tailor programs to local conditions involving individual land-owners. He was skeptical about large-scale government conservation projects, and maintained that individual responsibility for the land is the cornerstone of conservation.³¹ This reflected earlier views he had in his Forest Service days, when he came to believe that a "democratic approach to land management" was preferable, one in which those who live on, work on, and know the land, assume as much as possible the responsibility for implementing conservation personally.³² However he did help to move the federal government to think seriously about wildlife restoration, to establish a wildlife research program, and to set up Cooperative Wildlife Research Units at land-grant universities around the country.³³

As I indicated earlier, in the middle 1930s his ideas shifted to a more holistic conception of the total land organism or mechanism, towards a more general idea of ecological relationships, as Jane Lubchenco mentioned in her lecture, and toward a "biotic view of the land" that provided a basis for his new land ethic.³⁴ He developed his notions about land pathology and land health and also criticized the predominant emphasis in our society on land as an economic commodity. Naturally he changed his views about the value of predators in the land community, and he continued to move away from a focus on game, individual animal species, and game habitat to concentrate instead on the ecological system of the earth or biosphere as a whole. Susan Flader mentions three significant events that reflect this shift.³⁵ (1) In January 1935, along with Bob Marshall and others, he helped found the Wilderness Society, in order to protect and expand the system of wilderness areas in the U.S. This organization was considered to be a "faddish cult" and "radical" at the time, incidentally, because it maintained that it is important to recognize wilderness as "a serious human need rather than a luxury or plaything."³⁶ (2) He also bought a worn-out, abandoned farm on the Wisconsin River in 1935 that was the setting for many of his "shack sketches" in *A Sand County Almanac*, and spent weekends and vacations there with his family attempting to restore the land to some condition of ecological integrity. (3) He spent three months in Germany in 1935, on a fellowship, studying German methods of forestry and land management, and observing European land conditions and land practices.

A Sand County Almanac and such famous essays as "Conservation Esthetic," "A Biotic View of Land," and "Thinking Like a Mountain" represent the product of his work in the 1930s and 1940s, when he had time to write because his students were

away at WWII. The 1930s represents a kind of intellectual watershed for Leopold, as he shifted his scientific and ethical views more toward ecosystem thinking. He used the expressions "land ethic" and "land esthetic" for the first time in the middle 1930s, and these concepts became part of his mature thought.³⁷ He became active in professional organizations and societies, conservation groups, going to conferences, writing and organizing some of his essays into a more coherent whole for a public audience. At the age of sixty, in 1947, he was at the apex of his professional career and was elected honorary vice-president of the American Forestry Association and president of the Ecological Society of America. From 1943 until his death in 1948, he was appointed to the Wisconsin Conservation Commission, and became embroiled in public conservation politics in that state, mostly about the problem of Whitetail deer "irruptions" and the advisability of reducing the deer herd.³⁸ Tragically, he died of a heart attack in April 1948 at the age of 61 while helping his neighbors fight a grass fire that threatened his family's sand county farm. Significantly, one week earlier *A Sand County Almanac* had been accepted for publication by Oxford University Press, and was published posthumously in 1949. This book elaborated on his desire to convey an "ecological view of land and conservation."³⁹

Some Scientific Presuppositions in Leopold's Land Ethic

What then are the admirable elements of the land ethic that he was developing in the 1930s and that he presented to the public to digest in *A Sand County Almanac*? What key ideas and prescriptions, what basic responsibilities does he outline for our time, and our day, in his ethic?

Leopold's ethic is premised on several important definitional and "ecological" concepts that provide a scientific context for his prescriptive, ethical ideas.⁴⁰ These include first of all his definition of the "land," or what is really the biosphere, as an interconnected community of interdependent parts through which energy flows via food chains. The biotic community consists not just of humans, plants and animals, but also of soils, waters, insects, and various other elements as well, biotic and abiotic, including the processes by which these objects are related. The healthy functioning of the community is dependent on the velocity of energy flow through the system and this depends in turn on (a) its complexity of structure, where this refers to the numbers, kinds, and functions of the component species and processes, or its "biodiversity" as it would be called today, and (b) the fertility of its soils.

Leopold thought that evolutionary changes tend over time to slowly increase the diversity of the community and its biota; they contribute to its dynamic stability. He represented this idea schematically in a land pyramid image, stating that the pyramid has initially been lower and flatter in geological history but had changed over time to become larger and more complex. Humans either can and sometimes do enhance

these evolutionary processes, and thus the development of biodiversity, through their land behavior or they can and sometimes do make rapid, extensive and violent changes that decimate biota and produce unhealthy conditions in the land community. He was quite concerned about the scale of human land alterations, for his personal experience told him that land complexity was being reduced in many parts of the North America and elsewhere, and he was convinced that biota are only capable of absorbing certain kinds of changes without becoming impoverished and altered, sometimes forever. As Jane Lubchenco mentioned last week, he believed that nature is not infinitely resilient; it does have some powers to restore itself to some earlier, natural condition here and there, but this is not inevitable because the influence of humans is pervasive and sometimes destructive.

