AN INVESTIGATION OF THE CRITICAL COMPONENTS OF A LAND ETHIC: AN APPLICATION OF Q METHODOLOGY

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CHAPTER I

INTRODUCTION

Aldo Leopold was ahead of his time. His evolution of thought about human beings' relationship with their environment foreshadows the evolution of environmental education and thought in the United States. Beginning with the idea that it is the community rather than the individual community member that take priority in "The Land Ethic," and that the "good" of the community consists in the harmony of its components – integrity, stability, and beauty – the land virtues should be those character traits (habits) that foster the "good" (Shaw, 1997).

"That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics" (Leopold, 1949, viii). Ethics provide a system that guides and enables one to choose the "most" right thing to do in a given situation. Ethics act also as an internal compass helping us to find the best course (Matthews & Riley, 1995). Broadly speaking, an ethic is a way of life or an attitude toward life. An ethic is based on a commitment to specific values of the human community (Shaw, 1997). These values are designed to help differentiate between what is good for the community and what is not.

Environmental ethics could be looked upon as an attempt to extend what is good to include "a community beyond that of human beings"(Shaw, 1997). Synonymous with

environmental ethics is the concept of a land ethic (Knapp, 1999). A land ethic refers specifically to those internal guidelines that direct our treatment toward and relationship with our environment, the land. The land is defined as being composed of more than soil and rocks. It encompasses all living and non-living components of the environment (Nash, 1989). "The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land" (Leopold, 1949, p. 204).

Current research (McCarthy, 1998; Matthews & Riley, 1995) indicates that ethics are learned from one's family, peers, and community. This education takes place formally, as a part of school curriculum and non-formally, as during an outing to a nature center or watching a program on television. Several studies and reports have identified environmental ethics as an integral part of environmental education (Ballantyne & Packer, 1996; Townsend, 1982; Chou & Roth, 1995; The President's Council on Sustainable Development, 1997; Matthews & Riley, 1995). The development of a land/environmental ethic is one of the stated objectives of many environmental education curricula (Matthews & Riley, 1995; Sobel, 1996; Knapp, 1999; Pheasants Forever Education Staff, 1992). The desired outcome is to facilitate this ethical development with the hope that the learner will act in a more responsible and ethical manner in his/her relationship with the environment. Environmental educators strive to encourage that development of a positive land ethic. But a curriculum that fosters land or environmental ethics requires careful design to be effective (Sobel, 1996; Matthews & Riley, 1995; Hines, Hungerford, & Tomera, 1987).

Justification For This Study

Townsend in 1982 and Chou and Roth in 1995 conducted independent studies that investigated the underlying constructs of the basic concepts in environmental education. Both used Q methodology to direct their studies. Townsend's sample was drawn from two groups of individuals involved with environmental education; universities and colleges and environmental organizations. These groups were distributed throughout the contiguous United States and Alaska and Hawaii. Chou and Roth's research was cross-cultural and drew its sample from the faculty of the Ohio State University and the National Taiwan University. In both studies environmental ethics emerged as a critical concept of environmental education. These studies of diverse groups revealed agreement on the key constructs of environmental education

In 1978, the Tbilisi Declaration pushed environmental education past strictly environmental concerns to:

> prepare the individual for life through understanding of the major problems of the contemporary world, and the provision of skills and attitudes needed to play a productive role towards improving life and protecting the environment with due regard to ethical values (President's Council on Sustainable Development, 1997, p. 19).

Other investigations (Hines, Hungerford & Tomera, 1987; Ballantyne & Packer, 1996; Gambro & Switzky, 1996) have recommended further research into factors which lead to the development of a sense of responsibility and positive ethical behavior toward the environment. This indicates a need to delve further into the domain of environmental ethics. The review of literature did not uncover any studies which specifically examined environmental educators' perceptions of or beliefs about the critical components of

environmental/land ethics. " . . . The ethics of people who seem to demonstrate strong preferences for nature should be studied on the basis of their underlying reasons for doing something, as well as for what they actually do" (Knapp, 1999). Because it is the environmental educators who are teaching the environmental ethics concepts, an investigation into environmental educators' perceptions of the critical components of a land ethic appears to be warranted.

Purpose

Before meaningful land ethics curricula can be developed, the structure of the domain of critical components of that land ethic should be investigated. Seeking information from those individuals who believe in educating for a land or environmental ethic is a logical place to begin. Those who have chosen to be trained as facilitators of the Leopold Education Project (LEP), Project WET, Project WILD, Project Learning Tree (PLT), and/or Leave No Trace should be reliable sources. Embedded within each of the aforementioned program's curriculum are environmental ethics components or concepts. Simply by their decision to be trained as a facilitator in one or more of the above national, experiential environmental education programs, these individuals have indicated an interest in espousing the tenants of that program which include fostering a land or environmental ethic and in being an environmental educator. Their input in the form of a Q sort, described later, will help to define the critical components of a land or environmental ethic.

Revealing through analysis what environmental educators believe are critical components of a land or an environmental ethic would be, then, a strategic first step in the process of designing a relevant curriculum that assists in the development of

environmental ethics. Q methodology offers a means to analyze opinions and subjectivity. Bruce McKeown (1994) likens Q methodology to a hermeneutical science because one focus of hermeneutics is language which in turn is linked to the examination of emotion, feeling, and behavior, all subjective. Q methodology offers a way to analyze beliefs and opinions which also are subjective.

Problem Statement

Opinions and beliefs are subjective and individuals with certain beliefs about the world are more apt than not to act on the basis of those beliefs. Is there a wide disparity or a general consensus of opinion about the critical components of a land ethic among environmental educators? How does this disparity or consensus affect the way that environmental ethics are taught? Before one can respond to the above questions, a fundamental problem must be addressed. One must determine what environmental educators believe are critical components of a land ethic. This may be done by identifying the underlying dimensions of a set of environmental ethics concepts from the perceived importance reported by environmental educators. Once dimensions are identified it is necessary to determine what relationships may exist between the underlying dimensions of concepts and the variables: gender; age; education level; residence location; number of vehicles owned; religious affiliation; occupation; environmental education training; sources of news; time spent watching TV and reading for pleasure. This information is rudimentary to an understanding of these educators' belief system with regard to their relationship with the environment and then to designing a curriculum that these educators would perceive as relevant and, therefore, use.

Research Questions

The research questions which directed this study were generated from an attempt to identify these underlying dimensions.

1. According to the select sample of environmental educators/facilitators, what are the critical components of a land or environmental ethic and what structure will be revealed by the data?
2. What other patterns or relationships may appear that disclose important information about the nature of an individual that espouses a land or environmental ethic?

Assumptions

The underlying assumptions of this study were based on the researcher's expectations for the ability of the participants to complete the Q sort and the ability of Q methodology to collect and analyze the data, revealing the critical components of a land ethic as perceived by a sample of environmental educators.

1. The environmental educators have opinions as to what are the critical components of environmental ethics.
2. The participants sorted the Q statements according to the instructions.
3. The participants accurately completed the Information Sheet.
4. The participants' responses are their own and not that of another person.
5. The participants understood the intent of the Q sort.
6. Q methodology is an appropriate means of measuring an individual's perception of the relative importance of the critical components.

7. Underlying dimensions of the domain of a set of environmental ethics components can be developed from an individual's perception of the relative importance of the components within the set.

Definition of Terms

Defining the following terms, used in this dissertation, is necessary for the reader to be able to more fully interpret this study. The majority of the terms are unique to Q method. Understanding the Q terminology is required for comprehending the process of Q methodology.

Concourse – refers to the flow of communicability surrounding any topic. It includes but is not limited to responses to interviews, newspaper commentaries, talk shows, and essays (Brown, 1993).

Condition of Instruction – a guide for sorting Q sample items. They can be simple requests for agreement and disagreement or operationalizations of theoretical constructs (McKeown & Thomas, 1988).

Ethics – a system of guidelines for governing the behavior of the members of the human community (Shaw, 1997).

Land Ethics – a system of guidelines for governing the behavior of the members of the extended community that includes all components of the environment (Leopold, 1949). In this document, a land ethic is synonymous with an environmental ethic.

Leave No Trace – a national program, supported by the U.S. Forest Service. It promotes a positive outdoor ethic and teaches skills for protecting the wilderness environment.

The Leopold Education Project (LEP) – a specified national curriculum for grades 6-12 designed to foster the development of a land ethic through reading Aldo Leopold's A Sand County Almanac and participating in meaningful hands-on activities both indoors and outdoors (The Leopold Education Project, 1995).

Project Learning Tree (PLT) – a national curriculum designed for grades K-12 that uses hands-on activities which focus on forestry as the context for learning about the environment (Project Learning Tree, 1997).

Project WET (Water Education for Teachers) – a national program which uses water as the integrating context for the varied activities (K-12) dealing with the environment (Project WET, 1995).

Project WILD –a national curriculum (K-12) which fosters an understanding of the basic principles of ecology through hands-on activities that encourage learning in the outdoors (Project WILD, 1992).

PQ Method 2.06 – the statistical program used to analyze the data gathered (Brown, 1993).

Q Methodology – entails a procedure for the scientific study of human subjectivity (McKeown & Thomas, 1988).

Q Sample – a collection of stimulus items, such as the 54 statements used in this study relating to environmental ethics, that is presented to participants for rank-ordering in a Q sort (McKeown & Thomas, 1988).

Q Sorting – a process whereby a participant models his or her point of view by rank-ordering Q sample stimuli along a continuum defined by a condition of instruction (McKeown & Thomas, 1988).

Subjectivity – a person's point of view on any matter of personal and/or social importance (McKeown & Thomas, 1988)

CHAPTER II

REVIEW OF LITERATURE

Overview

John Passmore maintains, in *Man's Responsibility for Nature,* that an environmental ethic must be based in Western traditions in order to be fully developed and successfully adopted. In his words, "an ethic . . . is not the sort of thing one can simply decide to have; 'needing an ethic' is not in the least like 'needing a new coat.' A 'new ethic' will arise out of existing attitudes, or not at all" (Hargrove, 1989, p. 4). In other words, environmental ethics arises from the field of ethics. And, Western culture influences the development of those ethics. As mentioned previously, in Chapter I, environmental ethics is considered a key component of environmental education. Taking a closer look at the origin and status of each of these key concepts; ethics, environmental ethics, and environmental education is needed in order to more fully appreciate the setting for this study.

Ethical Perspectives

Ethics and values are often mentioned in conjunction with one another and may, by some, even be thought to be synonymous (Shaw, 1997). They are not the same but they

are related. One might think of ethics as the compass and values as the map that allow an individual or society to navigate through varying situations that require a decision.

Ethics, a branch of philosophy, by definition refers to a belief system, held by an individual or a society, that guides and enables them to choose the "most" right thing to do in a given situation and to decide what is "good" for the community (Knapp, 1999; Nash, 1989; Matthews & Riley, 1995). Value on the other hand, refers to the worth of a thing, that quality that makes it more or less desirable. Desirable could mean its usefulness or intrinsic worth. "Held values are deeply rooted beliefs about what is good, true, and beautiful. They are the foundations of religion, ethics, and social propriety" (Peterson, 1996, p. 26). Today's environmental concerns raise some fundamental questions about what our society and its individuals value, about who we are and how we should live, about our niche in the world. In other words, environmental problems ask questions of ethics and philosophy (Des Jardins, 1993).

In dealing with environmental issues, there tends to be a reliance on technology and science or economics or the law. Doing so without including the ethical perspective can create as many problems as are solved. Decisions made by science and technology "experts" does not mean that the decisions are value-neutral, only that the values of the scientists will be the ones used to make the decision (Des Jardins, 1993; Kempton, Boster, & Hartley, 1996). Rarely will there be an environmental concern that does not cross political and discipline boundaries. Ethics can and should act as the integrating context for decision making.

Historically, philosophers have attempted to design systematic explanations of an ethical life (Des Jardins, 1993; Hargrove, 1989, Peterson, 1996; Shaw, 1997). These

explanations or "theories" form the foundation for evaluating and guiding ethical behavior. These theories provide a common language for discussing and analyzing ethical issues, including environmental ethics issues. Learning this language of philosophical ethics allows for better communication during disputes by providing a format for mutual understanding and exchange. Understanding the basic concepts of ethics; rights, responsibilities, utility, the common good and the connections between these concepts will foster an informed dialogue during controversies. Ethical theories are reflections of the way that a majority of the people in Western culture think. Some argue that because these theories are so much a part of our approved way of thinking that they are responsible for some of the environmental problems (Dunlap & Van Liere, 1978). It would seem then that an understanding of ethical theory is relevant to the understanding of environmental ethics (Des Jardins, 1993).

Ethical Theory

An objection to each of the following traditional ethical theories is made by ethical relativism. It is a form of skepticism that is held by those who dispute that there is any objectivity or rationale to ethical discussions. To these nay-sayers, studying ethics is trivial because ethics is based on opinion and beliefs. These doubters ask the rhetorical question, "Who is to say what's right or wrong?"

This view denies any prospect for making a rational objective ethical decision. The relativist argues that ethical standards are based on an individual's opinions and therefore no universal or objective ethical judgements exist. Des Jardins (1993) responds that "it would be a mistake to conclude that there is no right answer simply from the fact that two

cultures hold different beliefs. For example, some people may believe the earth is flat and at the center of the universe" (p. 24).

Ethical reasoning has its limitations and its strengths. "Just as sciences such as medicine, ecology, and meteorology offer rational and objective judgments without proving these judgments beyond any doubt, so too ethics involves standards of reasoning that are different from those found in mathematics" (Des Jardins, 1993). But to be a consistent relativist, one would have to believe that there is no objective rationale for praising one kind of behavior (e.g. love and freedom) and condemning another (e.g. murder and slavery). Des Jardins (1993) argues that to remain consistent one must believe that there is no rational persuasion or discussion in ethics. Continuing this argument, he asserts that it is one thing to talk like a relativist and quite another to live consistently as one.

The Natural Law or Teleological Tradition

The ethical views accompanying the teleological tradition can be found in the teachings of Aristotle in the fourth century B.C. and Thomas Aquinas in the thirteenth century A.D. Ethics and science were not as distinguishable in Aristotelian thought as they are currently. Based on Hargrove's (1989) and Des Jardins' (1993) interpretation, Aristotle held the biological sciences as the vanguard of knowledge: today it is physics and mathematics at the forefront. This unique blending of ethics and biology establishes a basis for this tradition to be relevant to environmental issues (Des Jardins, 1993). Aristotle believed that there was a cause for the existence of everything and to truly understand something required understanding the causes for its being, why it is the way it

is. It was important to be able to explain something's purpose or telos. Aristotle argued that this teleological framework was appropriate for all natural objects, including humans because all things have a functional purpose and all things are good when they fulfill their potential.

Thomas Aquinas' writings further developed the teleological system and greatly influenced Western thought. Aquinas combined Christian beliefs with Aristotle's thoughts on science and ethics. He saw Aristotle's teleology as evidence of God's plan and purpose for all of nature including mankind. This purposefulness of the natural world was God's doing and therefore the natural order was good and equal to a moral order. "Fulfilling one's natural potential – a potential implicitly in harmony with the rest of nature – was the highest form of ethical activity" (Des Jardins, 1993, p. 27).

The Utilitarian Tradition

Utilitarianism directs citizens to "maximize the overall good" or produce "the greatest good for the greatest number" (Mill, 1979). This will sound familiar to those who have studied Gifford Pinchot's directive to the Forestry Service in the early 1900s. For the utilitarian, there must be an account of the good and a rule for judging all acts and decisions in terms of that good. If good consequences are maximized then the act must be good or ethically right, if not the act is ethically wrong.

This creates two kinds of value: the "good," which is valued for its own sake, and all other things which derive their value by their relationship to the good. So all things are evaluated on their ability to produce good consequences. Sometimes the words intrinsic and instrumental are used to distinguish between these two kinds of value. Pleasure or

happiness would be acceptable to utilitarians as long as they then could define other things in terms of their usefulness in gaining the highest level of that value. Deciding on a "good" that functions as the base for all other values is the challenge. To fulfill this lofty goal a "good" must be objective (independently good) and universal (good for all at all times). How the "good" is defined determines the different versions of utilitarianism. An example is hedonistic utilitarianism where pleasure is determined to be objectively good and universally valued (Des Jardins, 1993; Hargrove, 1989).

Deontology: An Ethics of Duty and Rights

The theory of deontology espouses acting on principle rather than consequences. Immanuel Kant, an eighteenth century German philosopher, defends this view in his writings. Kant (1764/1990) believed that humans must be ethical beings because we have rational thought and free choice to form our intentions and to choose deliberately to act on them. A key concept of this view is that persons are treated as ends and never as means or objects. Based on Des Jardins' (1993) interpretation of Kant's writings, this means that people are to be seen as rational and autonomous individuals, who are responsible for treating each other in this way. This basic premise establishes fundamental ethical rights. Each person is seen as having the right to pursue his or her own personal goals and purposes as long as someone else is not treated as a means to that goal or end. The primary value is the duty to treat others with respect and the rights of equality and freedom.

Understanding the premise of rights and duties points out an important flaw in utilitarian thinking. Utilitarianism ignores the function that moral principles fulfill in

ethical decision making. To Kant, acting on a principle is to act in agreement with an unconditional mandate. The principle of justice requires that we fulfill our duties to others and respect their rights. Utilitarianism requires that we fulfill our duties and respect others' rights only when it maximizes the overall good. Kant argues, according to Des Jardins (1993), that this is the perfect example of injustice: fulfilling duties and respecting rights only when it has beneficial consequences.

Western ethical and political thought has been greatly influenced by these theories. Their tenets can be seen in the basic structure of democracy and civil liberties. They lay the foundation for environmental ethics in the twentieth century.

Environmental Ethics, Origin and Status

Suppressing Influences

> Environmental ethics requires more than simply a concern for animals. At a minimum, we need to consider questions about the moral status of ecological communities and about their role in these communities. A shift to holistic and truly nonanthropocentric ethics requires a fairly radical break from tradition (Des Jardins, 1993, p. 134).

"How narrow we selfish, conceited creatures are in our sympathies! How blind to the rights of all the rest of creation" (John Muir, 1867 quoted in Nash, 1989).

Over one hundred years passed between the time that John Muir made his radical statement and Joseph Des Jardins commented on the need for a radical break from tradition. During that time some philosophical and ethical perspectives did evolve but not the radical paradigm shift that both men sought. That this shift has not taken place during the preceding two millennia, much less in the past one hundred years is not surprising

considering the influence of Greek philosophy on Western ethics and environmental thought (Hargrove, 1989; Nash, 1989).

Greek philosophers viewed natural phenomena as something to be distrusted. The study of ecological relationships in nature was not considered to be true knowledge. Knowledge was believed to be permanent, eternal, unchanging. Relationships in nature were constantly changing, so by Greek standards, were not considered to be knowledge and not worthy of importance.

There was also a distrust of observations gathered by the senses. Firsthand observations of nature were discouraged. Principles from which could be deduced all other knowledge by reason were most valued. Sensory input was looked upon as a hindrance to the exercise of reason. Natural phenomena were seen as stand-ins for the ultimate substances or elements. The belief was that studying the physical elements as observed in nature and discerned through the senses was superficial, and peripheral and therefore of no philosophical importance (Hargrove, 1989).

Hargrove concluded that Greek philosophers did appreciate and admire the natural world but not aesthetically. It was the order of things that caught their attention not the beauty. The Greek concept of beauty originated in their idea

> that ultimate reality is concealed and distorted by sensation and as such has nothing to do with beauty in its primary Greek sense in connection with the fundamental nature of reality, the human soul, and moral goodness (Hargrove, 1989, p. 26).

The Greek metaphysical perspective of the earth fostered the concept that the world as experienced is an illusion. Whatever was thought to exist, is and cannot not be, therefore whatever is thought not to exist, is not and cannot be. According to this view,

the matter of the world of sensation and experience is constantly moving into and out of existence. Therefore nothing in the world has enough permanence for nature preservation to make any sense (Hargrove, 1989).

