

# Ethics in Natural Resources Management: Some Concepts and Food for Thought<sup>1</sup>

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## Abstract

The objective in this paper is to highlight a few concepts and approaches from the discipline of ethics that might serve as food for thought when students are wrestling with controversial natural resource issues and ethical behavior as natural resource professionals. Overall, this discussion advocates critical reflection, empirical inquiry, and intellectual honesty with particular attention paid to the interrelationship between science and ethics. I suspect not all will agree with everything I suggest, but, as in the classroom, my purpose is to stimulate thought and dialogue and share experiences. First, I present some foundational concepts followed by a simplified summary of classical approaches to ethics. I then briefly discuss the field of environmental ethics and caution against the unclear use of language and fallacious thinking. Finally, I advocate a common-sense interpretation of the precautionary principle and a clear distinction between means and ends.

## Introduction

A desirable objective in preparing students for success in the controversial and contentious realm of natural resources management is to instill the intellectual virtues of critical reflection, empirical inquiry, and intellectual honesty. This is consistent with an overall curricular goal of producing technically competent and ethically responsible professionals (see Wilson, 1999 for details on these intellectual virtues). The ethical domain has become a focus of general education or "core" degree requirements at many colleges and universities, as well as a dimension of some accreditation standards (Society of American Foresters, 2003; ABET, Inc., 2004). As individual instructors trained in specific natural science or social science disciplines, how can we provide guidance for discussing the ethical aspects of natural resources management? The objective of this paper is to highlight a few concepts and approaches from the discipline of ethics that might encourage these intellectual virtues and serve as a useful framework when wrestling with natural resource issues in academic and professional settings. I am particularly

going to focus on the relationship between science and ethics.

Likely most students can rattle off the basic steps of the scientific method; it is less likely they are familiar with any systematic approach to ethical analysis. In response to the perennial student question "Who's to say what's right and wrong?" Pojman (2002) answers "those who can provide the best reasons." Tom Regan (1983, p.126-135) offers at least a set of conditions conducive to making ideal moral judgments: conceptual clarity, information, rationality, impartiality, coolness, and reference to a valid moral principle. Even in the teaching of science, students may need to be reminded that knowledge is advanced by empirically testing and refuting hypotheses and not by conducting opinion polls (Popper, 1934). Furthermore, science is conducted by fallible human beings and therefore operates under an implied set of ethical standards (National Academy of Sciences, 2003; for a critical view of how science can get off track see Crichton, 2003a). In what follows I attempt to provide for students and practitioners of natural resources management a useful context and framework for ethical discussion.

## Useful Concepts

Science and ethics are very much interdependent fields of human endeavor. Ethics without science is at best uninformed and at worst delusive, while science without ethics is at best suspect and at worst downright dangerous. Perhaps the clearest principle regarding the relationship between science and ethics is "ought" implies "can." "Stop continental drift" cannot be an ethical mandate! While one might pontificate that we "ought" to stop the "homogenization" of the world's ecosystems or cultures, it may be something we just cannot prevent.

While "ought" implies "can," the inverse is not true. "Can" does not imply "ought." Arguably, we could transform the boreal forest into a vast tree farm. But, that doesn't automatically mean we should. Of course, "can" does imply a choice for the free individual and for society and not all individuals or all groups will choose the same path. To under-

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stand human nature, acting alone or in groups without coercion, is to understand the difficulty of saying “no” to “can.”

Another very important concept is captured by the words “is” does not imply “ought.” Just because something “is” a certain way scientifically or factually, does not mean that is the way it ought to be in an ethical sense. There are many forms of this principle and related ideas. David Hume ([1740] 1978) noted the logical fallacy of deriving an “ought” conclusion from purely factual premises the so-called “is-ought” dichotomy. G.E. Moore ([1903] 1954) coined the term “naturalistic fallacy” to reiterate that we cannot substitute any single natural or empirically verifiable term for our meaning of “good.” “Good” means what we mean by “good!” “Good” is a fundamental, intuitive, and unique concept that cannot be equated to any other single thing (Schroeder, 2002). Moore applied this principle to argue against Herbert Spencer's “social Darwinism” that equated “good” with “survival.” Likewise, today one cannot put forth ideas such as “productivity,” “biodiversity,” or “sustainability” to encompass the full meaning of the word “good.” Paul Watzlawick (1988, p.40) seems to encompass the naturalistic fallacy when he cautioned against “ultra-solutions.” He states:

“The uncompromising pursuit of whatever name is given to the supposedly highest ideal —be it security, patriotism, peace, freedom, happiness or whatever— is an ultra-solution, a force which, to paraphrase Goethe, always seeks the good and always creates evil.”

