Ecosystem Management and Aldo Leopold

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We end, I think, at what might be called the standard paradox of the twentieth century: our tools are better than we are, and grow better faster than we do. They suffice to crack the atom, to command the tides. But they do not suffice for the oldest task in human history: to live on a piece of land without spoiling it.

Aldo Leopold, 1938

Natural resource management in America originated largely within this century. The various disciplines grew and matured focusing upon the use of natural resources as commodities and were motivated by a utilitarian ethic. Trees were for logging, wildlife was for hunting, and grass was for grazing. Over time, this relatively simple system of natural resource management (read commodity management) began fraying at the seams. People and industries interested in natural resources other than their strictly utilitarian uses appeared. These were "environmentalists" and their perspective flew under the banner of John Muir, the founder of the Sierra Club.

The emergence of this new group inevitably resulted in conflicts over the best use of our public lands. "Environmentalists" are traditionally urban and have livelihoods little connected to commodity uses on government lands. Indeed, their principle use of public lands have been as playgrounds where they can escape the stresses of crowded urban environments. Whereas they have pictured-commodity uses as being destructive, they have viewed recreational uses of the land as benign. After all, mountain bikers can pass through a forest tract and, afterwards, look over their shoulders and see the land unchanged. On the other hand, loggers can work in that forest tract for an equal period of time and see the land visibly altered after their labors. Partially because of this, the conflicts have been explained as clashes between: commodity users versus amenity users, those with a utilitarian ethic versus those with an environmental ethic, or people with rural values versus those with urban values.

Out of this ceaseless conflict, which has uprooted families, altered human communities and economies, and left deep-seated bitterness in the minds of many, has come the need for change; that business as usual is not (if it ever was!) acceptable. Natural resource agencies correctly perceived that they lacked the confidence of our diverse publics (since they seemed to be in perpetual conflict with many), as well as a severe erosion of loyalty among their own employees. This latter crisis was brought to a head by a former Forest Service employee, Jeff DeBonis, who formed the **Association of Forest Service Employees for Environmental Ethics**, and subsequently organized **Public Employees for Environmental Responsibility**.

The United States Forest Service was the first institution to break this hopeless cycle of conflict and seek change. Under the rubric of "New Perspectives," they underwent a very public self analysis which spanned a three-year period. What emerged from this exhaustive appraisal of their past was a concept they named "ecosystem management." Ecosystem management has many definitions but most agree that it argues for the stewardship of commodities, amenities, and biological diversity. This rallying theme of the Forest Service was quickly picked up by other state and federal agencies, from the Department of Defense to the Colorado Division of Wildlife. By its wide and ready acceptance, it was apparent that the Forest Service had struck a deep nerve, one whose connections penetrated to the very heart of human-land relations.

This new concept, however, was in reality a half-century old. It was developed by Aldo Leopold and came under the name of the "land ethic." Leopold captured its essence when he wrote:

> "Conservation is a protest against destructive land use. It seeks to preserve both the utility and beauty of the landscape."

Leopold's land ethic was a synthesis of the divergent ideas of Gifford Pinchot and John Muir. One that placed humans on the land, living on the land but without harming it. Humans being able to extract commodities as well as enjoy the amenity values associated with rural and wild places. For, importantly, ecosystem management is not an exclusionary approach. Therefore, it is at once in conflict with the traditional combatants who have clobbered each other over the use of our public lands. The wise use movement, the Sierra Club, the commodity industries and the outdoor recreationists. These groups are just beginning to realize that ecosystem management welcomes them all to the land, but in a responsible fashion with limits on the amount and type of use.

If this is where our story concluded, it would indeed have a happy ending. We would have finally reached the point

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where we need to be; humans living as part of the land and not apart from it. Humans enjoying the fruits of a landscape that can sustain, forever, commodities, amenities, and biological diversity.

Regretfully, I do not think we are anywhere near that aspired endpoint. And it is largely due to the enormous amount of baggage that exists from decades of conflict between commodity and amenity users, and from agencies and institutions that strayed from the concept of stewardship, from the belief in placing land health above its human uses.

In order to truly practice ecosystem management, we need a new set of ethics and a new set of scientific standards. The ethics need to be something other than humans having dominion over earth. We need an ethic which keeps us at the center of the universe, for from that position we may truly appreciate the stewardship responsibilities we have for all that is around us. Once we change our attitude towards the land from asking "what good are you to me?," to one that demonstrates respect from the land that nurtures us, a land that provides essential ecosystem functions which we degrade or ignore at our own risk, we will have created a more appropriate relationship with the land.

The scientific standards need to be something other than managing a handful of important species; whether it be economically valuable Douglas fir or threatened peregrine falcons. We need to adopt a new science whose principles embrace ecological processes and emphasizes biological communities and landscapes defined at a variety of spatial and temporal scales. The explosive growth of conservation biology suggests that land stewards now have a scientific discipline which captures the necessary ingredients for managing natural resources.

Ecosystem management will require a different type of environmental organization. We need groups which articulate the virtues and standards of the land ethic, not those who believe conflict and turmoil are to be encouraged for successful fund-raising drives. We need groups, like The Nature Conservancy, who strive for working partnerships to protect landscapes, including its commodity and amenity uses, and its natural heritage. Leopold had the traditional environmental organization in mind when he wrote:

> "These people call themselves conservationists, and in one sense they are, for in the past we have pinned that label on anyone who loves wildlife, however blindly. The basic fallacy in this kind of "conservationist" is that it seeks to conserve one resource by destroying another."

We need change in our natural resource agencies. These groups will not have heard the message from ecosystem management if they think the answer is to exclude commodity users from the land and let amenity users hold sway for the next century. We are sadly mistaken if we think that outdoor recreation is benign, for it is not. It, like any commodity use, can disrupt wild lands and, unregulated, create serious environmental degradation. Leopold wrote:

> "Lop-sided conservation is encouraged by the fact that most Bureaus and Departments are charged with the custody of a single resource, rather than with the custody of the land as a whole. Even when their official titles denote a broader mandate, their actual interests and skills are commonly much narrower."

Ecosystem management will require revised university curricula that include courses in environmental ethics, ecological restoration, landscape ecology, human dimensions, and ecosystem science. And, most importantly, we need an educational system that teaches students to read the land. To recognize that human histories have shaped, altered, and created the natural histories. That humans are part of the landscape, have always been so, and that, if managed, do not have to be viewed as destructive agents. Leopold had this in mind when he wrote:

> "Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our educational...system is headed away from, rather than toward, an intense consciousness of land."

So, what to do? As we conclude this century, and prepare to begin a new millennium, we should devote time to a serious discussion of how we can do better. We need to honestly appraise our past and learn from it; showing determination not to repeat mistakes which led us to our present impasse. Institutions, such as universities, government agencies, and nongovernmental organizations should not be denigrated for they serve as powerful leverage institutions in the transition of a society that takes its environment seriously. Leopold captured the ethos of those concerned with natural resources when he wrote, "There seem to be few fields of inquiry where the means are so largely of the brain, but the ends so largely of the heart."

Perhaps Aldo Leopold provided the best guidance we may hope for when he penned these words:

> "I have no illusions about the speed or accuracy with which an ecological conscience can become functional. It has required 19 centuries to define decent man-to-man conduct and the process is only half done; it may take as long to evolve a code of decency for man-to-land conduct. In such matters we should not worry too much about anything except the direction in which we travel."