The promotion of an ecological perspective, that fosters an aesthetic appreciation of the natural world and its dynamic reality and permanence, was nearly impossible because of the influence of the basic tenets of Greek philosophy on Western thought. During the seventeenth, eighteenth, and first part of the nineteenth centuries the pursuit of pure science and the separation of value from fact also shaped environmental thought. But the aesthetics of the natural world confronted natural history scientists as they pursued their practice. This made it difficult for them to follow the mainstream thought and reject the beauty of nature (Hargrove, 1989; Naess & Rothenberg, 1989). It really was not until the nineteenth and twentieth centuries that the reconnection and reconciliation between humans and nature began in earnest.

In the mid 1800s, Charles Darwin wrote in his autobiography, as edited by his grandson, of a personal loss in the pursuit of science and foreshadows a coming change in Western thought.

> My mind seems to have become a kind of machine, for grinding general laws out of large collections of facts, but why this should have caused the atrophy of that part of the brain alone, on which the higher tastes depend, I cannot conceive. A man with a mind more highly organized or better constituted than mine, would not, I suppose, have thus suffered; and if I had to live my life again, I would have made a rule to read some poetry and listen to some music at least once every week; for perhaps parts of my brain now atrophied would thus have been kept active through use. The loss of these tastes is a loss of happiness, and may be injurious to the intellect, and more probably to the moral character, by enfeebling the emotional part of our nature (Darwin, 1958, p. 54).

Origins

According to Callicott (1994), generally the credit for first articulating an American conservation philosophy goes to George Perkins Marsh in his book, Man and Nature or The Earth as Modified by Human Action written in the 1860s. The primary concern of the book focused on the negative effects of deforestation on stream flow, soil stability and fertility, and climate. Callicott (1993) believes that Marsh's conservation ethic was a forerunner of the Judeo-Christian stewardship position of the 1990s. About the same time Ralph Waldo Emerson and Henry David Thoreau were criticizing the "prevailing American materialism and vulgar utilitarianism" (Callicott, 1994). They did not have the same essential understanding of plants and their relationship with soil, water and climate that Marsh had. Instead, they wrote about the aesthetic, psychological, and spiritual benefits of being in nature (Callicott, 1994). Thoreau was probably the first to advocate a national wilderness preservation policy when he recommended that each town have some kind of a park or better yet an untouched, ancient forest (500-1000 acres) that was to be preserved, undefiled, for posterity's sake for all to enjoy (Thoreau, 1854).

John Muir zealously promoted this philosophy of conservation. Muir's vivid writings about his wilderness journeys with the focus on nature's beauty and spiritual renewal, influenced and inspired many American readers (Knapp, 1999; Teale, 1954).

A contemporary of Muir's, Gifford Pinchot, promoted a different philosophy of conservation. Pinchot viewed nature simply as resources. He is remembered for his motto, "the greatest good for the greatest number for the longest time." His philosophy regarding the environment was utilitarian. He equated conservation with the systematic

exploitation of natural resources. Pinchot's conservation philosophy was a direct outgrowth of the eighteenth and nineteenth century scientific and economic world view that nature was nothing more than bits and pieces of matter to be regulated through a market (Tanner, 1995; Callicott, 1994).

The Land Ethic

> 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 (Leopold, 1941, p. 224-225).

Aldo Leopold began his career as a forester firmly grounded in the Pinchot conservation philosophy (Meine, 1988). His thoughts changed as he labored in the outdoors and observed the workings of nature first hand. Evidence of this shift can be seen in his essay "Thinking like a mountain" in which Leopold (1949) writes about killing a female wolf. Leopold acknowledges that his understanding was incomplete when he believed that for the sake of good hunting, it was right to remove all predators of deer. Leopold recognized that Pinchot's ideas were out of step with the new science of ecology (Flader, 1974). Nature was beginning to be perceived as more than just parts that are useful to humankind. Leopold recognized the void in conservation left by the Muir-Pinchot schism. It was either "lock up" nature to preserve its pristine state, as advocated by Muir's followers (the preservationists) or efficiently use it and thereby degrade it in the process, as espoused by Pinchot's advocates (the conservationists). In his now famous essay, "The Land Ethic," Leopold (1949) proposed a more complex conservation philosophy that attempts to mix wildness with utility.

"The Land Ethic" was to a degree anticipated by Thoreau, Darwin, and Muir, yet it

> is the first self-conscious, sustained, and systematic attempt in modern Western literature to develop an ethical theory which would include the whole of terrestrial nature and terrestrial nature as a whole within the purview of morals (Callicott, 1987, p. 157).

Leopold incorporated John Muir's reverence for all that is wild and free, and he laid the groundwork for Rachel Carson's cry for understanding of the interconnectedness of all life and forethought in our interactions with it (Tanner, 1995). Leopold was not the first to propose an extension of ethics and rights to all of nature. Thoreau, Muir, and the German humanitarian Albert Schweitzer also had advocated for the same. What is unique about Leopold's contribution to environmental ethics is the sound scientific foundation that he provided for a land or environmental ethic (Tanner, 1995).

The development of the current concept of a land ethic is attributed to Aldo Leopold who also is acknowledged by many to be the "father of ecology" (Flader, 1974; Meine, 1988; McCabe, 1987, Callicott, 1987; Tanner, 1995). During his lifetime (1887-1948), Leopold's beliefs and understanding about the relationships that exist between human beings and their environment evolved, as evidenced in his writings. The culmination of this development of his beliefs and understanding of a land ethic are expressed in his final book, A Sand County Almanac, published posthumously in 1949. This work includes a series of seasonal essays detailing a year of observations that Leopold made at his Sand County retreat that he called "the shack," along with other writings on conservation and the now famous "The Land Ethic" essay.

In A Sand County Almanac, Leopold introduced and attempted to integrate three main concepts that are components of a land ethic: 1) "land is a community," the basic concept of ecology; 2) "land is to be respected and loved," an extension of ethics; 3) land produces an aesthetic or cultural harvest (Leopold, 1949). Leopold believed that it was critical for people to learn how to discover the beauty in everyday surroundings. He saw aesthetics as a measure of how people judge the rightness or wrongness of their actions.

> It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense (Leopold, 1949, p. 224-225).

He extended that belief to the idea that when people perceive that they are an equal part of the natural community they are more likely to make decisions that allow natural cycles to continue to renew themselves. When moral considerations are extended beyond human beings to all components of the environment, a personal environmental ethic develops. This type of ethic, called holism, is more likely to produce a lifestyle which continually reviews one's relationship with the land. (The Leopold Education Project, 1995).

Leopold has long been recognized as one of the most significant figures in the development of a land or environmental ethic (Shaw, 1997; Des Jardins, 1993). A generation has passed since the now famous essay, "*The Land Ethic,*" was first published as an essay in A Sand County Almanac.

> Students read it. Journalists quote it. Environmentalists live by it. Supreme Court Justices cite it. Scholars criticize it. Many readers have gained their first exposure to an ecological world view through it. Recently it has become a standard starting point for scholarly discussions of environmental ethics. In short, "The Land Ethic" has helped lead a generation in reassessing its relationship to the natural environment (Callicott, 1987).

Riley and Matthews (1995) agree with Leopold's beliefs in and understanding of a land ethic as being driven internally, not by laws, mandates, regulations, or enforcement. Sobel (1996, p. ix) concurs;

> Once children feel connected to nature and "the environment," physically and emotionally, they'll be compelled to seek the hard facts, and they'll take vested interest in healing the wounds of past generations while devising feasible, sustainable practices and policies for the future.

"The Land Ethic" remains a notable success. It is more understandable than most formal philosophy because it is grounded in the observed world. Its personal tone exhibits more understanding than most attempts to derive a philosophy from ecology. It is more complete than most conservation literature because of its intellectual breadth.

> In the time that has passed since the essay first appeared, philosophers, natural scientists, and the lay public have begun to discuss the issues that Leopold saw so clearly in 1947. He remains one of the few who can talk to all with authority (Meine, 1987).

Current Status

> All ethics so far evolved rest upon a single premise; that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to cooperate (perhaps in order that there may be a place to compete for) (Leopold, 1949, p. 203-204).

Earth Day 1970 provided the inspiration for today's environmental ethics. Philosophers, spurred on by environmentalists, began "doing something" about environmental ethics. By 1970 an intellectual climate had evolved, due in part to two papers that appeared in Science; Lynn White's "The Historical Roots of Our Ecological Crisis" in March of 1967 and Garett Hardin's "The Tragedy of the Commons" in

December of 1968. Most influential to this kind of thinking was Aldo Leopold's essay "The Land Ethic" (Callicott, 1987; Hargrove, 1989; Tanner, 1995).

The 1970s were spent debating Lynn White's thesis and Garrett Hardin's "The tragedy of the commons" (Hardin, 1968) but mostly from an historical, theological, and religious perspective, not a philosophical one. Many philosophers were still formulating what a field called environmental ethics would look like. The first philosophical conference was organized by William Blackstone in 1972 at the University of Georgia. In 1973 Richard Routley, an Australian philosopher, presented a paper at the 15th World congress of Philosophy "Is There a Need for a New, an Environmental, Ethic?" John Passmore, also Australian, responded a year later with "Man's Responsibility for Nature" in which he argued that there was no need for an environmental ethic at all. Until the mid 1980s most debate among philosophers was spent refuting Passmore. The 1970s also saw the beginning of the deep ecology movement following the publication of Arne Naess' paper "The Shallow and the Deep, Long-Range Ecology Movement" (Zimmerman et.al., 1998).

In 1979, Eugene Hargrove founded the journal Environmental Ethics which ended up being the name of the field. In the first five years of the journal, the argument focused on rights of nature and the relationship of environmental ethics and animal rights/animal liberation. Nash (1989) describes a turning point for environmental ethics discussions in 1988 when many single-authored books began to become available: Paul Talyor's Respect for Nature, Holmes Rolston's *Environmental Ethics,* Mark Sagoff's The Economy of the Earth, Eugene Hargrove's Foundations of Environmental Ethics, Roderick Nash's The

Rights of Nature, J. Baird Callicott's In Defense of the Land Ethic. The scope of environmental ethics was expanding.

A second movement appeared in the 1980s, ecofeminism, lead by philosopher Karen Warren. It was followed by a third movement, social ecology lead by the views of Murray Bookchin. The creation of the Canadian deep ecology journal, The Trumpeter, became the link between academics and radical environmentalists. Another journal, Earth Ethics focuses on international sustainable development. The International Society for Environmental Ethics was founded in 1990 and has members throughout the world. In 1992, a second refereed journal dedicated to environmental ethics, Environmental Values began publication in England (Zimmerman et al., 1998).

Environmental ethics will continue to evolve as our society evolves (Nash, 1989; Knapp, 1999; Zimmerman et al., 1998; Hargrove, 1989). Leopold came to the conclusion that an environmental ethic was needed after repeatedly failing to solve environmental problems through political action. He realized that appropriate action could not be achieved without the support of the citizens and that before they could give their support they would have to develop, understand and grapple with their own environmental values. The question is not whether environmental problems can be solved by political action or ethical action but whether these problems can be resolved through a combined action at both levels (Hargrove, 1989).

Leopold recognized that in order for this twofold action to take place, the citizens must be educated. This would enable educated people to havve the environmental values needed for both ethical and political action (Leopold, 1949).

Environmental Education

> The number of functional illiterates that our free public education produces does not make us sanguine about educating a majority of the public to respect the earth, a harder form of literacy. Leopold's land ethic is not a fact but a task. Like old age, it is nothing to be overly optimistic about. But consider the alternative (Stegner, 1987, p. 245).

What is Environmental Education?

> [A]ll education is environmental education. By what is included or excluded, students are taught that they are part of or apart from the natural world. To teach economics, for example, without reference to the laws of thermodynamics or ecology is to teach a fundamentally important ecological lesson: that physics and ecology have nothing to do with the economy. It just happens to be dead wrong. The same is true throughout the curriculum (Orr, 1994, p.12).

According to Hungerford and Volk (1990), the ultimate aim of education is to shape human behavior. Throughout the world, societies create educational systems in order to produce citizens who will behave in desirable ways. The need for environmental education has been supported in print and lecture during the past century, and has increased in volume and intensity since Rachel Carson's book *Silent Spring* was released in 1962. David Orr (1994) would add that the goal of education in not simply mastery of the subject matter but mastery of one's self. The subject matter is just a tool. The ideas and knowledge are used to build one's own character.

Since the passage of the National Environmental Act of 1970 (P.L. 91-516), environmental education has been identified by the development of implicit and explicit interconnections with science, technology, and societal issues and problems. In 1975 at a United Nations Educational, Scientific, and Cultural Organization (UNESCO) meeting in

Belgrade, Yugoslavia, the most commonly accepted definition of environmental education was developed.

> Environmental education should increase public awareness and knowledge about environmental issues as well as provide the public with the skills necessary to make informed decisions and the motivation to take responsible actions (National Environmental Education Advisory Council, 1998).

In responding to the above charge, environmental education has struggled for its identity within the educational system (Tilbury, 1995) even though its infusion had already begun in particular within science curricula (DeBoer, 1991; Disinger, 1987). Part of the problem is that environmental education is really a process more than it is content (Naidoo, Kruger, & Brookes, 1990; Matthews & Riley, 1995). Gigliotti (1990) along with Gambro and Switzky (1996) would argue that the problem is the content, or more accurately the lack of content or knowledge about the environment. Gambro and Switzky's study revealed that the awareness about environmental problems was there but no skills or knowledge to deal with the problem were in place. Gigliotti agrees that thus far environmental education has produced an environmentally concerned citizenry but one lacking in basic ecological knowledge. Interestingly, environmental education found its way into U.S. school curricula as a direct response to the energy crisis of the 1970s and 1980s. This crisis had caused the public to be more aware of the need to be responsible users of energy resources. This awareness appeared in the form of a new curricular emphasis, energy education (DeBoer, 1991).

Environmental education's role seemed to be to respond to crises by providing the citizenry with knowledge with which to make informed decisions. In 1988 Roth reported that environmental education is an integration of disciplines with multiple strategies using

synthesis of information that can transpire more readily than when disciplines are isolated. In this process, cognitive understanding is not enough; affective and behavioral development is necessary to affect significant value, belief, behavioral, and cognitive shifts in individuals.

Implementation of Environmental Education

How these shifts occur depends on the learner, the teacher and the setting. The strategy that is most effective will vary according to the above variables. There are general tenets that can guide the teacher in incorporating a philosophy of environmental stewardship or alliance into varied instructional settings. One, according to DuShane and Hug (1978), suggests that a holistic, experiential, and value-neutral presentation of the content, that enhances creativity, is achieved through the emotional, intellectual, and ethical development of the individual. Disinger and Howe (1992) offer another which proposes that understanding the complexities of the interrelationships with the environment is a necessary condition to maintenance and improvement of environmental quality. No matter what the setting, it is practical to remember, given the demands on the educator, that the environmental lessons, experiences, and activities must be integrated into the curriculum and limited instructional time (Warpinski, 1979).

Disinger and Floyd (1990) describe three philosophical positions that direct the incorporation of the above tenets into teaching. They are imposition, infusion, and framing. The first, as the name implies, requires that the subject of environment be imposed on the existing curriculum. There are many curricular guides and materials that fulfill that role. They usually relate to a specific topic, such as, water quality, solid waste,

energy or the rainforests. It is fairly easy to add one of the activities or units to the existing curriculum. The danger is that the topic is often addressed in isolation and does not speak to the complex nature of the total environment that results from the interactions of physical, biological, social, economical, and cultural components. Environmental education suffers in this format because it is undefinable in how it relates to existing programs.

Infusion involves incorporating environmental concerns into existing curricula and content. The challenge is to permeate learning experiences with environmental education. This may take the form of a theme for the class or group. Often it involves creating opportunities to include environmental issues as the application of the field of study (e.g. math, physics, biology). Philosophically the goal of infusion is to integrate or infuse the knowledge, skills, attitudes, experience, and commitment into the mainstream of public education that will result in informed decisions, responsible behavior, and constructive actions. Environmental education becomes the grounding for all schooling and the foundation for organizing schooling into natural systems rather than by arbitrary disciplinary boundaries (Charles, 1987). Disinger and Howe caution that infusion often "flounders on the reticence of discipline-oriented curriculum designers and teachers" to rely on content from other than their own area of expertise (1992, p. 6).

The third philosophical approach, framing, proposes that the arbitrary boundaries of traditional disciplines be eliminated in place of creating a framework of study in which subject areas become related and integrated rather than isolated and disparate. This break with tradition can best be accomplished when educators and students investigate, interpret, explore, manage, discover, and make decisions about larger encompassing

studies (Indiana DOEd., 1991). This approach frames learning in a manner that challenges old assumptions about teaching and learning. Lieberman and Hoody (1998) support framing in their report, based on their four year study, "Closing the Achievement Gap: Using the environment as the integrating context for learning." They found that when the environment was used as the "framework" for learning that students, in general, improved cognitively, behaviorally, and effectively. Teachers, using the environment as the integrating context (EIC), reported that they had a feeling of renewal for teaching. But EIC does require a paradigm shift in the traditional approach to learning.

Environmental Education Content

Once the decision has been made to incorporate some form of environmental education, choosing the content to include usually follows. This can be a daunting task but there are studies which have investigated the content arena and have recommendations based on their findings. Townsend's (1982) national study revealed five areas of content with descriptors that educators believed were critical to environmental education. Townsend describes these content areas as: ecology (interdependence and living things), culture (interaction with environmental considerations), ethics (mankind's moral responsibility for environmental considerations), natural resources (management and use), and population (interaction with environmental conservation). Chou and Roth's (1995) international investigation also discovered five constructs for environmental education that mirror those unveiled by Townsend: environmental ethics, population and quality of life, interdependence, environmental management, and socio-culture.

Other researchers and educators have phrased environmental content in terms of objectives for environmental education which provides for a continuing format. In 1978 the Tbilisi Declaration (The National Environmental Education Advisory Council, 1998) outlined five categories of objectives: 1) awareness and sensitivity to the environment and environmental challenges, 2) knowledge and understanding of the environment and environmental challenges, 3) attitudes of concern for the environment and a motivation to improve or maintain environmental quality, 4) skills to identify and help resolve environmental challenges, and 5) participation in activities that lead to the resolution of environmental challenges.

In 1990 Hungerford and Volk identified a "superordinate" goal:

> . . . to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated citizens who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment (p. 13).

Four major goals were derived from the superordinate goal: ecological foundations (knowledge), conceptual awareness (issues and values), investigation and evaluation (of environmental issues and solutions), and action skills.

A 1992 study by Ramsey, Hungerford, and Volk defines objectives that can serve as guides for curriculum and instruction development: awareness, knowledge, attitudes, skills, and participation. Ballantyne and Packer (1996) offer a theoretical model for developing environmental concepts that supports the above studies. They propose the integration of an individual's environmental knowledge, attitudes/values, and behavior through the use of a range of strategies.

Environmental Ethics in Environmental Education

There is a consistency in the recommended content, goals and objectives in each of the preceding studies. Environmental ethics and values compose one of those constants. An investigation into the beliefs of those who teach environmental education would shed some light on a meaningful and relevant curriculum for we tend to teach what we believe.

> What we are doing and what we collectively will do depends in large part on what we believe – about the way things are, will be, or can be – and (importantly) what is good, what is right, or what is permissible to do (Van De Veer & Pierce,1986, p.1-2).

There is acknowledgment of the influence of one's beliefs on one's actions. The inclusion of attitudes and values in the goals and objectives for environmental education and environmental ethics in the content to be used gives recognition of their importance. Ballantyne and Packer (1996) recommend that educators pay attention to the salience of an individual's beliefs and values in dealing with environmental issues. John Kirk (1994-1995) proposes that the moral dimension lies at the heart of all environmental education. It is this social component of values and ethics that has distinguished environmental education from the sciences while embracing them and all content areas. Several curricula, currently in use, have been designed to foster a positive environmental ethic. These include: The Leopold Education Project (Pheasants Forever, 1995), Engaging the Public on Biodivesity (The Biodiversity Project, 1998), Wildlife Forever (McCarthy, 1998), Leave No Trace (1992), Project Learning Tree (1997), Project WILD (1992), and Project WET (1996).