In spite of these warnings, we continue to see signs of such “naturalistic fallacy” frequently in ecology and ecosystem management from folks who purport to be dealing only with the scientific facts (Cortner and Moote, 1999; Fitzsimmons, 1999). Old growth forests are somehow deemed good or better than early successional forests. Native species are somehow “good” while non-native species are “bad” (Sagoff, 2003). Such proclamations often take on the air of normative statements without acknowledging that the concern over nature is really instrumental to personal or social welfare. The implication or direct claim that humans should behave in a certain way because it is “good for the ecosystem” is unclear thinking unless a specific link to human welfare is made. Can one logically defend a normative claim that one should act in a manner that is good for the ecosystem, without also claiming that what is good for the ecosystem is good for humanity? The only line of reasoning that might be consistent with such a claim would be to invoke faith in a supernatural creator/evaluator or presume some other transcendent moral order (Callicott, 1999; Freyfogle, 2002). While I personally do not rule out the potential strength and relevance of such a belief, I must limit my argument here to the mechanics and rules of logic and the realm of empirical science. Contrary to popular rhetoric, it cannot be empirically demonstrated that ecosystems

have “interests” per se, which can be fostered or subverted. Ecosystems are not idealizations; they are realizations (Sober, 1986). It seems sometimes we aspire to find or define the perfect ecosystem one that sustains the production of some natural condition that is being subconsciously substituted conceptually for “good.” Perhaps we could call this the Shangri-La Syndrome or the Garden of Eden Syndrome (For an interesting point of view on this see Michael Crichton, 2003b). Whatever one calls it, it is a case of the naturalistic fallacy, at least if it is not acknowledged that by “good” we mean what is good for humans, living now or in the future.

Both science and ethics derive from the same human intellectual capacity: the abilities to wonder, to imagine alternative actions, to project their possible consequences and evaluate and choose among alternatives (Ayala, 1995). But it is important not to confuse the application of these abilities to realm of fact versus the realm of value. Although the realm of fact informs the realm of value, scientists have no greater qualifications than non-scientists to make value judgments, except perhaps those involved in the rigorous and unbiased application of the scientific method. In fact, scientists accept the challenge to remain objective when acting in that role, recognizing they, like non-scientists, have their own personal values. This is the rationale for double-blind studies in medical and psychological research and the overall call for repeatability of results. We certainly don't want to institutionalize a fuzzy boundary between fact and value by the language we use in science. Under the haze of ecological anthropomorphism it may be all too easy to mistakenly locate “good” in the ecosystem and then relinquish ethical decision-making to the technical expert or scientist.

The next concept I wish to address is rights. There are no “rights” in nature. The word “nature” here is being used to mean the physical and biological world uninfluenced by human intelligence. While this may be viewed as a bold and radical statement, I would argue that the concept of rights is a uniquely human construct invented by humans, for humans, albeit, based on “human nature.” Rights, so viewed, assume equality with, reciprocity from, and responsibilities to other human beings (McCloskey, 1979). The hungry tiger does not acknowledge these human inventions. I do not argue that human beings, as moral agents, do not have duties to entities other than moral agents just that “rights” is not the appropriate, logically consistent vehicle to express or implement this concept. Or, in other words, one cannot have rights without duties, but one can have duties without rights (This point in itself is controversial; for an outline of issues and different points of view see Feinberg, 1974, Midgley, 1983 and, Regan, 1986).