Leopold thought it was clear then that conservation is an effort to harmonize humans and their behavior with the natural systems of the biotic community, the land. An ecological or land ethic is needed to help us see the limits that we should place on our land behavior in our personal struggles for existence and survival. This, he implies, is the point and purpose of the ethic, and is one of the important arguments in its favor. I would suggest, then, that his land ethic is motivated by both practical and ethical considerations. We have both reasons of self-interest and ethical concern, to promote land health.⁴¹

A Leopoldian Perspective in Environmental Ethics

With these ecological ideas as a base, Leopold introduced his land ethic principles and I would describe some of the important and admirable emphases in a Leopoldian perspective in environmental ethics as follows.

First is the idea that new forms of ethical thinking in our culture must be more biocentered than the dominant and traditional ethical systems in western culture and in our own history. We must reorient our narrow emphasis on responsibilities to ourselves, to other human beings, and to our human social communities, to include the land as a primary object of moral obligation. As he put it, this means that we need to stop thinking of ourselves as conquerors of the land community and instead think of ourselves as plain members and citizens. We must get rid of our human arrogance, our narrow anthropocentrism, our human chauvinism, and the belief in our total superiority as a species, all features of our traditional philosophical and religious thinking, and adopt a much more humble attitude about our role in the scheme of things. We must locate ourselves more seriously in nature, as natural beings, one species among many, all dependent on each other. As Jane Lubchenco said last week, we should reject the myth that we are independent of natural systems.

This does not mean that we should deny our uniqueness as natural creatures, since all species have important contributions to make to the functioning of the earth's system, but we should put it to work in a different way than it has been used in the past. Leopold believed that we have special ethical responsibilities to the biotic community and its many components just because of our species characteristics, particularly our capacities for both understanding and for pillaging the earth's biota.

Second, as I indicated earlier, this perspective requires that humans extend ethical consideration to all components and species in the biotic community, and not just to humans, the human social community, or the "higher" mammalian species, as has been typical of western ethical systems. We must find a way to respect nature for what it is in itself, finding deeper value in natural processes and systems, and also respecting the earth as a whole. Any new ethic must ask not just what ethical responsibilities we have to our families, friends, near neighbors, communities, countries, the global human community, and future generations of humans, all important of course, but also what obligations we have to animals, wild and domestic, to plants and plant communities, to other living creatures including birds, insects, and invertebrates, and even to the system components of the biotic community such as ecosystems, ecosystem processes, watersheds, rivers, deserts, and forests.

Third, since ecology and the environmental and earth sciences are key for understanding the biotic community and our place in it, this perspective tells us that we must respect what they can tell us about the earth and its ecological systems and species, realizing as well the uncertainties involved in science and the likelihood that scientists will never have all of the facts or theories needed to fully satisfy sceptics, settle all environmental disputes, or mollify environmental critics and doubters. As Jane Lubchenco showed last week, there already is sufficient evidence from the environmental sciences that we are seriously altering many essential ecosystems and ecosystem processes on the earth. Leopold would have been impressed by this evidence, in fact would have been presenting it in his writings if he were alive today, although as Jane Lubchenco also indicated he did not have the advantage of fifty more years of scientific research.

Fourth, this perspective advises us to cultivate "land health" as a goal, something Leopold took to be an internal power within the biotic community to renew itself. Humans have the power to destabilize the earth's systems, to introduce extensive and violent changes in nature. But we also have the power to work with these systems to help nurture them to health, where they are in a condition of ecological pathology. Moreover we must learn not just how to "tinker" with them but, in time, how to "doctor" them; we need a science of land health, Leopold argued. This would mean learning how to recognize the symptoms of biotic normality as well as biotic pain and disease just as we are able to recognize human illness or malaise in our social systems.

Of course we must also acquire the knowledge of how to remedy or treat the underlying causes of biotic illness and not just how to put band-aids on festering biological sores. Philosophers have long been interested in the question, how can humans live well and what does it mean to live well, but they have not always recognized the intimate dependence of human health and well-being on healthy natural systems. A Leopoldian perspective makes it clear that human health is predicated on environmental health, a point Jane Lubchenco made last week.