Some examples of objectives, that promote a land ethic, from these curricula are:

Project WILD

> to assist learners of any age in developing awareness, knowledge, skills and commitment to result in informed decisions, responsible behavior, and constructive actions (Project WILD,1992, p. vi).

Project WET

> to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources (Project WET,1996, p. i).

Leave No Trace

> By following the Leave No Trace! land ethic, visitors can enjoy back-country and wilderness areas . . ., while preserving the beauty and solitude (Leave No Trace, 1992, p. 1).

Leopold Education Project

> to instill a love, respect, and admiration for the land so that each individual might develop a personal land ethic (Leopold Education Project, 1995, p. vi)

Environmental Education and Q Methodology

Q methodology provides the researcher with a technique for the scientific study of human subjectivity. William Stephenson, psychologist and physicist, introduced Q methodology in 1935. Since that time it has been applied to a wide variety of substantive matters (Brown, 1993). For qualitative researchers it has become a useful addition to their repertoire. "It is simple to the point of elegance, well fortified with mathematics, increasingly supported by computer software programs, and grounded in modern philosophical and scientific principles" (Brown, 1993, p. 130).

This study is directed by Q methodology because of its ability and appropriateness for revealing, through a variation of factor analysis, the underlying structure of individuals' beliefs. In this research, the beliefs of environmental educators are investigated with respect to the critical components of environmental ethics. Other studies have found Q methodology to be the most appropriate for their investigation.

According to Townsend (1982), prior to his study, there were three studies related to environmental education that had used the Q sort techniques. In 1963, Hanselman used Q method to obtain opinions on conservation concepts and concerns that should be covered in conservation education at the university level. Bowman, in 1972, confirmed the relative importance and placement of concepts from Roth's taxonomy of concepts for environmental management education using Q method. Finally, Johnson, in 1977, used Q sort procedures to rank-order goal statements and investigate the relationship among environmental education, conservation education, outdoor education, ecological education, and environmentalized education. Townsend (1982) used the Q method to investigate the underlying structure of the domain of environmental education concepts and Chou and Roth (1995), using Q method, confirmed Townsend's findings in their study, "Exploring the underlying constructs of basic concepts in environmental education."

Although Hooker (1992) investigated human beliefs and values in regard to nature and forests, no studies were found that used Q methodology to investigate the perceptions of environmental educators with respect to the critical components of environmental ethics. There are, however, uses of Q method within the field of environmental attitude assessment: in 1963, Hoover and Shultz analyzed attitudes toward conservation

education; Horn investigated attitudes toward the term, outdoor education in 1969; Steiner, in 1972, and then Moyer in 1977 developed instruments to measure environmental attitudes; finally, in 1980 Doran assessed the environmental awareness of YCC campers (Townsend, 1982).

The use of Q methodology has gained in popularity since its introduction in 1935. It is now used by a wide range of disciplines because of its ability to investigate comprehensively subjectivity.

> The literature on Q methodology now contains more than 1,500 bibliographic entries, and journals reporting research from Q studies can be found across the social sciences spectrum, both inside and out of the English-speaking world (McKeown & Thomas, 1988).

Conclusion

This review of literature was designed to lay the foundation for this study. Before approaching an investigation of environmental educators' beliefs in relation to the critical components of a land ethic, it was necessary to describe the historical development of those perspectives leading up to the modern, Western concept of a land ethic. It also was necessary to define the terminology within the context of the concepts. One must understand the past before appreciating the present and then approaching the future.

Ethics is a "slippery" concept because it is based on one's belief system and is entirely subjective. Yet that subjective view is based on lived experiences, observable input. The environment influences one's beliefs. The daily stimuli from the cultural, physical and emotional surroundings mold personal opinion and perspective. The relationship that develops between an individual and her or his environment, both internal

and external, shapes that individual's response to the environment. That response, to an environmental stimulus, at any given time, is the result of a decision-making process. That choice to do the "good" or right thing or not is the result of ethics.

CHAPTER III

METHODS AND PROCEDURES

Introduction

Q methodology was selected to direct this study because it provides the most appropriate process to address the following research questions:

1. According to the select population of environmental educators, what are the critical components of a land or environmental ethic and what structure will be revealed?
2. What other patterns or relationships may appear that disclose important information about the nature of an individual that espouses a land or environmental ethic?

This chapter describes the methods and procedures used in this study to develop the concourse and Q sample, select the participants, and collect and analyze the data. Data collection materials are found in Appendix A. The structure of this chapter follows the same order in which the study was conducted. The first step entailed the development of a concourse related to environmental ethics concepts. From the concourse a set of environmental ethics concepts was identified and validated. It was determined that a structured Q sort and demographic information sheet would be the preferred format for collecting data. The sample of participants was determined and the data were collected.

Approvals for both phases of this study were granted by the Oklahoma State University Institutional Review Board (Appendix B). The data were entered into a computer program and analyzed (Appendix C).

Development of the Concourse

The Pilot Study

The Q sample is derived from the concourse. "In Q, the flow of communicability surrounding any topic is referred to as a concourse" (Brown, 1993). A concourse can come about in a number of ways. Because this study investigated environmental educators' beliefs about the critical components of a land ethic, an important source of data, for the development of the concourse, was the opinions of environmental educators. A pilot study was conducted for the specific purpose of gathering that data through interviews. During the summer and fall of 1998, one-on-one interviews with environmental educators were conducted. For this investigation, the concourse surrounding environmental ethics concepts was constructed from the responses recorded during those interviews (Appendix D) with individuals from a population of environmental educators and from the review of literature. Each participant that agreed to be interviewed was asked a series of questions from a set script (Appendix A). Eight individuals gave in depth interviews lasting, on the average, one hour.

Design of the Q Sample

The concourse provided a range of opinions concerning environmental ethics concepts. From the concourse the Q sample was created. Originally one hundred and four possible statements for the Q sample emerged from the interviews and literature. Because Q sorting requires more time than some other methods of collecting data, the number of statements to be sorted becomes important. Minimum and maximum limits range from 50-100 (McKeown & Thomas, 1988). Concern over participant overload and the possible lower Q sort return response rate from those participants resulted in the decision to reduce the number of statements to a more manageable number.

This reduction was accomplished by the use of an interdisciplinary panel of faculty members from the steering committee for the Environmental Institute's graduate program in environmental sciences at Oklahoma State University (Appendix A). Each member of the panel was sent a complete list of the 104 statements and asked to categorize them according to a list of theoretical constructs (Appendix A) related to environmental ethics and derived from the concourse.

The statements on which the panel members had the highest category agreement (60% and above) were kept for the Q sample. The high percentage of agreement among faculty members provided validation for the statements. Fifty-four statements (Appendix A) were used for the hybrid Q sample. A structured Q sort design, called a form board, (Appendix A) with quasi-normal distribution was created to direct the Q sorting.

Q Sorting

The sorting instructions (Appendix A) were designed to meet the needs of this study. The sorting instructions were piloted by five environmental instructors on the faculty or staff at Oklahoma State University. No sorting errors were encountered and an average of 35 minutes was required to complete the Q sort.

The instructions asked the participants to sort or rank-order the 54 statements of the Q sample into eleven piles with a specified number of statements in each pile, corresponding to a structured or forced quasi-normal distribution. Figure 1 shows the structured distribution of the statements.

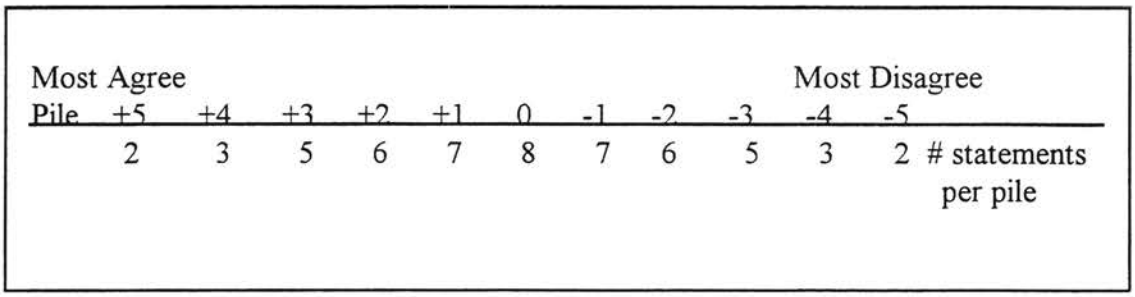

Figure 1. Distribution of Q Sort Statements.

Stevenson (1953) supports the use of a forced distribution. The forced sort does not provide significantly different results from non forced sorts on the same Q samples and does not greatly influence the results of the analysis of the data (Brown, 1980). Forced distribution facilitates the Q sort process. The conditions of instruction directed the

participants to sort the statements on a continuum from those they most agreed with on the left to those with which they most disagreed on the right. There is no right or wrong way to do a Q sort. Through the sorting of the Q sample, a model of an individual's viewpoint about the subject under consideration is revealed (Brown, 1993).

Demographic Data Sheet

The demographic data sheet (Appendix A) was designed to elicit information from each participant that would be useful in responding to the second research question: what other patterns emerge that disclose important information about the nature of an individual that espouses a land ethic? Each participant was asked to provide information in the following areas: gender, age, education level, major area of study, residence, vehicles owned, television viewing patterns, radio listening patterns, reading patterns, source of news, occupation, religious affiliation, environmental education training. The selection of these demographic descriptors was based on other Q studies. These demographics were used to further describe the revealed factors.

Exit Interview

Each participant was asked to fill out an exit interview (Appendix A) upon completing the Q sort. This gave the participant an opportunity to make comments about the process of Q sorting and about any of the statements for which they felt strongly or had concerns. In addition, participants could provide open-ended comments or other thoughts on environmental ethics.

Population Sample

The sample was composed of environmental educators from seven states (Oklahoma, Texas, South Dakota, Missouri, Ohio, Minnesota, Illinois) who attended one of several training workshops for environmental educators during 1998-1999. Participation was voluntary. The population sample (P set) included thirty individuals. Q methodology, by design, does not require a large population sample. Quality is operationally distinct from quantity. The whole process of creating and administering a Q sort is by nature and design subjective. "It [Q methodology] is intended to get at patterning within individuals (case-wise) rather that simply across individuals (factor-wise)" (Brown, 1993). In this study, the researcher included those who contributed to the development of the concourse as part of the P set. "The idea is to come up with a set of traits that characterize individuals, then compare individuals for the distribution of these traits" (Brown, 1993, p. 104).

Data Collection

Before data could be collected, the Oklahoma State University Internal Review Board was requested to waive the requirement that each participant had to sign a consent form. The requirement was waived (Appendix B). Because the data collection packets were being mailed, it would have been difficult to get signatures beforehand. Packets of materials were prepared for the 30 participants. These materials (Appendix A) included: a cover letter, the instructions, the Q sample, the demographic data sheet, the exit interview, 11 business-size (4 1/8" X 9 1/2") envelopes marked +5 most agree, +4.....-4, -5 least

agree (matching the forced distribution), and a stamped, addressed large (9" X 12") envelope for returning the responses to the investigator.

The initial return response was high. Within a month twenty-three (23) out of thirty (30) packets were completed and returned. A reminder letter was sent out and within six weeks the rest of the participants (7) had completed and returned the materials.

Data Organization

Participants in the study were presented with a set of fifty-four statements (the Q sample) related to land/environmental ethics and asked to rank-order them from those that they most agree with (+5) to those with which they most disagree (-5). This is Q sorting. The statements were designed to elicit an opinion. The participants (Q sorters) are ranking the statements depending on the participant's own point of view. This is subjective. There is no right or wrong. But the rankings will undergo factor analysis.

When the raw data was returned, it was first transferred from the marked envelopes which matched the distribution on the Q sort form board (Appendix A) to an individual Q sort form board for each participant. The data from those Q sort form boards were now ready for program entry.

The transferred data were entered into a computer program, PQMethod 2.06 (Brown, 1993). This program is designed to analyze the data. The results of the sorts were analyzed using a sequential application of three sets of statistical procedures: correlation, Q factor analysis, and the computation of factor scores. The initial factor extraction is by principal components. An orthogonal rotation (VARIMAX) was used. Standardized factor scores were computed for the factor solutions which were developed.

In Q, the role of mathematics is to prepare the data to expose the structure of the revealed factors. The resulting factors, because they came from individual subjectivities, will describe these divisions of subjectivity which do exist. Since Q methodology is interested in the nature of the divisions and how similar and dissimilar they are to each other the issue of large numbers of participants, as is found in traditional quantitative studies, is relatively unimportant.

The statistics associated with Q sort are designed to register the degree of similarity and dissimilarity between revealed factors. A factor analysis is used to examine a correlation matrix in order to determine how many different factors are present. Q factor analysis is used to identify the number of common responses that characterize a particular collection of individuals (Anderson et al., 1997), in this case, environmental education facilitators. The factor analysis also identifies shared perspectives on land/environmental ethics. The factors in this study represent the different conceptualizations about the nature of a land or environmental ethic.

CHAPTER IV

ANALYSIS OF DATA

Overview

This chapter discusses the results of the data analysis. This discussion includes: a description of the participants and each of the revealed factors. These descriptions are based on: the factor matrix with the loadings that indicate a defining factor; the rank statement totals with each factor; the distinguishing and consensus statements for each factor; and the variance across normalized factor scores, consensus versus disagreement. The demographic data is presented in relationship to the disclosed factors.

Description of Participants

The sample as shown in Table I included thirty (30) individuals, nineteen (19) females and eleven (11) males, composed of environmental educators from seven states (Oklahoma, Texas, South Dakota, Missouri, Ohio, Minnesota, Illinois) who attended one of several training workshops for environmental educators during 1998-1999. The age range spanned from eighteen (18) to plus sixty-three (63) years. The highest level of education completed ranged from high school diploma through doctorate degrees, including: two (2) high school diplomas, six (6) bachelor's degrees, fifteen (15) masters' degrees, and seven (7) doctorate degrees. Twenty-five (25) out of thirty (30) claimed

some form of religious affiliation, but only sixteen (16) stated that they were active. Eight individuals (8) described the setting of their childhood residence as suburban, eight (8) as urban, and fourteen (14) as rural. Twelve participants (12) described their current residential setting as suburban, seven (7) as urban, and eleven (11) as rural. Most, twenty-three (23), own their own home as opposed to renting, seven (7), a place to live. All were trained in two or more national environmental education programs. The greatest number, twenty-six (26) have been trained in Project WILD, twenty-two (22) in Project WET, twenty (20) in Project Learning Tree, thirteen (13) in Leopold Education Project, and four (4) in Leave No Trace. All watch PBS either often (16) or occasionally (14). All but eight (8) listen to National Public Radio either often (17) or occasionally (5). Sources of news include: local and national (CNN, The Today Show) television; local and national (USA Today) newspapers; magazines (*U.S. News and World Report, Newsweek*); local and national (NPR) radio; professional journals; the Internet; and friends. Occupations included: university professors; classroom teachers; education specialists (space, wildlife, conservation, and environmental education); a naturalist-interpreter; an academic counselor; wildlife researchers; soil conservationists; students; an attorney; and one self-employed.

TABLE I

GENERAL DEMOGRAPHIC DESCRIPTION
OF PARTICIPANTS

Age Range					
18-26	21-35	36-44	45-53	54-62	63+
3	3	8	11	3	2
Gender					
Male	Female				
11	19				
Level of Education					
HS	Bachelors	Masters	PhD		
2	6	15	7		
Religious Affiliation					
Yes	Active	No			
25	16	5			
Home Ownership					
Own	Rent				
23	7				
Environmental Education Training					
WET	WILD	PLT	LEP	LNT*	
22	26	20	13	4	
Watch PBS					
Often	Occasionally	Never			
16	14	0			
Listen to NPR					
Often	Occasionally	Never			
17	5	8			

Note: LNT* = Leave No Trace.

Description of Revealed Factors

The intent of the research was to reveal the underlying structure of the domain of critical components of environmental ethics by analyzing the perceptions of environmental educators. To reveal this underlying structure, the theoretical arrays, a factor analysis was performed on the correlation matrix derived from the raw Q sorts. A principal component analysis was the next routine completed. A VARIMAX rotation followed. Finally, the rotated factor matrix was input into the QANALYZE routine, which differentiates the factors based on the original Q sort statements. A three factor solution emerged that accounted for 62% of the total variance as shown in Table II. These are the factors that will be described. These three factors represent the groupings or clusters of individuals who hold similar beliefs about environmental ethics.

Eleven(11) individuals loaded on the first factor, five (5) on the second, and seven (7) on the third. For all three factors, only pure or high loads were used to calculate the z scores. The rank statement totals with each factor (see Appendix C Table C-III) include the normalized factor (z) scores and rank. These statistics, along with the factor arrays, including the distinguishing and consensus statements (see Appendix C Tables C-IV, C-V, C-VI, C-VII, and C-VIII), are used to create a "snapshot" of each factor by placing the ranked statements for each factor onto separate Q sort form boards (see Appendix C Figures C-2, C-3, and C-4) for interpretation. Marking the distinguishing statements with a star (*) and the consensus statements with a plus (+) helps to add detail to the emerging portrait of each factor.

TABLE II

FACTOR MATRIX WITH AN X INDICATING
A DEFINING FACTOR LOADING

	Q Sort	Factor 1	Factor 2	Factor 3
1	SR	.5213	.0139	.6774X
2	LK	.3582	.4585	.6302X
3	BW	.3464	.3729	.3298
4	KO	.1202	.4345	.6956X
5	MR	.4901	.5505	.4378
6	SS	.5921	.4120	.4947
7	TM	.4867	.3300	.5028
8	GL	.2883	.6503X	.0588
9	PC	.8331X	-.0378	.1876
10	MSt	.1626	.0490	.8137X
11	CC	.6838X	.2873	.1292
12	JR	.4944X	.0726	.4356
13	LC	.2668	.4028	.4233
14	MMc	.6358X	.2421	.4601
15	MH	.3853	.2403	.5243X
16	CR	.5849X	.1906	.5010
17	SM	.4434	.7276X	.1238
18	CK	.5950X	.3223	.2221
19	CM	.6746X	.0001	.4089
20	MS	.6646X	.3763	.2988
21	AH	.5387	.5985	.3041
22	LA	.2027	.4375	.5686X
23	LW	.2801	.3248	.7769X
24	BS	.7579X	.2657	.2470
25	SSp	.7821X	.1820	.3101
26	MSu	-.2172	.6911X	.3194
27	PW	.4557	.4676	.1931
28	AP	.4015	.6524X	.0651
29	MMcA	-.1652	.7821X	.2900
30	CS	.7622X	.0943	.1038
% explained variance		26	17	19

Note: X is determined at a .05 level of significance,

Factor One, Nature's Advocates

The eleven individuals (nine female, two male) that loaded on the first factor could be designated the advocates for nature. They believe that it is important to teach conservation and preservation and to apply critical thinking skills in solving environmental problems. They see nature as an equal, deserving of rights. They will defend the rights of nature. They have a sense of equality for all components of the environment. Their actions are Earth driven or directed.

These inferences about the commonalties of those individuals who loaded on factor one are derived from the rank statement totals (See Appendix C Table C-III), which include the normalized factor (z) scores along with the rank and the distinguishing statements for factor one (Appendix C Table C-V) which include the z scores and factor arrays. The statements that they most agreed with had the highest normalized factor (z) scores and were placed in the +5 column on the Q sort form board (Appendix C Figure C-2). The following table (Table III) lists factor one statements based on five highest, five lowest, and four most distinguishing. Some of those statements are:

- #39 Current and future generations must be educated about environmental problems and how to go about solving them
- #11 Our obligations to preserve the land isn't just a responsibility to other people but to the whole environment.