A common device in environmental ethics textbooks is the “last person” thought experiment (Routley and Routley, 1980). Here one asks would it be morally wrong for the last human being on earth to

willfully destroy the biosphere as his last act. This leads to interesting classroom discussions. I propose another thought experiment for those who advocate “rights” for animals, trees, ecosystems, etc. Imagine there are no human beings on earth, would “rights” exist in any meaningful and operational way? If one agrees with the definition of rights given above, then clear thinking demands one maintains the integrity of language in arguing claims. Perhaps concepts such as having moral standing, or being morally considerable, or being a moral patient would better capture the idea of human responsibility to non-human beings. Wilson (2001) provides a comprehensive summary of arguments for and against various approaches to animal ethics that might serve as a guide to the broader issue of non-human rights. My bold statement is certainly not meant to put an end to discussion. Topics to pursue with students include rights of the unborn and comatose humans, human rights versus legal rights, rights for corporations, rights for future humans, and rights of hypothetical types of extraterrestrial intelligence. DeGrazia (1999) points to additional areas for critical inquiry.

### Traditional Approaches To Ethics

Once we have chewed on these basic ideas we are still faced with the problem of choosing what to do. Do we all have to become philosophers in order to make ethical decisions? No, we do not; at least not in an academic sense. In any event, having a Ph.D. in ethics does not guarantee ethical behavior! However, we all can become better thinkers and better at ethical analysis. Mortimer Adler (1991) expresses Aristotle's insight when he says the ethical person is one who has “the habit of right desire,” implying that we can develop through coaching and practice the skills necessary for ethical thinking. Marvin Brown (2003) has simplified the classic approaches to ethics into a practical process. He recognizes three approaches that we use in everyday life and suggests we invoke all of them in performing an ethical analysis.

One approach to ethics he calls the “Ethics of Consequences.” Here one focuses on the actual or projected results of an action or proposal. This is certainly relevant to our topic and places a fairly heavy emphasis on “science” to assess the feasibility and consequences of a proposal. Should we allow oil exploration in the Arctic National Wildlife Refuge? The ethics of consequences suggests we enumerate the total harm done and the total benefits derived from such exploration. It is obvious that one needs to know the likely physical and biological consequences of specific exploration activities in order to apply ethical significance or weight to the outcome. Exploring or drilling for oil is not, in and of itself, unethical. Its moral significance is associated with the harm or good that might result. Based on the “utilitarian” approach of Jeremy Bentham and John Stuart Mill, and applied by Gifford Pinchot, the ethics of consequences has become a dominant theme in the

assessment of public policy through economic cost-benefit analysis and more recently risk analysis. The ethical concept here is maximum “happiness,” “welfare,” or “utility” and is traditionally characterized by the phrase “the greatest good for the greatest number.”

A second approach to ethics Brown calls the “Ethics of Principle.” Sometimes we need to focus on the act itself, regardless of the consequences. Has some ethical principle been violated? Usually this approach recognizes limits to “the greatest good for the greatest number” as society defends personal freedoms and rights against the potential tyranny of the majority. The ethics of principle focuses on mutual respect and might be characterized as “the golden rule.” Concepts of “justice” and “fairness” weigh heavily here. The ethics of principle are closely tied to the ethical theory proposed by Immanuel Kant (Brown, 2003).

A third approach to ethics is called the “Ethics of Purpose.” Here one focuses on the person (or agency) doing the act and asks whether it is consistent with his or her (or agency's) role at the time, or the fulfillment of their purpose. Does the actor have special responsibilities by virtue of his/her purpose in the context of the issue? We all play multiple roles in life. I might be judged based on being a father, a spouse, a teacher, a forester, or a friend. This approach is the foundation for professional codes of ethics associated with special duties or responsibilities willingly assumed by those with special training and commitment, including, one would hope, scientists (see: National Academy of Sciences, 2003).

### Environmental Ethics

Of course, the classic approaches covered by Brown (2003) have been criticized as being anthropocentric (Des Jardins, 2001). What about the environment, environmental ethics, land ethics, and Aldo Leopold? Certainly, there are many competing ideas about the appropriate theoretical foundation for an “environmental ethic” including the extension of traditional ethical theories outlined above (see: Kaufman, 2003; Pojman, 2000). What makes environmental ethics different from other fields of “applied ethics” such as business ethics, medical ethics, or legal ethics is that it not only seeks to apply the classic approaches to ethics to a specific context, but also asks the more fundamental question of who and/or what is morally considerable. Perhaps we can simplify ethics further in order to gain a useful perspective.