Fifth, an important ethical belief in this perspective is that we must do what we can to preserve the wilderness and wild systems that remain on our continent and in other parts of the world. This for various reasons, Leopold argued: because our survival depends on it; because wilderness holds important cultural, spiritual, and recreational values for us; but also because this is ecologically wise and the right thing to do. It is ecologically wise because these areas of the world offer baselines for ecological health and provide unparalleled opportunities for scientific research. Without understanding them, we cannot understand what is going on in the more altered and also more ecologically disturbed parts of the earth. If we do not save what he called the "cogs and wheels" of the earth system, no matter how small or insignificant to us, we cannot hope to help maintain the healthy functioning of the earth as a whole.⁴² The health of the earth depends on the viability of its subsystems and processes, so we must do what we can to make sure that they continue to thrive and evolve.

In fact, to Leopold the first principle of conservation and land management is preservation of all of the important biotic components of the earth. This did not mean to him that we could never alter and utilize the earth's resources for our survival and pleasure, but we must keep all of its essential components and processes intact in order to maintain its overall integrity. Moreover, he argued that all essential components of the earth have a right to continued existence, and some of these in a "wild" and "natural" state. It is arrogant and also mistaken for us to believe that we can do whatever we want to natural systems, for, using his mechanical metaphor, this would be like removing the fuel injection system or the starter from an automobile and expecting it to run well.

Finally, a Leopoldian perspective encapsulates the land ethic into several fundamental principles. One of the most well-known and dissected is the principle that (a) human actions that tend to preserve the integrity, beauty, and stability of the biotic community are right, while those that do not are wrong. (b) This principle is in turn premised on the very basic idea that we should stop thinking of our environmental behavior and the components of the biotic system solely in economic terms and criteria, and should emphasize aesthetic and ecological values and criteria as well. Economic thinking is the tail wagging the dog, he suggested; our land actions cannot and never are solely based on economic criteria anyway, even when we think they are,

but in any case they must take into account the beauties of nature and its ecological functions as well. So, we have ethical responsibilities to the earth that go beyond our narrow, economic self-interest.

Philosophers and other nature observers, of course, have long understood that the land community and its components have aesthetic value and that this value has the power to stimulate our imagination and our action in various beneficial ways. Leopold suggests that we also need to accept the ecological value that natural objects and processes have as part of the biotic system. In fact if we do so, we will come to realize that these objects and processes do not exist only to serve our economic or our personal survival needs, but function in a larger ecological and historical context, sometimes completely independent of our wishes and our concerns as humans. Thus all parts of the earth have these kinds of value, whether they are human or not; all parts are good, including the earth as a whole.

Some Concluding Points About Leopold's Land Ethic

I have been teaching from Leopold's *A Sand County Almanac* for over twenty-five years now, in several of my courses in environmental ethics, and Leopold's ideas continue to seem fresh to me and also attractive to many of my students. This is not to say that his land ethic completely survives the rather rigorous test of careful philosophical and scientific scrutiny, since environmental philosophers and scientists have variously praised and also criticized some of his key ideas. One of the principal criticisms of his land ethic is that it says almost nothing about the ethical issues of social justice, which, as Jane Lubchenco and many others have pointed out recently, is essential to environmental health. An understanding of the social causes of environmental destruction and of the ethical responsibilities we have to other humans in society is important for resolving the environmental problems that we have the means and the will to tackle. These things are intimately tied together.

At the same time, Leopold did make clear that his land ethic is a further evolution of human social ethics, and thus it is directly implied in his thinking that we do have responsibilities like this. He said almost nothing about what these are, in *A Sand County Almanac*, or how they are specifically related to our responsibilities to the land. But all this indicates is that his land ethic needs to be more explicitly connected to other ethical systems and ideas, to other human interests and responsibilities, for it to acquire a more thorough legitimacy.⁴³ In doing so, however, it should be kept in mind that Leopold is proposing a more biocentered ethic, and in such an ethic these kinds of human social concerns are only one part of a much larger biosocial ethic that takes the land community more seriously than human-centered ethics usually do.⁴⁴

While Leopold's writings do raise scientific and philosophical issues that require further interpretation, explanation, and also critical scrutiny, Baird Callicott and others in this series, such as Dale McCullough, will address some of them in their lectures and so I will leave this topic for them. The August 1998 issue of *Reflections* considers some of the valuable features and also drawbacks that environmental philosophers and conservationists locate in his land ethic, so one can consult that source as well.⁴⁵ In any case, it is important to keep in mind that Leopold's aim in formulating his land ethic was not to construct a detailed and complete ethical system that would withstand the inspection of professional academics and serve as a kind of catechism, but instead he wished to get ordinary people and also land owners to see the need to develop an ecological conscience to accompany their sense of responsibility to themselves and to their societies. Philosophers and scientists typically seek more precision and complicated argument than Leopold was inclined to offer his readers, but conservationists and environmentalists, those who, Leopold thought, serve as the vanguard of a land ethic and the countervailing force to unfettered and ecologically unsound land development, seek enlightenment and inspiration from him instead. And there is enough of this in Leopold's writings to satisfy this desire.