TABLE III

FACTOR 1, NATURE'S ADVOCATES: FIVE HIGHEST (MOST AGREED WITH), FIVE LOWEST (MOST DISAGREED WITH) RANKED STATEMENTS, AND DISTINGUISHING STATEMENTS

Statement No.	Statement	(z) Score
Five Highest Ranked Statements		
39	Current and future generations must be educated about environmental problems and how to go about solving them.	1.781
11	Our obligations to preserve the land isn't just a responsibility to other people but to the whole environment	1.744
26	Communication and education are very important for dealing with environmental problems.	1.686
18	Conservation responsibilities should be shared and practiced by individuals, businesses and industries, special interest groups, and all levels of government.	1.497
49	Plants and animals have intrinsic, aesthetic, and spiritual value, even if they are not of any use to humans.	1.326
Five Lowest Ranked Statements		
3	Moral, ethical considerations should only apply to fellow human beings because we are a higher form of life.	-2.150
21	The creator gave us dominion over all living things.	-1.988
37	The positive benefits of economic growth far outweigh any habitat loss.	-1.881
41	Natural resource depletion has been blown out of proportion.	-1.706
32	It is not necessary to reduce our standard of living in order to protect the environment.	-1.620
Four Most Distinguishing Statements		
11	Our obligations to preserve the land isn't just a responsibility to other people but to the whole environment.	1.744
25	People must uphold the rights of all living things.	1.161
21	The creator gave us dominion over all living things.	-1.988
51	Wildlife is a public resource.	-.983

Note: Based on normalized factor (z) scores.

Their positively ranked distinguishing statements further confirm the above description. Among these distinguishing statements are:

- #13 (+3) Justice is not only for human beings, we need to be as fair to all life as we are toward people.
- #25 (+3) People must uphold the rights of all living things.
- #27 (+2) Capitalism may be the best system available, but a fundamental problem with it is that it doesn't recognize the value of things that can't be bought or sold.

Support also comes from the distinguishing statements with which they most disagree:

- #21 (-5) The creator gave us dominion over all living creatures.
- #51 (-3) Wildlife is a public resource.

Those loading on factor one go so far as to distinguish themselves from the other two factors by ranking statement # 44, [The earth as a whole must be preserved even if the human species does not survive], considerably higher (0 column) on the Q sort distribution. Factors two and three place statement #44 in the –5 and –3 columns respectively. This indicates that they feel strongly about the earth as a whole and do not see human beings as having rights different from the rest of the environment. This ties in with their strong disagreement (-5) with the above statement #21 which implies that humans have dominion over nature.

Some of those who loaded high (0.68 - 0.83) in factor one also were interviewed for the concourse development. Their interview comments had some common themes:

- all parts of the environment have "intrinsic" value, even if they are not useful to human beings;
- a "holistic" approach is needed when considering what to "save"; and,
- attitudes must shift from an "anthropocentric" view to a bio or "ecocentric" one.

The exit interviews for these high loaders echoed statements made in the pilot study interviews:

- we all share equal status;
- we must "resonate with nature";
- we must understand our (human) niche;
- we must value "living and non-living" components equally; and,
- we must value may be "spiritual, aesthetic, not only economics"

Factor Two, Nature's Stewards

The second factor had five people (three female, two male) load on it. These individuals could be described as the stewards of the environment. There are some obvious distinctions between them and those loading on factor one. Those loading on factor two see nature as the creator's gift to humankind rather than having equal status. They see it as their duty to teach responsible dominion over nature and the use of its resources as opposed to preservation for the intrinsic value of the environment. Their actions are God driven rather than Earth directed.

The above inferences about those loading on factor two are derived from the same statistical sources as factor one (rank statement totals and the distinguishing statements, in

this instance for factor two). There were three positive distinguishing statements (see Appendix C Table C-VI) that support the above description of factor two loaders:

- #30 Individual's have a moral responsibility, as God's stewards, for their environmental decisions;
- #22 The creator intended that nature be used by humans, not worshiped by them; and,
- #21 The creator gave us dominion over all living creatures.

Strongly agreeing with statements:

- #39 Current and future generations must be educated (+5);
- #26 Communication and education are very important for dealing with environmental problems (+4); and,
- #9 Parents must model positive conservation behaviors for their children(+4).

The above statements indicate a belief in educating and modeling to one's children a responsible dominion of the creator's gifts to humankind (See Appendix C Figure C-3).

Evidence for a belief that the earth should be used, that it is their duty to do so is provided by another positive distinguishing statement #7 [It is important for us to develop new technologies that will allow us to more efficiently use natural resources]. The placement in the neutral (0) column of distinguishing statement #1 [It may be necessary to drain wetlands if that area is needed for human development and to create jobs], indicates an ambivalence toward nature. The dominion view point is supported by strong disagreement (-5) with the statement of # 44 [The earth as a whole must be preserved even if the human species does not survive]. The following table (Table IV) lists the five highest, five lowest, and four most distinguishing statements of factor two.

TABLE IV

FACTOR 2, NATURE'S STEWARDS: FIVE HIGHEST (MOST AGREED WITH), FIVE LOWEST (MOST DISAGREED WITH) RANKED STATEMENTS, AND DISTINGUISHING STATEMENTS

Statement No.	Statement	(z) Score
Five Highest Ranked Statements		
18	Conservation responsibilities should be shared and practiced by individuals, businesses and industries, special interest groups and all levels of government.	1.645
39	Current and future generations must be educated about environmental problems and how to go about solving them.	1.503
30	Individuals have a moral responsibility, as God's stewards, for their environmental decisions.	1.483
26	Communication and education are very important for dealing with environmental problems.	1.475
9	Parents must model positive conservation behaviors for their children.	1.465
Five Lowest Ranked Statements		
44	The earth as a whole must be preserved even if the human species does not survive.	-2.055
37	The positive benefits of economic growth far outweigh any habitat loss.	-1.758
41	Natural resource depletion has been blown out of proportion.	-1.716
3	Moral, ethical considerations should only apply to fellow human beings because we are a higher form of life.	-1.587
46	Energy conservation means doing without some things that give us comfort and enjoyment.	-1.392
Four Most Distinguishing Statements		
30	Individuals have a moral responsibility, as God's stewards, for their environmental decisions.	1.483
22	The creator intended that nature be used by humans, not worshiped by them.	1.284
44	The earth as a whole must be preserved even if the human species does not survive.	-2.055
48	In order to survive, I need a special place outdoors where I can go to be alone and commune with nature.	-.888

Note: Based on normalized factor (z) scores.

Exit interview comments from those loading on factor two support the overall characterization of this factor. The following are examples of those supporting comments:

- "God gave dominion" to human beings over nature;
- we have a "right" to use the earth's resources;
- "man was put here to care for them";
- technology can "correct mistakes we've made";
- we must produce the least negative impact and educate the "young people";
- "early education is important";
- "modeling" to children on how to care for the environment; and,
- we have "responsibility" "ownership and consequences" for the choices we make.

Factor Three, Nature's Romantics

Seven people (four female, three male) loaded on the final factor. The term romantic is used here in the classical sense, implying an impractical, idealized, naïve, and escapist outlook. Preserving the aesthetics of nature, for personal enjoyment rather than for the common good (factor two) or for the sake of the total environment (factor one), is important to them. They embrace a personal, aesthetic relationship with nature as opposed to a holistic and equal (factor one) or a sovereignty (factor two) association with the Earth. They feel a sense of appreciation for the beauty of the outdoors and seek solace there. These people would teach the importance of individual or personal use of the environment before espousing preservation or conservation (factor one) and the duty of responsibility (factor two) towards the Earth. They are self driven rather than God or Earth guided in their actions.

As with the first two factors, inferences about those loading on factor three are derived from the rank statement totals (Appendix C Table C-III) and the distinguishing statements for factor three (Appendix C Table C-VII). There appears to be conflict in the rankings of the statements for this group. Distinguishing statement #48 [In order to survive, I need a special place outdoors where I can go to be alone and commune with nature], supports the inference of the importance of an aesthetic relationship with nature for factor three, along with strongly agreeing (+5) with statement # 49 [Plants and animals have intrinsic, aesthetic, and spiritual value, even if they are not of any use to humans]. Yet they disagree with statement #4 [Nature's beauty inspires people to care for and preserve it]. Table V lists the five highest, five lowest, and four most distinguishing statements of factor three.

Several distinguishing statements provide further evidence of conflict of beliefs held by those loading on factor three (see Appendix C Figure C-4). First, they disagree with the statement #44 [The earth as a whole must be preserved even if the human species does not survive], which indicates a more anthropocentric view and they disagree with statement # 21 [The creator gave us dominion over all living things]. Then they agree with statement # 51 [Wildlife is a public resource]. The following statements conflict with one another. Those loading on factor three strongly agree (+4) with:

- # 28 The value of the environment cannot always be easily defined in economic terms;
- # 2 Nature's genetic diversity is important as a source for our food supply; and,
- #6 A healthy environment is necessary for a healthy economy.

TABLE V

FACTOR 3, NATURE'S ROMANTICS: FIVE HIGHEST (MOST AGREED WITH), FIVE LOWEST (MOST DISAGREED WITH) RANKED STATEMENTS, AND DISTINGUISHING STATEMENTS

Statement No.	Statement	(z) Score
Five Highest Ranked Statements		
48	In order to survive, I need a special place outdoors where I can go to be alone and commune with nature.	1.837
49	Plants and animals have intrinsic, aesthetic, and spiritual value, even if they are not of any use to humans.	1.385
6	A healthy environment is necessary for a healthy economy.	1.336
28	The value of the environment cannot always be easily defined in economic terms.	1.238
50	All living things are equally interdependent with each other and their environment.	1.235
Five Lowest Ranked Statements		
37	The positive benefits of economic growth far outweigh any habitat loss.	-2.093
1	It may be necessary to drain wetlands if that area is needed for human development and to create jobs.	-1.939
41	Natural resource depletion has been blown out of proportion.	-1.830
3	Moral, ethical considerations should only apply to fellow human beings because we are a higher form of life.	-1.817
23	All nature is inherently awe-inspiring and beautiful. Humans create ugliness.	-1.557
Four Most Distinguishing Statements		
48	In order to survive, I need a special place outdoors where I can go to be alone and commune with nature.	1.837
51	Wildlife is a public resource.	1.225
21	The creator gave us dominion over all living things.	-1.295
44	The earth as a whole must be preserved even if the human species does not survive.	-1.238

Note: Based on normalized factor (z) scores

Statement #39 [Current and future generations must be educated about environmental problems and how to go about solving them], was strongly agreed (+5) with by those in factors one and two whereas factor three was fairly ambivalent(+1) about education. This was a distinguishing statement for factor three.

Several of those who loaded on factor three were interviewed as part of the concourse development during the pilot study. Their interview comments along with statements from their exit interviews, offer some clarification concerning the conflicts:

- "Education can fill in the chinks" after the ethic is developed;
- It's important to understand the "non-economic value of conserving natural resources.";
- "Being outdoors at an early age";
- "a connectedness with a place" must take place first to create an appreciation before a land ethic can develop;
- "Education is key to a personal connection."; and,
- "The most critical component to developing a personal ethic is parents that help establish this ethic early in childhood," "Education-that's just what I believe in."

Consensus statements are those that do not distinguish between any pair of factors. They reveal information about agreement among the factors. The following are statements with which all three factors agreed.

- #54 It's important to conserve resources on a daily basis.
- #43 We have a responsibility to use resources in the most efficient way possible without mindlessly depleting them.

- #35 The management of natural resources to meet the needs of successive generations demands long-range planning.
- #12 As stewards of the environment, we must take care of all living things.
- #24 Being out in nature can revitalize your spirit.
- #15 A person must develop a sense of place in order to feel connected with nature.

Similarly, statements with which all three factors disagreed indicates consensus. The following statements fall into that category of mutual disagreement.

- #37 The positive benefits of economic growth far outweigh any habitat loss.
- #41 Natural resource depletion has been blown out of proportion.
- #40 By the time climate changes start occurring, it's going to be too late to do anything, the change will probably be irreversible.
- #17 A fuel tax would be an unfair way to reduce fuel consumption because some people are dependent on a certain amount of fuel due to their job or personal needs.
- #14 Soil productivity is best maintained by utilizing known agronomic, mechanical, and chemical processes.

Demographic Data

The demographic data offered some interesting comparisons among factors. Those loading on factor one tended to be female, middle-age (eight of eleven fell between the ages of 45-62). Nine of the eleven hold masters' or doctorate degrees. Nine out of

eleven own their home. Even though the majority grew up in a rural setting, the majority now live in a suburban setting. Nine of eleven indicated that they had a religious affiliation but only five stated that they were active. All have been trained in WILD, nine in WET, seven in PLT, five in LEP, and three in Leave No Trace. On the average, individuals spend three to ten hours a week reading for pleasure. All watch PBS and all but two listen to NPR. The majority watch the local news on television (10) or read the newspaper (8).

Those in factor two tended to be younger (18-44) than those in factor one. One has earned a Master's degree, two bachelors' degrees, and two have high school diplomas. Two own and three rent their home. Currently the majority live in a urban or suburban setting, although three grew up in a rural setting. All claim a conservative religious affiliation and four of the five are active. All are trained in WILD, three in WET, three in PLT, one in LEP, and none in Leave No Trace. On the average three hours per week are spent reading for pleasure. All watch PBS but only two listen to NPR. The majority get the news watching television and reading the newspaper.

The ages of those loading on factor three fell between twenty-seven and fifty-three. That is between the average ages of factor one and two. One holds a bachelor's degree and the other six have masters' degrees. Five of the seven own their home. The majority(3) grew up in a rural setting and the majority (4) currently live in rural setting. Five of the seven claim a religious affiliation, three are active. Six of the seven are trained in WILD, WET, and PLT, five in LEP, and one in Leave No Trace. On the average eight hours a week are spent reading for pleasure. All watch PBS and six of seven listen to NPR. The majority get the news from television or the newspaper.

Summary

Subjectivity is thought by some to be impossible to study systematically. Q methodology uses a distinct set of psychometric and operational principles that, when combined with specialized statistical applications of correlation and factor-analysis techniques, provide researchers with a methodical and rigorously quantitative means for investigating human subjectivity. This is based on a twofold assumption that points-of-view are communicable and always advance from a position of self-reference. As such, subjective communication is amenable to objective analysis and understanding (McKeown & Thomas, 1988).

This chapter has analyzed the data provided by thirty environmental educators. This data was in the form of rankings of statements of opinion and belief about environmental ethics that then were subjected to a series of specialized statistical techniques. The resulting factors or divisions, because they came from individual subjectivities, indicate divisions of subjectivity that exist. The interest is in the nature of the divisions and the extent to which they are similar or dissimilar. The issue of large numbers is shown to be relatively unimportant (Brown, 1993).

Three distinct factors or divisions emerged from the factor analysis. They represent groupings of like opinion. The Nature's Advocate factor represents the opinion that nature is to be treated as an equal with equal rights. The Nature's Steward factor expresses the opinion that nature is to be dominated because it is the creator's gift to humankind, but it is a responsible dominion. The Nature's Romantic factor espouses the opinion that nature is to be enjoyed aesthetically for its intrinsic value. Comparing these

factors provides insight into the opinions and beliefs of this group of environmental educators and reveals that, although they do share some commonalities, this group of environmental educators do not all think alike.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

This study validated and determined the relative importance of a set of environmental ethics concepts and investigated the underlying structure of the domain of this set of concepts as perceived by a population of thirty (30) environmental educators from seven (7) states, trained in one or more of five nationally recognized environmental education programs (Project WILD, Project WET, Project Learning Tree, Leopold Education Project, Leave No Trace). A three-factor solution emerged from the data. Demographic data, pertaining to the participants, was reviewed and provided additional descriptors of each factor.

One hundred four (104) environmental ethics concepts initially were identified through the development of a concourse. This concourse was derived from the review of related literature and responses given during individual interviews, completed during a pilot study, of eight (8) environmental educators. The number of concepts was reduced to fifty-four (54) statements by using an interdisciplinary panel of faculty members of the steering committee for the Environmental Sciences graduate program at Oklahoma State University in Stillwater, Oklahoma.

These fifty-four (54) statements formed the basis of the Q sample that was used to investigate the perceptions of environmental educators in reference to critical concepts of land or environmental ethics. Thirty (30) environmental educators completed a Q sort, using the Q sample statements. In addition, each participant completed a demographic data sheet and an exit interview.

The Q sort data was entered into a statistical analysis program (PQMethod 2.06). This program is designed to analyze the data. The results of the sorts were analyzed using a sequential application of three sets of statistical procedures: correlation, Q factor analysis, and the computation of factor scores. The initial factor extraction is by principal components. An orthogonal rotation (VARIMAX) was used. Standardized factor scores were computed for the factor solutions which developed.

In Q, the role of mathematics is to prepare the data to expose the structure of the revealed factors. The resulting factors because they came from individual subjectivities, will describe these divisions of subjectivity which do exist. Since Q methodology is interested in the nature of the divisions and how similar and dissimilar they are to each other, the issue of large numbers of participants is relatively unimportant.

The statistics associated with Q sort are designed to register the degree of similarity and dissimilarity between revealed factors. A factor analysis is used to examine a correlation matrix in order to determine how many different factors are present. Q factor analysis is used to identify the number of common responses that characterize a particular collection of individuals (Anderson et al., 1997), in this case, environmental educators. The factor analysis also identified shared perspectives on land/environmental

ethics. The factors in this study represent the different conceptualizations about the nature of a land or environmental ethic.

The demographic data sheet was designed to retrieve information about the participants pertaining to: gender, age, education level, residential setting currently and in childhood, ownership of residence, number of vehicles owned, religious affiliation, occupation, sources of news, hours spent reading for pleasure, and type of environmental education training. On the exit interview, participants were asked to make comments related to the Q sorting process and the statements. Participants were requested to describe what they believe are the critical elements or components of environmental ethics and to explain their reason for choosing those elements.

The Q sorts, the demographic data sheets, and the exit interviews were designed to respond to the research questions:

1. According to the select sample of environmental educators, what are the critical components of a land or environmental ethic and what structure will be revealed by the data?
2. What other patterns or relationships may appear that disclose important information about the nature of an individual that espouses a land or environmental ethic?

The participants (N=30) were selected from a pool of environmental education workshop participants who have been trained in the use of the environmental education materials developed by either Project WILD, Project WET, Project Learning Tree, Leopold Education Project, and/or Leave No Trace.

Discussion of Research Findings

Statistical analysis revealed a three-factor solution which accounted for sixty-two (62) percent of the total variance. These three factors were named and interpreted as the underlying dimensions of the set of critical environmental ethics components. The interpretation was based on: the rank statement totals with each factor, which includes the normalized factor (z) scores and ranking; the factor arrays; and the distinguishing and consensus statements for each factor. The factors are:

1. Nature's Advocate: Equal Rights for All – This factor accounts for twenty-six (26) percent of the variance. It stresses nature, the environment, as deserving of equal rights with human beings. Actions by humans should be earth driven and promote advocacy for the rights of all of nature. Education about, for and of the environment is important and should include a holistic worldview. The environment has intrinsic worth.

2. Nature's Steward: Responsible Dominion – This factor accounts for seventeen (17) percent of the variance. Nature is the creator's gift to humankind. A utilitarian worldview is advocated and is God driven. It is a responsibility, a duty to care for the environment and to use its natural resources in a thoughtful and educated manner. The environment has economic worth.

3. Nature's Romantic: Aesthetic Relationship – This factor accounts for nineteen (19) percent of the variance. It promotes an appreciation for nature's beauty and inherent worth. Nature is important for renewing one's soul. Nature is to be preserved for its

aesthetic value. This factor's worldview is ecocentric and aesthetic, and integrates a classic romantic perspective toward nature.