Ethics are about relationships relationships with ourselves, other individual human beings, our community and its institutions, other living beings, perhaps with a believed higher power, and, as more recently recognized, with our physical and biological environment (for a more poignant expression of this see: Saint-Exupery, [1943] 2000). So, what is the fundamental relationship between humans and their environment? Viewed anthropologically and biologi-

cally, if you take human beings as social animals, put them together in a given place or environmental setting, add “time,” you will get what we call “culture.” Gerlach and Bengston (1994, p.19) suggest:

“Humans interact with nature primarily through culture (socially constructed and shared adaptive strategies and underlying values), and social structures (the expressions of these strategies and values in action and organization).”

In addition, we have co-evolved with other organisms and within a particular range of physical conditions. We cannot escape the physical, biological and cultural ties we have to our local, and now global, environment. The science of ecology helps us to identify and understand our relationships with our physical and biological environment, to illuminate the interdependencies, to identify and project the consequences of our actions on that relationship. However, because both ecology and ethics focus on relationships, it may be all too easy not to recognize when one has crossed the boundary between fact and value.

The science of ecology describes, tries to understand, and attempts to predict the consequences of change. It does not judge. Human beings must first recognize and then be responsible for their relationship with the biotic and abiotic environment. My relationship with my wife, my children, my dog, my community can be described, documented as to its change over time, and even explained by psychologists, sociologists, and anthropologists. However, an ethical judgment of me in those relationships must bring the multidimensional world of ethical concepts (consequences of actions, respect for other moral agents, responsibilities by virtue of my role/relationship to others) to bear. If my action affects the pattern of my relationship with the above in light of such concepts as justice, welfare, respect, and duty, I can then be subject to ethical judgment.

One of the biggest pitfalls to clear thinking about environmental ethics is the naturalistic fallacy (Kaufman, 2003: p. 254-256). We are led to believe there is some ideal condition of the ecosystem that represents how the world “should be” (usually as uninfluenced by humans), that can then be used as a reference point to strive for, maintain, or restore. Modern ecosystem management focuses on the “condition” of the system rather than on outputs, and we casually accept the notion of “ecosystem health,” as if an ecosystem had an ideal state. Much of this is metaphor, anthropomorphism, argument by analogy, and dangerous flirtation with the naturalistic fallacy (Freyfogle and Newton, 2002). Without critical reflection, empirical inquiry, and intellectual honesty, metaphors can replace clear thinking and lead to conceptual errors and foolish outcomes (Kaufman, 2003).

As good natural resource managers you might ask “But what does Aldo Leopold say?” To some extent Aldo Leopold (1949, p. 224-225) has led us down this path with his often quoted aphorism:

“A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

But, current science tells us that ecosystems are what they are: dynamic open systems more frequently than not in a state of disequilibrium and of which humanity is a part (Pickett and Ostfeld, 1995). Callicott (1996, p. 372), in light of this contemporary understanding of ecosystems, struggles to “update” Leopold's maxim. He says:

“One hesitates to edit Leopold's elegant prose, but as a stab at formulating a dynamized summary moral maxim for the land ethic, I hazard the following: A thing is right when it tends to disturb the biotic community only at normal spatial and temporal scales. It is wrong when it tends otherwise.”

So, was the eruption of Mt. St. Helens or the tsunami in Indonesia “wrong?” Callicott's (1996) concern that Leopold's maxim needs updating reveals a misunderstanding in the first place (Freyfogle, 2000). Leopold's words need updating only if one assumes that Leopold thought that stability, integrity and beauty were inherent properties of ecosystems as opposed to states of the ecosystem that humans desire, value and benefit from. As Callicott(1996) himself documents, Leopold knew that nature was dynamic. He knew humans were a member, albeit, “just plain member” of the biotic community, even if it is a de facto or perceived community. And, I suspect he knew that beauty was in the eye of the beholder. Leopold as ecologist was, in many ways, ahead of his time and Leopold as ethicist revealed the “golden mean” approach of classical philosophers (see Leopold, 1932; Arnhart, 2000). He did not suggest the substitution of an “eco-centric” ethic for an “anthropocentric” ethic (Arnhart, 2000). He advocated a broadening of human interest to encompass the stability, integrity, and beauty that could be derived in relationship with the biotic community; qualities perceived by humans in relation to human needs, not inherent characteristics of natural systems. Someone who understood the spirit and philosophy of Leopold, was Joseph Wood Krutch in his essay “Conservation is not enough” ([1955] 1969, p. 373-374, p.378):

“To live healthily and successfully on the land we must also live with it. We must be part not only of the human community, but of the whole community... It is not a sentimental but a grimly literal fact that unless we share this terrestrial globe with creatures other than ourselves, we shall not be able to live on it for long.... You may if you like, think of this as a moral law. ...If we do not permit the earth to produce beauty and joy, it will in the end not produce food either.”

The problem and yet utility of “ethics” is that they tend to look at things in the long run and counter-balance our temptation to discount the future in favor of satisfying immediate needs or desires. Thomas Jefferson said: “The earth belongs in usufruct to the living” (Jefferson, [1789]1958, p. 392). Those living today must use nature to meet their needs, but must also consider their duties to future

generations. This idea is fundamental to a stewardship approach to land ethics, relying heavily on the ethics of consequences as seen in the long-run, and the ethics of purpose by invoking our “role” as caretaker (by virtue of rationality and free will), and the ethics of principle constraining our actions by focusing on justice and respect for individual human beings, now and into the future.

### Ethics, Risk, and the Precautionary Principle

Ethics, in a way, can also be viewed as a qualitative risk analysis. It is an important way of dealing with uncertainty. This is particularly challenging, however, in the midst of rapid social, technological, and environmental change. Consequently, even ethical prescriptions themselves need to reflect a balance between blindly accepting conventional wisdom on the one hand, and summarily rejecting it on the other. That is why analysis is called for. Related to this later point, the concept of “the precautionary principle” has emerged and has been adopted by some engaged in environmental and natural resource debates. One definition was put forth at the Wingspread Conference in Racine, Wisconsin in 1998 (as cited by Appell, 2001, p.18):

“When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”

This principle has so captured the imagination of people that there has been a separate conference dedicated to it (see: <http://www.cid.harvard.edu/cidbiotech/bioconfpp/>). David Ropeik and George Gray (2002) point out two contrasting views. They cite Edmund Burke, the 18th century British politician, as saying “Early and provident fear is the mother of safety,” i.e., “It’s better to be safe than sorry!” (Ropeik and Gray, 2002, p.13). They also cite American essayist Randolph Bourne in 1913 as saying: “We can easily become as much slaves to precaution as we can to fear. Although we can never rivet our fortune so tight as to make it impregnable, we may by our excessive prudence squeeze out of the life that we are guarding so anxiously all the adventurous quality that makes it worth living” (Ropeik and Gray, 2002, p.14).

Rigid or extreme application of precaution suggests a “do nothing until everything is known” strategy. If followed, one would never get out of bed in the morning! A more common sense interpretation would suggest that when faced with uncertainty, take precautions against undesirable outcomes and then move ahead. This approach to precaution seems to at least presuppose an action will be taken and is consistent with current adaptive management strategies (Prichard and Sanderson, 2002).

### Conclusions: Means and Ends

The scientist's or technical expert's role is to suggest possible consequences of actions and help attach probabilities to alternative futures. The role of the scientist or technical expert is not, however, to make the final decision by setting thresholds of acceptable risk, or by injecting personal ethical weighting factors in the summing of positive and negative consequences. That is the role of ethics as reflected in public policy, as manifested through public input, and as dictated by public and personal “purposes.” The ethics of consequences, the ethics of principle, and the ethics of purpose all enter into public and private decision-making.

A final caution is not to confuse means and ends. One should not use cost/benefit analysis or risk analysis to determine ends (Sagoff, 1988, 2003). These are appropriate analyses to help choose efficient or effective means once a clear end has been determined. The determination of those ends, i.e., what kind of world, what kind of environment, what kind of society do we wish to live in, obviously involves personal, social, and hopefully, ethical processes. Mortimer Adler (1991) reminds us that ethics is basically using the right means to accomplish good ends.

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