The demographic data comparisons among factors indicate that those individuals who loaded on the Nature's Advocate factor tended to be female, older, and had completed a higher level of education than those loading on the other two factors. Nature's Stewards are comprised of the youngest individuals, had the lowest level of education completed and all claim a conservative religious affiliation. Nature's Romantics, demographically, fall between factors one and two. The majority grew up and currently reside in a rural setting. There were no significant differences among the factors with respect to: sources of the news, television viewing patterns, reading patterns, number of vehicles owned, or environmental education training.

Conclusions

Environmental ethics is becoming an accepted and desired component of environmental education. In response to recent changes in the family and a loss of sense of community, along with the unprecedented growth in our population and the globalization of society, the need has been felt to intervene in the development of ethics (Matthews & Riley, 1995). The urgency to include an ethical component in curriculum design has been acknowledged (The Biodiversity Project, 1998; McCarthy, 1988; Murray, 1996). The question is no longer whether environmental ethics should be taught, but what environmental ethics should be taught (Benchmarks for Environmental Literacy Project, 1996; Gigliotti, 1990; Ballantyne & Packer, 1996)?

Because environmental educators are the instruments of implementation of environmental education, revealing what they believe about environmental ethics' critical components is crucial to developing a relevant curriculum. The significance of this study lies in the potential connection between environmental educators' perceptions of environmental ethics and what happens in the educational setting. The assumption is that a teacher's conception of environmental ethics is one factor that shapes teaching and learning. Recent research suggests that beliefs about subject matter influence teacher selection of content and pedagogy (Grossman, Wilson, & Shulman, 1989; Wilson & Wineburg, 1988). The structure of environmental ethics' concepts that this study revealed has implications for environmental education.

To include the three concepts of environmental ethics, that emerged from the factor analysis, in an environmental education curriculum, would be one logical step. A curricular environmental ethics component should include a variety of world views, including but not limited to; holistic, responsible utilitarian, and aesthetic.

Recommendations

This study revealed what a specific group of environmental educators believe are critical components or concepts of environmental ethics. Support for some theoretical constructs of environmental ethics is provided by this investigation as well as some insight into what educators believe is important to include when teaching environmental ethics. In addition, individuals who share certain demographic descriptors also may share similar beliefs about environmental ethics.

Based on the results, the following recommendations are made:

- Repeat this study using each of the following groups separately or in combination:

  1) secondary school teachers,

  2) elementary school teachers,

  3) agency personnel from all government levels,

  4) representatives from industry,

  5) the students or former students of 1 and 2,

  6) other groups of environmental educators.

- There were seven individuals who did not load, this could be because the statements were not well written and not understood, or some statements emphasized two or more different subjects or themes, making it difficult to sort. It is also possible that those seven individuals hold beliefs about environmental ethics that are shared with all three revealed factors that prevent them from loading on one factor. This indicates a need to refine some of the statements in order to increase the number of individuals who load on a factor.

Concluding Comments

Q methodology offers the researcher a way to investigate the beliefs and perceptions about land ethics of a specified population of environmental educators. For this study, the significance lies in the potential connection between the environmental educators' perceptions of critical components of a land ethic and the continued development of meaningful environmental education curricula for a wide range of learners.

This offers a potentially rich area for further research. If indeed, environmental educators' perspectives of land ethics shape their pedagogy, then this study may provide some insight into the nature of environmental education.

The three factors revealed in this study echo Leopold's definition of what is right. "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community" (Leopold, 1949, p. 224). Nature's Advocates represent integrity; Nature's Stewards, stability; and Nature's Romantics, beauty. These land virtues; integrity, stability, and beauty should be those character traits that environmental education fosters. The environmental educators in this study would seem to concur as evidenced by their revealed beliefs.

As with Aristotle's ethics, Leopold's land ethic focuses on the formation of an ethical character rather than on the defense of some absolute moral rule or principle (Des Jardins, 1993). Moral education has an important role to play in the evolution of ethics. It is the moral dimension of environmental education that lies at the heart of all environmental education (Kirk, 1994-1995; Colwell, 1997; Sobel, 1996; Knapp, 1999).

If indeed, as reported in Dunlap's (1987) public opinion research and confirmed by Noe and Snow's study (1990), there is a "significant" increase in public concern for environmental quality then environmental education has a role to play. The kind of education needed begins with the acknowledgment that the global environmental crisis is first and foremost a crisis of values, ideas, perspectives, and knowledge, which makes it a crisis of education. A first step is to reeducate the teachers, administrators, and board members because "those presuming to shape the minds that will shape the future must comprehend what the future requires of them" (Orr, 1994).

> Educating for a positive environmental ethic is not a straightforward task.
>
> In approaching the field of environmental ethics, it is important that environmentalists recognize that it is very unlikely that work in this area will ever produce a single set of rules or values which compose a single, universally accepted environmental ethic (Disinger & Opie, 1985).

Study and research in ethics over the last two thousand years, generally has tended to produce more not fewer positions. Environmental educators need to remember that the development of an ethic is an on-going process. Therefore there will never be a time when an environmental ethic will be complete and ready for the public to use, so there is no reason for environmental educators to wait.

One possible first step for environmental educators would be to assess their own ethical relationship toward the environment and then that of their students. In his book, In Accord with Nature (1999), Clifford Knapp suggests that one way to assess

> students' environmental ethic development is to ask them to write a brief statement about their associations with nature and how they perceive their responsibilities toward using and protecting it.(Knapp, 1999)

This statement may be a few sentences or an essay. The statement should be revisited and revised many times throughout the course of the year. The author then offers his beliefs, attitudes, and values that he has written and revised over time as an example. He selects specific items that he believes are right and other things that are wrong. He considers his relationship to nature, technology, and his community, now and in the future. The idea is that underlying these statements is knowledge about how nature works and how one's lifestyle relates to nature (Knapp, 1999).

This study has revealed that even among environmental educators with similar training and backgrounds there are widely varying opinions and beliefs about what the

critical components of an environmental ethic are. This variation may manifest itself in radically different and conflicting curricula and pedagogy in environmental ethics education.

In the context of differing opinions about which environmental ethics to promote, the first step may be to reveal and review what one believes and values in relation to the environment. Then a discussion based on commonalties and differences can take place that can lead to common goals and objectives for the development of that relationship. But first there must be an understanding and acknowledgment of what those beliefs are.

> Land then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants and animals . . . An ethic to supplement and guide the economic relationship to land presupposes the existence of some mental image of land as a biotic mechanism. We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in (Aldo Leopold, A Sand County Almanac, 1949, p.216).

In the above quote, Leopold acknowledged the significance of the influence of one's beliefs ("faith") on one's relationship with "the land." A view of the inner workings of a person's decision-making mechanism is revealed in an individual's beliefs. Hopefully that revelation will provide the opportunity for meaningful dialogue. The future of human beings depends on being able to have a meaningful dialogue and relationship with the environment. As a species, humans must ask what their role in nature is to be as the environment continues to change. Getting a glimpse of the human belief system may enable one to "do the right thing" in a dynamic relationship with the earth.

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APPENDIXES

APPENDIX A

DATA COLLECTION MATERIALS

Interview Script for Pilot Study

I am going to ask you a series of questions pertaining to environmental education in general and to land ethics in particular. Your decision to respond is strictly voluntary. You may request to stop at anytime and may refuse any request. Your request will honored in good will and there will be no penalties. Your anonymous responses to the following questions will be used in research investigating the development of a land ethic. This will aid the researcher in learning more about critical components of a program that strives to facilitate the development of a land ethic.

The interview will take approximately 30 minutes. Any responses that are recorded, written or taped, will be done so in total anonymity You will not be identified as a participant at anytime or in any way. Do I have your permission to tape record your responses? Thank you for you participation.

Questions

What do you think are some key components of environmental education?

Why did you choose those components?

Briefly describe an ideal environmental education curriculum.

Do you think that the development of a land ethic is a critical component of environmental education? Why or why not?

In your own words, define land ethic.

What is included in the concept of a land ethic?

Do you believe that a piece of literature can facilitate the development of a land ethic? Why or why not? Then if you believe that literature can facilitate this development of a land ethic, how do you think that it facilitates this development?

How would you describe your level of familiarity with Leopold's A Sand County Almanac? When was the last time that you read the book? How often have or do you read the book?

What components in A Sand County Almanac make it a persuasive piece of literature?

What do you believe was Aldo Leopold's intent when he wrote A Sand County Almanac?

Why do you think that the Leopold Education Project is so effective?

How would you describe its critical components?

Why did you want to become an LEP facilitator? Why do you continue to be and LEP facilitator?

How would you describe Leopold's land ethic? What are its key components? How do you think that Leopold personally developed his land ethic?

Are there any other elements that are important to include in an environmental education curriculum?

INTERDISCIPLINARY PANEL OF FACULTY MEMBERS OF THE STEERING COMMITTEE OF THE ENVIRONMENTAL SCIENCES GRADUATE PROGRAM AT OKLAHOMA STATE UNIVERSITY

Dr. Kay Bull, Professor, School of Applied Health and Educational Psychology, Educational and School Psychology

Dr. Lowell Caneday, Professor, School of Applied Health and Educational Psychology, Leisure Studies

Dr Christine Cashel, Professor, School of Applied Health and Educational Psychology, Leisure Studies

Dr. William Focht, Assistant Professor, Political Science

Dr. Terrence Mills, Professor, emeritus, School of Curriculum and Educational Leadership, Science and Environmental Education

THEORETICAL CONCEPTS IN ENVIRONMENTAL ETHICS

Use the following theoretical concepts to categorize the Q sample statements.

Code Concept Category

B Behavioral response toward the environment, [something that you do], such as teaching about the environment, conserving (reduce, reuse, recycle), picking up litter, or planting trees.

K Knowledge/awareness of the environment, [something that you know], e.g. understanding the basic principles of ecology, the functions of biosystems, complexities of nature, and the effects of human interactions with the environment.

S Spiritual response to the environment, [something that you feel], e.g. a sense of spirituality, sense of place, presence of the creator, reverence, or respect toward the earth and all its components.

N Value for non-human life, [something that you believe], extending human ethics and moral consideration to all forms of life (e.g. plants, reptiles, microbes....).

L Value for the land and the abiotic components of nature, [something that you believe], extending human ethics and moral consideration to the soil, rocks, landforms, (e.g. valleys, mountains, plains), bodies of water (e.g. rivers, lakes, wetlands), the air.

Q SAMPLE, Q SORT STATEMENTS

1. It may be necessary to drain wetlands if that area is needed for human development and to create jobs.
2. Nature's genetic diversity is important as a source for our food supply.
3. Moral, ethical considerations should only apply to fellow human beings because we are a higher form of life.
4. Nature's beauty inspires people to care for and preserve it.
5. The need of humans to turn inward for self-renewal can be stimulated by their external esthetic experience.
6. A healthy environment is necessary for a healthy economy.
7. It is important for us to develop new technologies that will allow us to more efficiently use natural resources.
8. The government must lead the way in conserving and valuing the environment by setting stricter anti-pollution laws.
9. Parents must model positive conservation behaviors for their children.
10. First, we are ethically responsible to other human individuals and society, and then to the larger community, the biosphere and the land.
11. Our obligations to preserve the land isn't just a responsibility to other people but to the whole environment.
12. As stewards of the environment, we must take care of all living things.
13. Justice is not only for human beings, we need to be as fair to all life as we are toward people.
14. Soil productivity is best maintained by utilizing known agronomic, mechanical, and chemical processes.
15. A person must develop a sense of place in order to feel connected with nature.
16. Personal conservation behavior develops in childhood and is influenced by social values.
17. A fuel tax would be an unfair way to reduce fuel consumption because some people are dependent on a certain amount of fuel due to their job or personal needs.
18. Conservation responsibilities should be shared and practiced by individuals, businesses and industries, special interest groups and all levels of government.

19. As populations increase, competition for natural resources increases, resulting in a need for resource-use priorities.

20. Access to clean air and water is a right afforded to human beings.

21. The creator gave us dominion over all living creatures.

22. The creator intended that nature be used by humans, not worshiped by them.

23. All nature is inherently awe-inspiring and beautiful. Humans create ugliness.

24. Being out in nature can revitalize your spirit.

25. People must uphold the rights of all living things.

26. Communication and education are very important for dealing with environmental problems.

27. Capitalism may be the best system available, but a fundamental problem with it is that it doesn't recognize the value of things that can't be bought or sold, such as the environment.

28. The value of the environmental cannot always be easily defined in economic terms.

29. Most living organisms are seen as commodities by the human population, in general.

30. Individuals have a moral responsibility, as God's stewards, for their environmental decisions.

31. When I am outside, in nature, I feel closer to the creator.

32. It is not necessary to reduce our standard of living in order to protect the environment.

33. If people would reduce their consumption rate, we wouldn't need new technologies to prevent environmental destruction.

34. The average person can make a decision on what to do about environmental damage even if they don't understand all the science.

35. The management of natural resources to meet the needs of successive generations demands long-range planning.

36. Nature has complex interdependencies. Any human meddling will cause a chain reaction with unanticipated effects.

37. The positive benefits of economic growth far outweigh any habitat loss.

38. I don't believe in the preservation of species in the same way some environmentalists do. In nature, evolution includes extinction.

39. Current and future generations must be educated about environmental problems and how to go about solving them.

40. By the time climate changes start occurring, it's going to be too late to do anything, the change will probably be irreversible.

41. Natural resource depletion has been blown out of proportion.

42. Humans are influenced by many of the same hereditary and environmental factors that effect other organisms and their populations.

43. We have a responsibility to use resources in the most efficient way possible without mindlessly depleting them.

44. The earth as a whole must be preserved even if the human species does not survive.

45. There may be thousands of medicinal and other useful plants, unknown to science, that might be lost in the process of harvesting natural resources for human consumption.

46. Energy conservation means doing without some things that give us comfort and enjoyment.

47. Humans can't live without creating waste. We have to learn how to reduce the amount we produce and how to dispose of what remains in an environmentally responsible way.

48. In order to survive, I need a special place outdoors where I can go to be alone and commune with nature.

49. Plants and animals have intrinsic, aesthetic, and spiritual value, even if they are not of any use to humans.

50. All living things are equally interdependent with each other and their environment.

51. Wildlife is a public resource.

52. Children who spend a great deal of time outdoors have a deeper connection with and love for nature.

53. Because God created the natural world it is wrong to abuse it.

54. It is important to conserve resources on a daily basis.

COVER LETTER

Greetings,

Thank you for agreeing to complete the enclosed Q sort. Your participation in this phase of my research on environmental educators' perceptions of environmental ethics is highly valued.

Please complete the Q sort, the Demographic Data sheet, and the Exit Interview and mail them back in the enclosed stamped, self-addressed envelope. Your prompt response will be appreciated.

Any information that you provide will remain anonymous. If at any time you decide that you do not want to participate, please indicate so on the top of the Demographic Data sheet and return all materials in the envelope provided. There will be no repercussions.

Once again, thank you for your time and cooperation.

Sincerely,

Suzanne Spradling

Q Sort Instructions

To use the Q sort statement cards and envelopes, you will need a flat area on which to work. First spread out the envelopes across the flat area with the envelope marked +5 on the far left and with the envelope marked –5 on the far right. The other envelopes will be spread in the middle. When you are finished, your envelopes will be placed as the picture below:

Flat area

+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
Most agree										Least agree

On each card is a statement. As you follow the instructions, you will be sorting the cards in terms of how much you agree or disagree with the statements.

DO NOT READ ALL OF THE INSTRUCTIONS NOW. PLEASE FOLLOW THEM ONE STEP AT A TIME.

Step 1. Read quickly through all of the cards to get a feeling for what they say. You do not have to keep the cards in order.

Step 2. Sort the cards into three (3) nearly equal piles so that:
a) those cards on your left are the cards with which you MOST AGREE,
b) those cards on your right are the cards with which you LEAST AGREE
c) those cards in the middle are the cards which you do not feel so strongly about
Dividing the cards this way means only that you like some cards more than you do others.

Step 3. Spread the cards in the left-hand pile so that you can read them easily. Choose the two (2) with which you most agree and place them on the +5 envelope.

Step 4. Spread the cards in the far right-hand pile so that you can read them easily. Choose the two (2) with which you least agree and place them on the –5 envelope.

Step 5. Go to the left-hand pile and choose the next three(3) cards with which you most agree. Place them on the +4 envelope.

Step 6. Go to the right-hand pile and choose the next three (3) cards with which you least agree. Place them on the –4 envelope.

NOTE: IF AT ANY TIME YOU CHANGE YOUR MIND ABOUT A CARD YOU HAVE PLACED ON A PILE, FEEL FREE TO CHANGE IT TO ANOTHER PILE.

Step 7. Go to the left-hand pile and choose the next five (5) cards you agree with and place them on the +3 envelope.

Step 8. Go to the right-hand pile and choose the next five (5) cards you disagree with and place them on the –3 envelope.

Step 9. Go to the left-hand pile and choose the next six (6) cards you agree with and place them on the +2 envelope.

Step 10. Go to the right-hand pile and choose the next six (6) cards you disagree with and place them on the –2 envelope.

Step 11. Go to the left-hand pile and choose the next seven (7) cards you agree with and place them on the +1 envelope.

Step 12. Go to the right-hand pile and choose the next seven (7) cards you disagree with and place them on the –1 envelope.

Step 13. You should now have eight (8) cards left over. Place these on the envelope marked 0.

Step 14. Read back over each pile, starting on the left-hand side, to make sure that you have placed the cards where you really wanted them. If you change any of the cards around, please make sure that the number of cards, in each pile, matches the number designated for each envelope when you are finished.

Step 15. Please place the cards in their envelopes; for example, the two (2) cards you MOST AGREE with are in the envelope marked +5. Please fold the flaps in to hold the cards in place.

Step 16. Now please complete the Demographic Data sheet and respond to the Exit Interview questions.

Step 17. Please place the envelopes with their cards inside, the **completed** Demographic Data sheet, and the Exit Interview into the stamped, self-addressed envelope and mail it immediately.

THANK YOU FOR YOUR COOPERATION!

Demographic Data

Please check the appropriate response.

A. Gender ___ female ___ male

B. Age ___ 18-26 ___ 27-35

___ 36-44 ___ 45-53

___ 54-62 ___ 63 +

C. Education ___ high school

___ bachelor's degree

___ master's degree

___ doctorate degree

___ other (describe please)

Major area of study _____

D. Current residence location

___ rural ___urban

___ suburban

E. Do you own or rent your home or Apartment?

___own home ___own apartment
___rent home ___rent apartment

F. Number of vehicles (cars, pick-ups, etc) owned or leased by members of your household.

___ # of vehicles

G. Childhood residential setting

___rural ___ urban ___suburban

H. Religious affiliation, list denomination

_____

Are you active now? ___yes ___no

I. Occupation _____

J. List your main sources of news, locally and nationally.

_____
_____
_____
_____
_____
_____

K. How often do you watch a public broadcasting system(PBS)?

___often ___never

___occasionally

L. How often do you listen to a National Public Radio (NPR)?

___often ___never
___occasionally

M. How many hours of television did you watch in the last week?

___0-4hrs ___5-8 ___9-12
___13-16 ___17-20 __20+

N. In which or the following are you trained? Check all that apply?

___ WET ___WILD ___ PLT

___LEP ___ Leave No Trace

O. Estimate the number of hours spent spent pleasure reading.

_____

EXIT INTERVIEW

Please feel free to write on the backside of this paper.

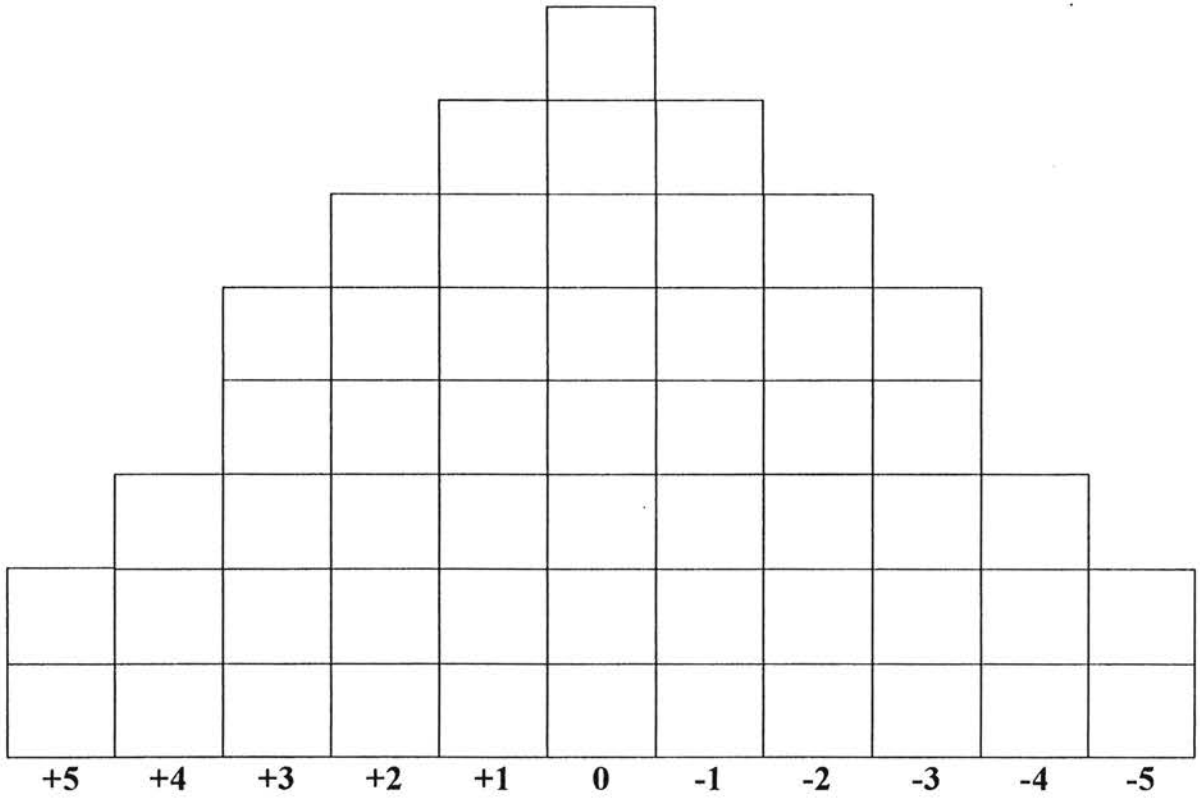
Describe any difficulties, if any, that you had in completing the Q sort.

What questions do you have about any of the statements?

Describe what you believe are the critical elements or components of environmental ethics. Why did you choose those elements as being the most critical?

What other comments do you have concerning the Q sort process or the statements themselves?

Q Sort Form Board
Critical Components of Environmental Ethics



APPENDIX B

INSTITUTIONAL REVIEW BOARD

APPROVAL FORMS

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 07-31-98 **IRB #: ED-99-006**

Proposal Title: INVESTIGATION OF THE CRITICAL COMPONENTS OF A LAND ETHIC: A PILOT STUDY FOR THE APPLICATION OF Q METHODOLOGY

Principal Investigator(s): Lowell M. Caneday, Suzanne Spradling

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature: Thomas C. Collins

Date: July 31, 1998

Interim Chair of Institutional Review Board
and Vice President for Research
cc: Suzanne Spradling

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

DATE: 02-09-99 **IRB #: ED-99-081**

Proposal Title: INVESTIGATION OF THE CRITICAL COMPONENTS OF A LAND ETHIC: AN APPLICATION OF Q METHODOLOGY PHASE II #ED-99-006

Principal Investigator(s): Lowell M. Caneday, Suzanne Spradling

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Signature: Carol @ 1/8

Date: February 9, 1999

Carol Olson, Director of University Research Compliance
cc: Suzanne Spradling

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX C

TABLES AND FIGURES

TABLE C-III

Rank Statement Totals with Each Factor

No.	Statement	No.	Factors 1		2		3	
1	It may be necessary to drain wetlands if that area is	1	-1.55	49	-.33	31	-1.94	53
2	Nature's genetic diversity is important as a source fo	2	-.39	36	-.62	36	.54	21
3	Moral, ethical considerations should only apply to fel	3	-2.15	54	-1.59	51	-1.82	51
4	Nature's beauty inspires people to care for and preser	4	.24	25	.46	22	-.63	40
5	The need of humans to turn inward for self-renewal can	5	.05	28	-.87	42	-.18	30
6	A healthy environment is necessary for a healthy econo	6	-.31	34	.97	12	1.34	3
7	It is important for us to develop new technologies tha	7	-.33	35	.86	15	-.19	31
8	The government must lead the way in conserving and val	8	-.29	33	-1.03	46	-.53	37
9	Parents must model positive conservation behaviors for	9	.55	19	1.47	5	.81	18
10	First, we are ethically responsible to other human ind	10	-.79	43	-.38	32	-1.15	47
11	Our obligations to preserve the land isn't just a resp	11	1.74	2	.78	16	1.17	7
12	As stewards of the environment, we must take care of a	12	.41	21	.77	17	.39	23
13	Justice is not only for human beings, we need to be as	13	1.24	6	-1.03	47	-.39	35
14	Soil productivity is best maintained by utilizing know	14	-.66	40	-.57	35	-1.05	45
15	A person must develop a sense of place in order to fee	15	.49	20	.57	20	.93	12
16	Personal conservation behavior develops in childhood a	16	.32	23	.89	14	.14	25
17	A fuel tax would be an unfair way to reduce fuel consu	17	-.85	44	-.43	33	-.58	39
18	Conservation responsibilities should be shared and pra	18	1.50	4	1.64	1	.85	17
19	As populations increase, competition for natural resou	19	.71	16	.69	18	.01	27
20	Access to clean air and water is a right afforded to h	20	-.17	30	.19	26	-.71	41
21	The creator gave us dominion over all living things.	21	-1.99	53	1.16	7	-1.30	49
22	The creator intended that nature be used by humans, no	22	-1.39	48	1.28	6	-1.08	46
23	All nature is inherently awe-inspiring and beautiful.	23	-.69	41	-1.06	48	-1.56	50
24	Being out in nature can revitalize your spirit.	24	.78	12	.90	13	.93	13
25	People must uphold the rights of all living things.	25	1.16	7	-.55	34	-.37	34
26	communication and education are very important for dea	26	1.69	3	1.48	4	.89	14
27	Capitalism may be the best system available, but a fun	27	.76	13	-.66	39	-.15	29
28	The value of the environment cannot always be easily d	28	1.03	9	.55	21	1.24	4
29	Most living organisms are seen as commodities by the h	29	-.18	32	-.63	37	-.05	28
30	Individuals have a moral responsibility, as God's stew	30	-.18	31	1.48	3	.01	26
31	When I am outside, in nature, I feel closer to the crea	31	.22	26	1.12	8	.88	15

TABLE C-III - continued

Rank Statement Totals with Each Factor

			Factors					
32	It is not necessary to reduce our standard of living i	32	-1.62	50	-.99	45	-.42	36
33	If people would reduce their consumption rate, we woul	33	-.77	42	-1.33	49	-.79	42
34	The average person can make a decision on what to do a	34	-.89	45	.32	25	.99	9
35	The management of natural resources to meet the needs	35	.64	17	1.10	9	.97	10
36	Nature has complex interdependencies. Any human meddl	36	-.42	37	-.92	44	-.24	32
37	The positive benefits of economic growth far outweigh	37	-1.88	52	-1.76	53	-2.09	54
38	I don't believe in the preservation of species in the	38	-.95	46	-.75	40	-.54	38
39	Current and future generations must be educated about	39	1.78	1	1.50	2	.76	19
40	By the time climate changes start occurring, it's goin	40	-.57	39	-.82	41	-.98	44
41	Natural resource depletion has been blown out of propo	41	-1.71	51	-1.72	52	-1.83	52
42	Humans are influenced by many of the same hereditary a	42	.24	24	-.04	27	.40	22
43	We have a responsibility to use resources in the most	43	1.06	8	.60	19	.85	16
44	The earth as a whole must be preserved even if the hum	44	.18	27	-2.05	54	-1.24	48
45	There may be thousands of medicinal and other useful p	45	.58	18	-.65	38	.74	20
46	Energy conservation means doing without some things th	46	.74	14	-1.39	50	-.83	43
47	Humans can't live without creating waste. We have to	47	.80	11	.42	23	.36	24
48	In order to survive, I need a special place outdoors w	48	-.03	29	-.89	43	1.84	1
49	Plants and animals have intrinsic, aesthetic, and spir	49	1.33	5	-.11	28	1.38	2
50	All living things are equally interdependent with each	50	.73	15	-.30	30	1.24	5
51	Wildlife is a public resource.	51	-.98	47	-.21	29	1.23	6
52	Children who spend a great deal of time outdoors have	52	.37	22	1.10	10	1.05	8
53	Because God created the natural world it is wrong to a	53	-.50	38	.38	24	-.27	33
54	It is important to conserve resources on a daily basis	54	.88	10	1.01	11	.96	11

TABLE C-IV

Factor Q-Sort Values for Statements sorted by Consensus vs. Disagreement (Variance across normalized Factor Scores)

No.	Statement	No.	Factor Arrays 1	2	3
54	It is important to conserve resources on a daily basis.	54	3	2	2
41	Natural resource depletion has been blown out of proportion.	41	-4	-4	-4
24	Being out in nature can revitalize your spirit.	24	2	2	2
37	The positive benefits of economic growth far outweigh any ha	37	-4	-5	-5
40	By the time climate changes start occurring, it's going to b	40	-2	-2	-2
38	I don't believe in the preservation of species in the same w	38	-3	-2	-1
17	A fuel tax would be an unfair way to reduce fuel consumption	17	-2	-1	-2
12	As stewards of the environment, we must take care of all liv	12	1	1	1
42	Humans are influenced by many of the same hereditary and env	42	0	0	1
43	We have a responsibility to use resources in the most effici	43	3	1	2
15	A person must develop a sense of place in order to feel conn	15	1	1	2
35	The management of natural resources to meet the needs of suc	35	1	3	3
47	Humans can't live without creating waste. We have to learn	47	2	1	0
14	Soil productivity is best maintained by utilizing known agro	14	-2	-1	-3
3	Moral, ethical considerations should only apply to fellow	3	-5	-4	-4
29	Most living organisms are seen as commodities by the human p	29	-1	-1	0
33	If people would reduce their consumption rate, we wouldn't n	33	-2	-3	-2
28	The value of the environment cannot always be easily defined	28	3	1	4
36	Nature has complex interdependencies. Any human meddling wi	36	-1	-2	-1
8	The government must lead the way in conserving and valuing t	8	-1	-3	-1
10	First, we are ethically responsible to other human individua	10	-2	-1	-3
16	Personal conservation behavior develops in childhood and is	16	1	2	0
19	As populations increase, competition for natural resources i	19	2	1	0
52	Children who spend a great deal of time outdoors have a deep	52	1	3	3
26	communication and education are very important for dealing w	26	4	4	2
18	Conservation responsibilities should be shared and practiced	18	4	5	1
23	All nature is inherently awe-inspiring and beautiful. Humans	23	-2	-3	-4
20	Access to clean air and water is a right afforded to human b	20	0	0	-2

TABLE C-IV continued

Factor Q-Sort Values for Statements sorted by Consensus vs. Disagreement (Variance across normalized Factor Scores)

No.	Statement	No.	Factor Arrays 1	2	3
53	Because God created the natural world it is wrong to abuse i	53	-1	0	-1
31	When I am outside, in nature,I feel closer to the creator.	31	0	3	2
9	Parents must model positive conservation behaviors for their	9	1	4	1
5	The need of humans to turn inward for self-renewal can be st	5	0	-2	0
11	Our obligations to preserve the land isn't just a responsibi	11	5	2	3
39	Current and future generations must be educated about enviro	39	5	5	1
4	Nature's beauty imspires people to care for and preserve it.	4	0	1	-2
32	It is not necessary to reduce our standard of living in orde	32	-4	-3	-1
2	Nature's genetic diversity is important as a source for our	2	-1	-1	1
7	It is improtant for us to develop new technologies that will	7	-1	2	0
27	Capitalism may be the best system available, but a fundament	27	2	-2	0
45	There may be thousands of medicinal and other useful plants,	45	1	-1	1
50	All living things are equally interdependent with each other	50	2	0	4
1	It may be necessary to drain wetlands if that area is needed	1	-3	0	-5
49	Plants and animals have intrinsic, aesthetic, and spiritual	49	4	0	5
6	A healthy environment is necessary for a healthy economy.	6	-1	2	4
30	Individuals have a moral responsibility, as God's stewards,	30	0	4	0
25	People must uphold the rights of all living things.	25	3	-1	-1
34	The average person can make a decision on what to do about e	34	-3	0	3
46	Energy conservation means doing without some things that giv	46	2	-4	-2
51	Wildlife is a public resource.	51	-3	0	3
44	The earth as a whole must be preserved even if the human spe	44	0	-5	-3
13	Justice is not only for human beings, we need to be as fair	13	3	-3	-1
48	In order to survive, I need a special place outdoors where I	48	0	-2	5
22	The creator intended that nature be used by humans, not wors	22	-3	3	-3
21	The creator gave us dominion over all living things.	21	-5	3	-3

TABLE C-V

Distinguishing Statements for Factor 1

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

			Factors					
			1		2		3	
No.	Statement	No.	RNK	SCORE	RNK	SCORE	RNK	SCORE
11	Our obligations to preserve the land isn't just a responsibi	11	5	1.74	2	.78	3	1.17
13	Justice is not only for human beings, we need to be as fair	13	3	1.24*	-3	-1.03	-1	-.39
25	People must uphold the rights of all living things.	25	3	1.16*	-1	-.55	-1	-.37
27	Capitalism may be the best system available, but a fundament	27	2	.76*	-2	-.66	0	-.15
46	Energy conservation means doing without some things that giv	46	2	.74*	-4	-1.39	-2	-.83
50	All living things are equally interdependent with each other	50	2	.73	0	-.30	4	1.24
52	Children who spend a great deal of time outdoors have a deep	52	1	.37*	3	1.10	3	1.05
31	When I am outside, in nature,I feel closer to the creator.	31	0	.22*	3	1.12	2	.88
44	The earth as a whole must be preserved even if the human spe	44	0	.18*	-5	-2.05	-3	-1.24
48	In order to survive, I need a special place outdoors where I	48	0	-.03*	-2	-.89	5	1.84
6	A healthy environment is necessary for a healthy economy.	6	-1	-.31*	2	.97	4	1.34
34	The average person can make a decision on what to do about e	34	-3	-.89*	0	.32	3	.99
51	Wildlife is a public resource.	51	-3	-.98*	0	-.21	3	1.23
32	It is not necessary to reduce our standard of living in orde	32	-4	-1.62	-3	-.99	-1	-.42
21	The creator gave us dominion over all living things.	21	-5	-1.99*	3	1.16	-3	-1.30

TABLE C-VI

Distinguishing Statements for Factor 2

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

			Factors					
			1		2		3	
No.	Statement	No.	RNK	SCORE	RNK	SCORE	RNK	SCORE
30	Individuals have a moral responsibility, as God's stewards,	30	0	-.18	4	1.48*	0	.01
9	Parents must model positive conservation behaviors for their	9	1	.55	4	1.47	1	.81
22	The creator intended that nature be used by humans, not wors	22	-3	-1.39	3	1.28*	-3	-1.08
21	The creator gave us dominion over all living things.	21	-5	-1.99	3	1.16*	-3	-1.30
16	Personal conservation behavior develops in childhood and is	16	1	.32	2	.89	0	.14
7	It is improtant for us to develop new technologies that will	7	-1	-.33	2	.86*	0	-.19
53	Because God created the natural world it is wrong to abuse I	53	-1	-.50	0	.38	-1	-.27
34	The average person can make a decision on what to do about e	34	-3	-.89	0	.32	3	.99
49	Plants and animals have intrinsic, aesthetic, and spiritual	49	4	1.33	0	-.11*	5	1.38
51	Wildlife is a public resource.	51	-3	-.98	0	-.21*	3	1.23
50	All living things are equally interdependent with each other	50	2	.73	0	-.30*	4	1.24
1	It may be necessary to drain wetlands if that area is needed	1	-3	-1.55	0	-.33*	-5	-1.94
45	There may be thousands of medicinal and other useful plants,	45	1	.58	-1	-.65*	1	.74
5	The need of humans to turn inward for self-renewal can be st	5	0	.05	-2	-.87	0	-.18
48	In order to survive, I need a special place outdoors where I	48	0	-.03	-2	-.89*	5	1.84
32	It is not necessary to reduce our standard of living in orde	32	-4	-1.62	-3	-.99	-1	-.42
13	Justice is not only for human beings, we need to be as fair	13	3	1.24	-3	-1.03	-1	-.39
44	The earth as a whole must be preserved even if the human spe	44	0	.18	-5	-2.05*	-3	-1.24

TABLE C-VII

Distinguishing Statements for Factor 3

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

			Factors					
			1		2		3	
No.	Statement	No.	RNK	SCORE	RNK	SCORE	RNK	SCORE
48	In order to survive, I need a special place outdoors where I	48	0	-.03	-2	-.89	5	1.84*
50	All living things are equally interdependent with each other	50	2	.73	0	-.30	4	1.24
51	Wildlife is a public resource.	51	-3	-.98	0	-.21	3	1.23*
34	The average person can make a decision on what to do about e	34	-3	-.89	0	.32	3	.99
26	communication and education are very important for dealing w	26	4	1.69	4	1.48	2	.89
18	Conservation responsibilities should be shared and practiced	18	4	1.50	5	1.64	1	.85*
39	Current and future generations must be educated about enviro	39	5	1.78	5	1.50	1	.76*
2	Nature's genetic diversity is important as a source for our	2	-1	-.39	-1	-.62	1	.54*
19	As populations increase, competition for natural resources i	19	2	.71	1	.69	0	.01
13	Justice is not only for human beings, we need to be as fair	13	3	1.24	-3	-1.03	-1	-.39
32	It is not necessary to reduce our standard of living in orde	32	-4	-1.62	-3	-.99	-1	-.42
4	Nature's beauty imspires people to care for and preserve it.	4	0	.24	1	.46	-2	-.63*
20	Access to clean air and water is a right afforded to human b	20	0	-.17	0	.19	-2	-.71
44	The earth as a whole must be preserved even if the human spe	44	0	.18	-5	-2.05	-3	-1.24*
21	The creator gave us dominion over all living things.	21	-5	-1.99	3	1.16	-3	-1.30*

TABLE C-VIII

Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at P>.01, and Those Flagged With an * are also Non-Significant at P>.05.

			Factors					
			1		2		3	
No.	Statement	No.	RNK	SCORE	RNK	SCORE	RNK	SCORE
3	Moral, ethical considerations should only apply to fellow	3	-5	-2.15	-4	-1.59	-4	-1.82
12*	As stewards of the environment, we must take care of all liv	12	1	.41	1	.77	1	.39
14*	Soil productivity is best maintained by utilizing known agro	14	-2	-.66	-1	-.57	-3	-1.05
15*	A person must develop a sense of place in order to feel conn	15	1	.49	1	.57	2	.93
17*	A fuel tax would be an unfair way to reduce fuel consumption	17	-2	-.85	-1	-.43	-2	-.58
24*	Being out in nature can revitalize your spirit.	24	2	.78	2	.90	2	.93
28	The value of the environment cannot always be easily defined	28	3	1.03	1	.55	4	1.24
29	Most living organisms are seen as commodities by the human p	29	-1	-.18	-1	-.63	0	-.05
33	If people would reduce their consumption rate, we wouldn't n	33	-2	-.77	-3	-1.33	-2	-.79
35*	The management of natural resources to meet the needs of suc	35	1	.64	3	1.10	3	.97
36	Nature has complex interdependencies. Any human meddling wi	36	-1	-.42	-2	-.92	-1	-.24
37*	The positive benefits of economic growth far outweigh any ha	37	-4	-1.88	-5	-1.76	-5	-2.09
38*	I don't believe in the preservation of species in the same w	38	-3	-.95	-2	-.75	-1	-.54
40*	By the time climate changes start occurring, it's going to b	40	-2	-.57	-2	-.82	-2	-.98
41*	Natural resource depletion has been blown out of proportion.	41	-4	-1.71	-4	-1.72	-4	-1.83
42*	Humans are influenced by many of the same hereditary and env	42	0	.24	0	-.04	1	.40
43*	We have a responsibility to use resources in the most effici	43	3	1.06	1	.60	2	.85
47*	Humans can't live without creating waste. We have to learn	47	2	.80	1	.42	0	.36
54*	It is important to conserve resources on a daily basis.	54	3	.88	2	1.01	2	.96

TABLE C-XII

Factor Characteristics

	Factors		
	1	2	3
No. of Defining Variables	11	5	7
Average Rel. Coef.	.800	.800	.800
Composite Reliability	.978	.952	.966
S.E. of Factor Scores	.149	.218	.186

Standard Errors for Differences in Normalized Factor Scores

(Diagonal Entries Are S.E. Within Factors)

Factors	1	2	3
1	.211	.264	.238
2	.264	.309	.287
3	.238	.287	.263

Correlations Between Factors

	1	2	3
1	1.0000	.4292	.6628
2	.4292	1.0000	.5550
3	.6628	.5550	1.0000

FIGURE C-2

Q Sort Form Board
Critical Components of Environmental Ethics
Factor 1, Nature's Advocates

+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
					+42					
				+35	4	29				
			+47	45	*31	8	+40			
		*13	+24	9	*44	*6	+14	*34		
		*25	*27	+15	5	7	23	+38		
	26	+43	*46	+12	*48	2	33	*51	32	
39	18	28	50	*52	20	36	10	22	+41	*21
11	49	+54	19	16	30	53	+17	1	+37	3

(* = distinguishing statements, + = consensus statements)

FIGURE C-3

Q Sort Form Board
Critical Components of Environmental Ethics
Factor 2, Nature's Stewards

					53					
				+12	34	10				
			+54	19	20	+17	27			
		*22	6	+43	+42	25	+38	32		
		*21	+24	+15	*49	+14	+40	8		
	*30	31	16	28	*51	2	5	13	46	
18	26	+35	*7	4	*50	29	*48	23	3	+37
39	9	5	11	+47	*1	*45	36	33	+41	*44
+5	**+4**	**+3**	**+2**	**+1**	**0**	**-1**	**-2**	**-3**	**-4**	**-5**

(* = distinguishing statements, + = consensus statements)

FIGURE C-4

Q Sort Form Board
Critical Components of Environmental Ethics
Factor 3, Nature's Romantics

+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
					+47					
				*18	16	36				
			+54	9	30	53	+17			
		*51	+15	*39	19	25	*4	+14		
		11	+24	45	29	13	20	22		
	6	52	26	*2	27	32	33	10	23	
*48	28	34	31	+42	5	8	46	*44	3	1
49	50	+35	+43	+12	7	+38	+40	*21	+41	+37

(* = distinguishing statements, + = consensus statements)

APPENDIX D

INTERVIEW TRANSCRIPTS

INTERVIEW #1

Interviewer: . . I'm just going to start off, what do you think are some of the key components of environmental education?

Respondent: Key components of environmental education. That's a tough one to start with. Well, let's see. Certainly, the ability or the perception of ability which Leopold stressed so often in his class work or in his fieldwork is basic, I think, to everything. You've got to somehow get the kids that you're working with or even the adults, give them the idea that perception is a very important part of the whole thing and that, I don't know, that's, that's very difficult to teach. I don't know just how you go about that but anyway, that seems to me that's kind of the, what you're really striving that's the goal.

Interviewer: Yeah.

Respondent: And then, of course, you, at least you have to have some elementary idea of what you're dealing with. you have to have a bit of or at least some background in what you're attempting to work out either in a field trip or in a classroom. Incidentally, are you talking about kids, young kids, or . . .

Interviewer: Really, I think, in general. If we just talk about people and what are some, what are key concepts that should be included in let's say, curriculum or environmental education that are sort of the underlying basis for the whole concept maybe, of environmental education. What are we trying to . . .

Respondent: Well, somehow or other, you've got to have enough background so that people can at least understand what you're talking about and I think that's pretty difficult if you're making, or working with a mixture of people. Some that are pretty well clued in on things whereas others are just starting from scratch and it seems to me that's a very difficult part of the educational process to be able to work with the varied groups you're working with all the way from young kids to adults. Quite often the young kids have enough background so that they're better off than some of their, some of the adults are. But I think that's, that's in large part, is the fault of the school teaching system. I believe, I think that there was a period back in the 1970's when, a conservation education, they called it then, was a pretty important element of the whole thing and they tried to get that into the schools. And they tried to provide some training for the teachers and it seems to me that that aspect has slipped a lot in recent years. That you go to an average school, and I'm not very familiar with very many of them, but those that I do know something about, it's very difficult to find teachers even, who have had the background that enables them to pass on information to those they're trying to teach.

Interviewer: They need to be properly trained.

Respondent: Yes.

Interviewer: We're not seeing that.

Respondent: Right.

Respondent: Well, maybe as we're talking we'll get into that. I think those are a couple of the things that occur to me.

Interviewer: Those components that you picked on perception, knowing what you're dealing with, the varied levels of the participants that you're, whether it's elementary or so on, why did you pick those components? Why are they, why do you think they're the most important or key? You kept mentioning perception.

Respondent: Well, if you don't have, first of all you've got to have something that stimulates your interest and I guess that has to be the, if a person is not interested and doesn't have an open mind, then it's pretty difficult. And I don't know how you deal with that kind of a problem. But, you have to assume that there's interest there to start with and then build on that interest to the, considering the level that you have to deal with, and then that's, it's kind of a stepping stone arrangement, I guess, from starting out with pretty elementary stuff and then getting into the more difficult things.

Interviewer: Uh-huh, uh-huh. So that seems to be the basis, in other words, looking for that . . .

Respondent: I would think so.

Interviewer: Okay. [--] describe just briefly, now I'm not asking for a treatise here, but just very briefly, what would you, how would you describe an ideal environmental education curriculum?

Respondent: An ideal environmental education program?

Interviewer: Uh-huh.

Respondent: Well, first of all, I think it goes back to the leaders, the teachers themselves. And the ideal program would certainly involve a very high level, I mean highly trained teachers. And then I think from there on you have to probably relate it to your audience starting out with kindergarten, or way back to the very beginning and then bring on the kids at the level that they can deal with these problems starting out with pretty simple things. Getting acquainted with the common things around home and then as they get older, branching out into little more difficult things and not to burdensome with global problems to start with, just ease into that kind of gently and even our, many of our adults can't seem to be able to cope with the global part of it.

Interviewer: Yeah.

Respondent: And that, of course, indicates some weaknesses in our educational program. They ought to be able to have a concept of what they're, what overall means, but I guess that's, that maybe where we lose something.

Interviewer: Yeah. Do you think that the development of a land ethic is a critical component of environmental education?

Respondent: Absolutely. I think that you have to start with a, with an ethical idea of where you're going, where you're headed. And, of course, I think Leopold's land ethic is basic to conservation education. I think that you've got, that has to be a starting point. People have to realize that here is something that's beyond one group's ideas of what ought to be done. Here's something that's basic to their whole existence. And I think the starting point is an ethic.

Interviewer: Okay. Why, do you think, and your reason being, I mean, why is that so critical, that it's the starting point, that this development of the land ethic?

Respondent: Well if you don't have an idea of what's right and wrong to start with, it gets pretty difficult to decide what direction you're going in. It seems to me that, first of all, you've got to start with your idea, your concept of what is right and what is wrong. And particularly, is it, or as it relates to land problems. Because when we're talking about the land, we're talking about water, atmosphere and the whole bit, not just the wildlife and all the things that make a system work.

Interviewer: Say that again, I'm sorry. I got all but the last little part there on the idea of the right and wrong being so critical. You've got to have that first before you can then start sorting out . . .

Respondent: And when we say land ethic, we're talking about a much broader than just land. We're talking about land, water, atmosphere and all the critters that go with the system to make it operate properly.

Interviewer: Okay. In your own words now, I think you really just already did this, but in your words, define land ethic.

Respondent: Well land ethic is, I guess in the simplest form, is just a love of the land. And an understanding, enough of an understanding to go with it so that you know what you're talking about. There are various ways to love the land, from real estate development and on down, I guess.

Interviewer: Yeah, I guess it's hard to define what you mean by love. A real estate developer can say, oh, I just love this piece of land. But they're getting, it's from purely an economic standpoint.

Respondent: That's right.

Interviewer: It doesn't seem to be spiritual love of the land.

Respondent: That's right. That's a very important point, I think.

Interviewer: Is there anything else that you would add to that concept of the land ethic, because you mentioned, as we talked along, you mentioned the love and understanding that then goes along with knowledge, knowledge of the land and ecosystems I guess.

Respondent: I think you've got to have that concept to start with but then the other thing is how do you work it into the system? How do you work it into the economic system? How do you get our politicians and people that our are leaders, how do you get them to understand this and then pass this along in terms of wise land use? That's where it seems to fall apart most of the time.

Interviewer: Uh-huh, uh-huh. Now they call, there are those that say, those that fall into the category of wide use is not a positive term.

Respondent: No it isn't. That's a very badly misused name.

Interviewer: Cleverly on their part, I don't know. Do you believe that piece of literature can facilitate the development of a land ethic? And why or why not?

Respondent: Well I think that the literature that we have on the table here at this meeting indicates that a lot of the good literature that's coming out is going to be very helpful. It seems to me that at least a large group of people are starting to do some serious thinking now and I see a lot of excellent literature coming out now.

Interviewer: How do you think the literature does that? I mean, how do you think it facilitates that development of the land ethic? I mean this is a very esoteric type of a question, but I mean, how do you think it does that?

Respondent: Well, of course, it stimulates the person who puts it together in the first place and then in doing that, he or she tries to pass the ideas along and those that are good ideas catch fire and go on from there, it seems to me. And meetings like we're at right now, this seems to me to be excellent focus points for this sort of dissemination of the land ethic and the education that goes with it.

Interviewer: So, and I don't want to put words in your mouth. Is it, does it act as a stimulant or a catalyst for people discussing and then sorting through their own ideas if they, once they've read something and then they discuss it with others who have read it as well as may be a [_____], if they have a chance to do that.

Respondent: Well I can't say how it affects other people but I know it does me. It stimulates me to go to meetings like this and every time you go you learn a lot that you, that starts your thinking processes out fresh again and it's, I'm sure, I assume that this happens to most everybody and otherwise we wouldn't be coming to the meeting.

Interviewer: Yeah. That makes, I mean, that makes sense to me. I'm always interested, how the mind works fascinates me as well. Okay. How would you describe, and this is going to almost sound kind of silly asking you this question, but I'm asking everybody. How would you describe your level of familiarity with the *Sand County Almanac*? How, when was the last time you read it and how often have you or do you read it?

Respondent: Well, the last time I read it in part was this morning. I have it, I have a copy at the head of my bed and quite often I refer to it and it's, well it's just something that I think is very useful to have handy because it seems to cover so many situations that you run into in the environmental business.

Interviewer: Yeah, such as?

Respondent: Well, that's a more difficult question to say such as. Let me think about that a little bit.

Interviewer: Sure, sure. Okay. What do you think are maybe the components of the *Sand County Almanac* that make it so persuasive?

Respondent: Well, of course, it depends I guess, the component that you might be interested in. *Sand County Almanac* covers, if you're interested in wilderness for example, you'll find a chapter on that. Or if you're interests are more general, you'll find [_____] with prairies or something [_____] you'll find information on prairies. And, of course, the one chapter that's most useful to administrators at least, is the one on the land ethic because this applies to just about every situation you're working with nowadays. Whether you're working as I do to some degree working with city officials on environmental problems and real estate development and there's all sorts of quotes in *Sand County Almanac* that I use frequently because they apply so well in the situation. And, so it, I don't think any, I've never known of any or ever heard of any other book that is quoted as much as the *Sand County Almanac* is and

the, of course the land ethics chapter is the most familiar to most people, I think. And the one that we, to make an effort to disseminate as much possible.

Interviewer: Uh-huh. So are you, it sounds like you were referring to the fact that it can cover a wide range of situations and topics. that in itself makes it appealing.

Respondent: That's right. The thing that bothers me is that the people I associate with in city councils or at that level, a few of them actually have, a lot of them say they've read the *Sand County Almanac* but I don't see very many of them making much use of it. This is one of the things that bothers me and must indicate some sort of a flaw in our educational approach to it.

Interviewer: Uh-huh, yeah. It's, what do you believe was Aldo Leopold's intent when he wrote this?

Respondent: Well, I think first of all he was trying to clarify in his own mind his own beliefs about the situation and trying to develop an ethic and I think, in my talk today, I'm going to give a quotation that I think that illustrates what I'm meaning, that he himself was going through a learning process all during his career. And finally coming to a head with the land ethic, and so it was a growing process with him and he was sharing his ideas, as he did so frequently, with publications with others and books that [_____] would [_____] [_____] one way or the other.

Interviewer: Uh-huh. I'm just kind of repeating to make sure we have that on there about sharing his thoughts and yet going through his own learning and growing process and clarifying his own beliefs.

Respondent: That's right. Yeah, it was a developing thing all the time from beginning to end, with him and with everybody else.

Interviewer: Uh-huh, uh-huh. Why do you think that the Leopold Education Project is so effective and what would you say then its critical components are?

Respondent: Well, I think that its effectiveness must indicate a hunger in the part of people, anxiety, they hear enough about all the problems in the world in relation to the environment and they, but they're not probably knowledgeable about them as some people are, of course, but a lot of them are. And the, so I think that the LEP or land education, Leopold Education Project, is an effort to clarify some of the ideas and enable people to apply them on a daily basis. And that's what I think the, this program is doing a great job on those lines. That there's, it's reaching out little by little. It's badly underfunded and understaffed and all that sort of thing, but I think they're doing a wonderful job for the, with what they have to work with and it's got unlimited possibilities if it can be properly supported.

Interviewer: Uh-huh, uh-huh. Now, do you act as a facilitator from time to time?

Respondent: No, no, I don't. I haven't, when this got started I was maybe getting a little too old to run around the country much and I didn't want to get too involved in that aspect of it although I, I fill in different ways. I try to anyway.

Interviewer: Well I was going to say, even though you may not do a workshop per se, it sounds like in your work with city officials and others that you come in

contact with, it does sound like you are acting as a facilitator. That you have a real tie to this particular program itself.

Respondent: Well, I think that's right. That, at the city level I've been involved in the environmental [--] committees or was the [--] that I was working with and so I acted as adviser and, on matters that related to development in the city and ways to preserve as much of the biodiversity as possible.

Interviewer: Who all have you worked with? What city do you mainly . . .

Respondent: [_____] [_____] Lakes is the name of the city. Fairly young city, it's only about 40-some years old.

Interviewer: Where is it specifically located?

Respondent: It's right north of St. Paul. It's in the metro area of St. Paul, so it's in one of the rings that's developing very rapidly, you know. The urban sprawl has hit us in a big way and we're trying to resist it as much as possible. It's very difficult to do because the city itself is expanding so fast and they, the city officials, the metropolitan council and the whole metro area of the twin cities and they feel that each of the outlying areas should pick up their part of the slack. And make all the provisions for the increasing population in the city. Of course, they're doing everything in their power to attract people in. They're building new stadia for all the sports and all that sort of thing and all this promoting for big conventions and everything else they can think of to pull people in. And then they expect all the outlying areas to melt, you know, and take care of all the people they're pulling in. Course, with the expanding populations the way they are, people are going to go somewhere anyway and so it seems like each city is actually doing their best to get them to come there and when they get there they don't know what to do with them.

Interviewer: What do you find to be maybe most, in your dealings with the city government, the powers that be and so on, what is it they, what do you think they want from you? What are they trying to find out from you? Since you act as the advisory type person . . .

Respondent: That's right. Well one of the things they're doing now, they're in the process right this year of doing it, is taking a natural resources inventory. This is one of the things that I have pushed for. They started out, the city is going about it in a very professional way in lots of ways and that is, they started out with a, they spent about a year in which they brought as many of the citizens together as they could in different groups to discuss the basic problems. They had what they call a 20/20 vision project. And that took about a year. And then that ended up with a, I was on one of the committees, the environmental committee, there was a growth committee and parks and rec committee and that sort of thing. So, anyway, the, and then at the same time, they conducted a citywide survey of the public to see what their wishes are in terms of growth, in relation to growth and what their, what they valued most about the city and what they would like to see, most to be preserved which in our case was the rural atmosphere. So that went through this whole process and now it's being implemented to the extent possible and so this, this natural resources survey is part of the, now we're trying to see what we have there that is still

worth keeping or things that ought to be restored, this sort of thing. What areas should be developed but what shouldn't and, so that, that part of it will more or less come to a head this year and then the implementation part will go into affect and they'll try to set up ordinances and zoning regulations and so on and rules by which developers will operate in the city. And at the same time try to indicate certain greenways or special areas of one type or another that ought not to be developed where buildings are concerned.

Interviewer: Are they fairly receptive?

Respondent: Pretty much so. There's a lot of frustrations and disappointments that go along with it because everybody doesn't agree. That's what I thought earlier, it would be helpful if more people were more familiar with the land ethic. Yeah, and it's both encouraging and frustrating at the same time.

Interviewer: Yes. Yeah, if they had that knowledge basis as well, in addition to, then the land ethic so they have something to work with. They have that desire.

Respondent: That's right.

Interviewer: And then they also have the content to be able to speak up and speak with authority, I guess.

Respondent: Well, a lot, a lot of the people, they're, you know, there are a lot of professional people that are involved in it and their latent interest is there all right. It's just a matter of bringing in revenue your know.

Interviewer: Okay. So you think there is a latent . . .

Respondent: Well there is in a community like ours. There's lots and lots of talent sitting around there. I am, as I mentioned earlier, I don't see the schools doing as much as I'd like to see in training the kids that are coming up in the community. There's certainly individuals, in fact there's, that I, one of the things that our committee did very recently, environmental committee, they got the city to okay sending some, two individuals to these training sessions that LEP is putting on.

Interviewer: Oh yes?

Respondent: And they will find that [_____]. So I thought that was a kind of a step in the right direction.

Interviewer: Uh-huh, uh-huh. Well, that is good. What do you think, and I, you know, I, looked at Curt Meine's book and read *A Fierce Green Fire* and several others and the mentor and the professor, you know, and listened to your comments and others, how do you think that Leopold personally developed his land ethic?

Respondent: Well, of course, he, I guess first of all he grew up in a family that had a pretty darn good ethic to start with. And so, and all of his brothers and his sister, all reflected the same thing. That they had been brought up in a family that had an ethic of their own to start with. This is, it was a, they spent a lot of time in the outdoors, all of the kids were, the Leopold kids, were hunters and fisherman and the spent a lot of time in the outdoors, on picnics or field trips or hunting trips and things of that sort. And, in fact, Aldo's sister, Maria, was a good botanist in her own right and they, it seemed to, as a result of their upbringing, I imagine, they all had that background, which is very important.

Not that that's always possible, unfortunately, but, important, and so from that and just, he was, Aldo was a, kind of a loner as he grew up. He spent a lot of time on his own, off nature studying and hunting, things of that sort. And so it was just a natural [_____] in his part which his brother, Frederic, shared. And I often thought that Frederic would have been very much like him if he'd gone that same route. He had the same interest and talents and so on.

Interviewer: Uh-huh, uh-huh. Well, it's, you know, you can't ever actually be in somebody's mind, but having had the opportunity to really listen to him and work with him, you at least have a better idea than those of us who did not have that particular contact, to see what . . .

Respondent: Well he had a totally inquiring mind, you know. Everything was never cut and dried as far as he was concerned. He was always asking questions about it in his own mind if not outright. And you go on a field trip with him, which were the most educational parts that I had with him, was on the field trips, more so than in the classroom. And it was always sort of a game and perception, and his students, if we would discover a prairie plat or something that, or notice a track or something of that sort that he didn't see, those were brownie points for you.

Interviewer: Ah!

Respondent: Because he would always appreciate it when somebody else would see something that he hadn't seen or, you know, it was always a game of trying to see what you could see when you were on a trip and try to interpret the land.

Interviewer: Uh-huh. Is there, just kind of as a parting shot, are there any other elements that you think are important to include in the whole concept of an environmental education curriculum?

Respondent: Well, of course, the thing that's missing nowadays, one of things that's missing is so many people have left the farms, left the rural atmosphere and it's, and then this is, this is reflected in the number of people that go hunting and fishing, things of that sort, nowadays there's a, there's, any activity that brought you close to the land of course, was [_____] off in terms of what you thought about the land and so whether you were, unfortunately, as most people are city bred these days and don't have this opportunity and so there's just sort of a missing link that programs like the Leopold Education Program are trying to fill in with as much as, as best they can. It's a tough job, though. It's a, well, I think, you know, nature centers, all these sort of things are fill-ins for something that's missing and . . .

Interviewer: So how critical do you think is it that there's that actual, physical contact with the land?

Respondent: Well, you want to say that over again?

Interviewer: Oh, yeah. In other words, there seems to be missing this contact. So how critical, how important do you think it is that they get that, that physical contact be renewed?

Respondent: Well, it's a, no question about it being highly important, but whether this can be made up for I think is a challenge to us and I guess we don't know at this point whether we can or not replace it with something that gives you the same kind of an urge for the out of doors that these other things used to.
Interviewer: Yes. It's like we're trying to fill a void that we've . . .
Respondent: Yeah. Trying to fill a gap here that's pretty wide.
Interviewer: Anything else? Just any other comments?
Respondent: Well, not at the moment, I don't think.
Interviewer: Okay.
Respondent: But if you think of anything later or something like that, I'd be glad to . . .
Interviewer: I've put down here as the last thing. I was thinking of some other questions along the way that . . .

End of Interview

INTERVIEW #2

Interviewer: We're going to start off with kind of a big one really, and we'll narrow down some things but what do you think are the key components of environmental education?

Respondent: Well, it's a big question.

Interviewer: It is a big question and it's up to . . .

Respondent: It's a, I break it down into two, two questions. One, what is education and what is environment? And I find that most people, they have an impression of environmental education but when you start nailing them down they're not there and the one word that gets left out most of the time is environment. And so you're asking the question is it education about the environment? Is it education for the environment?

Interviewer: Uh-huh.

Respondent: It's certainly not education to the environment which is implied in the thing that's going on. So, I try to look at it, education to me means to lead out. Does not mean to pour in.

Interviewer: Hmm.

Respondent: So it means to, to get your students, whether they're adults or kids or whatever, it begins with lead out information from them. And what is environment? Environment is your total surroundings. And I look at the environment as having three major components. It has the biogeophysical, which is what most people think about and that's usually where it starts and ends. And the [--] two components that need to be taken care of as far as I'm concerned are the social and what I call the mind body or psychophysiological environment. That's sort of your internal environment. And these interact in [--] of activity. And the problem with a lot of environmental activism is it tends to focus only on the biogeophysical and doesn't realize that if people aren't in the social situation and don't have good feelings about themselves physically or whatever, you can't get them involved in the others. So you know, if you go into the city and you are spewing pollution off the ramps going over, it goes down and the people who live near the highways end up with respiratory illnesses and they're losing work and everything else and therefore they're not very interested in interacting there. That, there, two problems . . .

Interviewer: Oh yeah. Uh-huh.

Respondent: . . . are so mutually exclusive and then when you look more closely you realize that you can't really do anything about it if you don't get at making people healthier if they're going to be the ones that are going to have to deal with it in a local environment so we can as outsiders living in suburbia we can come in and dump our crap all over the air and that and not get challenged as much as we might if the people had a better sense of themselves and where they're going. So it's this kind of interaction that to me is essential in

understanding what's going on. This makes, in many cases, education and environmental education synonymous words.

Interviewer: Ah.

Respondent: Because it has to do with all aspects of our lives and so it's a case of getting people aware of how they interrelate with the environment. What they do to environment and what environment does to them as interplay. I mean, none of us is pure. If you breathe in and out you're putting pollutants into the air. You're withdrawing something and you're putting something else out. And so you start at that level. So it then becomes a question of what is the system. You have to look at the whole system and the interactions and what can you do with your life and your day-to-day operations and so forth, which will make the least negative impact on the environment to give you the highest benefits from the environment. And that's as true if you're a deer or a pheasant, or whatever, as a human being, you know, we're all in this together. We don't usually talk about it that way, environmental education is for people. But to me, this is where this big question gets complex. And I feel that most environmental education does not really address it. It focuses too narrowly and it tends to, one of my big complaints about environmental education today where it is gone, which is not where I would like it to be, is it's become so strongly issue-oriented.

Interviewer: Oh.

Respondent: There's a place for that in the sequence that we work on. But it's not the beginning and end. For a lot of people it is. And it ends up making it very narrow, so . . .

Interviewer: So it should go . . .

Respondent: It should be more basic, you know? To deal with an issue you must understand it. To understand it you have to understand the systems that are involved. Which systems are functioning, which systems are not functioning. So this is a very broad basis. Environmental education can't be a fifth grade outdoor education experience. And that's where it begins and ends and that's what it does in a lot of school. It's something that begins in the home, continues in the school, goes right through your high school schooling, goes into college and adulthood and it continues throughout your life as you learn more and more about how to interact with the world. So those are very basic things. We don't tend to teach it that way. And that to me is one of the failures of where environmental education has moved in a slightly wrong direction. And, you know, when you get to what is the ethic, ultimately , if they can't understand these things, they are not going to end up with an ethical background. And I think, you know, one of the things that Leopold really taught us and I just have to, here I'm talking about it and most people don't think about, they want to transmit Aldo Leopold's ethic. It won't work. You have to develop Aldo Leopold's ethic in others. And Leopold developed his position over a long career. It didn't happen out of the blue. Now we can shorten it by learning Aldo Leopold's ethic, you can shortcut the process to a certain extent but only amongst people who have other kinds of experiences

that lead them to understand more rapidly what Leopold is talking about. If you give it to somebody straight out of the city that's never been out of the inner city atmosphere, you give them Aldo Leopold and it's a fiction novel. You know. It has no meaning to them.

Interviewer: [--] one way to approach that. So why did you choose those particular, those components that you were, that you emphasized. Why those? I mean, you've given me some of your reasons. Any other . . .

Respondent: Well I think they're basically, they're true ecological reasonings, what it is, and to me it asks, environmental literacy, which is my, my big hang up has to involve economic aesthetics, ecology, those kind of things, it's a mix. It's not one or the other because it has to do with human beings. To me, sociology is ecology of human beings. The [_____] of human beings and so that has to be part of it and it's moving away from the paradigm of man apart and so then you can't really begin to develop a Leopoldian-type ethic until you have changed the perception to man as a part of, not a part from. And until you've got people over that first hurdle you aren't going to get any further in getting them to see it.

Interviewer: Okay. [--] describe if you feel like you need to add more to what you think would be an ideal environmental education curriculum. It sounds like what you have proposed so far, would you call that what an ideal environmental curriculum should have in it?

Respondent: It's, it approaches it. I mean, I believe, an environmental curriculum, as I've said, has to be lifelong learning. Because it's just too much and too complex to absorb and it has to be age appropriate. And I feel that, you know, you begin with the younger kids and it comes closer to the pure nature stuff which was one of the early components of it. And then by the time you get to middle school they can be concerned about their relationship with things and they can begin looking at their community closer as a whole. So you're moving in a next step. High school kids can begin to look even broader and college, even differently. But I've always believed, it's sort of a curriculum framework that starts. Now, we teach them to read, and we teach them to write and so forth. And all this time the kids are asking questions about you know, what does this mean to me? So at the next level you expand and you focus on what these things mean. And then you pretty soon realize that my skills aren't sharp enough to go any further so I need to have more math, I have to have more reading, and so forth. So you go into the narrow phase again. And then you balloon out by the time you get to early college years you're looking at the big picture again. And then in graduate school you, you know, you focus again. But that sort of pulsing approach to the thing is sort of a basic curriculum model for me in designing it. So when you're looking at an across-the-board development of a curriculum, K through 12, at least, you're looking at doing this kind of thing, recognizing where it's at. And as I'll talk about here, the focus is on the questions that you ask and it's important to revisit these key questions again and again throughout your life because with more experience, more background, the answers you come to

the questions will change. One of the critiques that's been made of environmental education in recent years by the conservatives is that yeah, you're teaching environmental education and you look at the textbooks and they're way out of date. Well, I've worked in the textbook industry for a while and I can tell you that any textbook is about eight to ten years out of date by the time it hits your desk as a new book.

Interviewer: Yes, yes.

Respondent: And you can't change that. But the questions that are involved are the same. So to me, what we're ending up doing is to try and develop a curriculum that's question-based, rather than concept-based. And that gets the kids trained in asking questions of the world around them and giving them tools to get answers and those answers can be doing it through interviewing people, they can be through experiments, they can be through going to computers and touching data bases, these are all tools to get the most current information relative to the question they're addressing at the time.

Interviewer: Yes.

Respondent: And this makes a much more current type of environmental education curriculum than the old here's all the concepts we have to learn. We have to have caring capacity and we have to have all these things. Well, those concepts are merged up questions. It's more important that people ask those questions and such than it is that they, I mean, in some ways it sounds more efficient to pour the information in. But if you go back to what I said education is, it means, it's from Latin, [_____] [*educo*?], to lead out.

Interviewer: Yes.

Respondent: So you've got to draw it out of the kids rather than pour it in. I've often said that people who normally interact with me, they don't want know what I know. They want to know how I know. Because then they can go and grow on their on. But all they can do is ooh and aah and say, isn't he smart or something else if you just focus on what you do have.

Interviewer: Yeah, yeah. Okay. How to know. I like that. You think then, and I think you really have already referred to this but do you think that the development of this land ethic is a critical component of environmental education?

Respondent: Oh I think it's a very, I think it's a very critical component. And it's one of the things that, it's the end product. The key to it as an end product is that the land ethic gives you a tool for decision making where you don't have all of the facts. That's what any ethical thing does, you're looking at it and you say I really don't know what to do here. What's the ethical background here and so I'll use that as a guide in making my action and decision. So the land ethic, or any very similar type thing, emerges out of people developing basic environmental literacy, in my opinion.

Interviewer: Ah.

Respondent: That's what I call, I call this asking questions of the earth's steps toward a land ethic.

Interviewer: Okay, okay.

Respondent: And it's growing. You develop an ethic. You don't get it handed to you. If we did, all people who were brought up Christian would be all beautiful, wouldn't they?

Interviewer: One would think so.

Respondent: And actually the more you've been brought up as a routine, usually the less developed you are. The people who come at it in sort of a born again situation are the ones who have had to work it through for themselves. And come to those positions. And you know, it's a very similar thing. The land ethic is a spiritual perception, about what's right and wrong, in terms of the land. I mean, Leopold said it very clearly, you know, anything that does those things is right and anything that doesn't is wrong.

Interviewer: Uh-huh.

Respondent: You know, and that's, that's basically what an ethical principle is. So I have some concerns about just going out and having people read and get involved in Leopold's work which influenced me from, I got my first copy of it in the 1950's as a graduation present from high school. But I had already had years of being a field naturalist as a kid.

Interviewer: Yes.

Respondent: You know, so I could see these things much faster. But if I had come out Harlem or places like that, it wouldn't have meant a thing to me.

Interviewer: Are you talking about relevancy?

Respondent: I'm talking about . . .

Interviewer: . . . when you say, coming from Harlem, this wouldn't be relevant to them until, they have no reference.

Respondent: They have no reference. They really don't know what he's talking about. It's Greek.

Interviewer: Uh-huh. Do you see that, do you see this as being a step towards creating a relevancy or how does environmental education then, maybe create that relevancy to allow that connection?

Respondent: A lot of what I did, in fact my Masters' thesis was on conservation, Meaningful Conservation Experiences for Metropolitan [____], was the title.

Interviewer: Oh, okay.

Respondent: And what we've tried to do is to have kids look at trees growing out of the grates in the sidewalk and look at it as the challenge that is to a living thing. And even though it's crooked and so forth, it's a fight for life. They've made an attempt to grow and all these things we call weeds are survivors and they have an ecology. Where do they get their water? Where do they get the, and they begin to see that there's a system here. And that we're a part of this system and not the end part. And so even within an urban environment you can begin to look at things and how they do, why do abandoned buildings have large bee populations?

Interviewer: Uh-huh.

Respondent: You know, rats we hate, but why are rats [_____] because what we do. We throw our trash out, we create an environment that provides food for the rats and you know, all these sort of things. You begin to look at the city as an

ecological system. Where do you get your water? Well, you don't get it from a well. You get it, so now you begin to look outside the city and we realize the city is not a self-contained ecosystem. It's having to reach out and pull resources in because we've concentrated people. We've exceeded the tearing capacity so now we have to find ways to do it. So you begin to use all these analogs to get people to begin to see it. Once they have the systemic thing they can begin to see, I mean, and a lot of it is a search, you look at a lot of naturalists, from Peterson and the others, you'll find that many of them started in small cities.

Interviewer: Yes.

Respondent: And that they had this great need to find life. One of my friends grew up in Boston but as a kid he was able to get on a T. And he'd ride the T to the end of the line every Saturday . . .

Interviewer: Yes.

Respondent: . . . and then go looking for things.

Interviewer: Yes.

Respondent: So there's a yearning in a lot of these people. It's not something that's, but if that learning isn't nurtured, man, I talk a lot about, you know, if a kid comes into the house and he's just seen a beautiful sky or he's seen a bird that he hasn't seen and comes into the house, and this is suburban as well, and he says, dad, dad, dad, and dad's saying quiet, the baseball game is on, or football or whatever happens to be and so the kid is turned down. He goes out to mom and he says mom, and she says look, I'm trying to get supper. So he doesn't get rewarded for his observation again and again. So he stops communicating. But if he comes in and he says to dad, how'd that baseball game go, who won? Now dad opens up and [_____]. Similarly with mom, she's out of [_____]. They don't realize that all those things are turnoffs. They turn the kid off and it's, the kid's natural instinct is to look at what's around.

Interviewer: Yeah, yes, yes.. Oh, I agree. Well, you have really, I think, is there anything that you want to add to your definition of a land ethic?

Respondent: No, just as I say, it's a tool for dealing with the unknown, as any ethic.

Interviewer: [--] this development of a land ethic and why or why not do you believe that?

Respondent: Well, one of the things that was Leopold's great ability, he was a superb writer. The book on reading this [____] for a long time. Because it's basic literature. But there's another aspect that I [____], I minored in English.

Interviewer: Ah, there you go. That's . . .

Respondent: And what I try and do with every novel, every novel has an environment. It's a presumed environment in many cases, and not clear, so one of the questions I have kids always ask when they're analyzing literature. What was the environment in this book? How did the protagonist interact with its environment? What was its effect on? So that they begin to look at literature as an aspect of environmental education because they realize again, the environment has a lot to do with who we are, what we are, and so forth. So you use the literature in English to do it. Leopold's is an unusual book in that

it focuses on the development of an ethic. But it works because it shows him developing his own ideas. He doesn't come up with it at the end. You don't see the ethic until the end of the book. You set up with the natural history, you go through a sequence and you see this man broadening his youth and [--] type of thing.

Interviewer: [--] style, the ability has a, is really a component or a factor of that, influence.

Respondent: Right. I mean, there are a lot of people who have written kinds of things but all of them who have made a difference have been superb writers. That includes *Silent Spring* . . .

Interviewer: Yes, yes.

Respondent: Even George Perkins Marsh which is an, you know, which the early one, he was a great writer, and, but people at first, in Perkins Marsh day, books didn't get circulated as well. I think, you know, man and nature would have had more impact if that book had a greater presentation to a broader audience so he was a voice crying in the wilderness at that time. And Leopold almost was because when he first wrote, that was 1948, nobody paid any attention. I mean, I had this driven home to me because I first went to the shack in 1962.

Interviewer: Oh.

Respondent: And I was here for a conservation education associate conference, it was very early in my career. And I wanted to see the shack. So I went out and rented a car and finally found it and then I found the driveway and do I just drive in or what, you know. So, I parked out and I walked in. And, you know, so low and behold at the shack was Estelle, the mother, and Nina, so hospitable to us, it was just wonderful. And Estelle was just sort of overwhelmed that somebody was aware enough and thought enough of her husband to have sought him out and found this place. And I brought a picture, I'm going to show it to Nina when she comes, of the photo I took of the shack in 1962.

Interviewer: On my . . .

Respondent: [--] when we go out to the shack to see, I mean it was twenty years after, at that time, to see what the additional twenty-some odd years has done to it.

Interviewer: Oh yes. So what else might you attribute this ability, you know, of the literature? How does it seem to do that? The style is important in the influence of . . .

Respondent: I think it, it . . .

Interviewer: But how does it, how do you think it does that?

Respondent: But I think it also, it depends on the ripeness or the maturity of the mind that's reading it. My, I've got my wife's, my wife and I have been only married for four years. My first wife died back in '88. And Sandy has not been brought into this tradition. She likes the out of doors. So I've just had her reading *Sand County Almanac* for the last little while. It's interesting because she's really found it fascinating. I haven't had a chance to find out how much of the ethic she has absorbed out of it. She's enjoyed the book. But I think again, to what I was saying before, if you put it into a context where people have had a lot of outdoor educational experience [--] I give you a contrast. When I was in college, we were [--] and I grew up, I loved Wordsworth. My

professor did not have a rural background. He was a city person. So, he was a favorite of T.S. Elliott. I couldn't stand T.S. Elliott. I couldn't understand T.S. Elliott. The references weren't there. And he couldn't understand Wordsworth. So we spent a lot of time trying to help each other see it. And it's, it was not disliking the poetry or anything, it was a case of not having the reference points. And that's what I think is, you have to understand for people who are reading Aldo Leopold. So what does that mean for an educator? That means we need to provide an experience bank for kids so that they can be ripe for reading something like that. I've said for years that kids today, and I don't mean just in the '90's, it's been [_____], are information rich and experience poor.

Interviewer: Uh-huh, uh-huh.

Respondent: There are kids that can tell you all about space travel and so forth who couldn't find the big dipper if their life depended on it. You know, they, they've absorbed all this information but they can't put it together. I used to, when I was teaching graduate students at Harvard, I used to drive them absolutely mad, because they didn't like the idea of having anybody teach them methods. You know?

Interviewer: Yes, which is what I teach.

Respondent: So I would play dirty tricks on them. One that I used to do is I would say how many people here teach the nitrogen cycle? All hands go up. How many of you have ever seen the nodules on the roots of clover? Maybe one or two. I'd say, do all clover plants, do you think, have the same number of nodules? The logical sense said probably not, you know. So I said what kinds of things do you think would influence the number of nodules on the roots of clover? Well, they'd talk about pH and I'd put that on the board. They'd talk about amount of moisture, we'd put that on the board. We'd get this whole thing done, we had built a lovely grid out of the discussion and I'd reach under and bring out the same piece of paper all worked out which is what they had done and say now, let's go out and take a look at the roots of clover that you have never seen. You know, because they had no experience. The final exam in that course was building a food chain. If I had given them east African animals, they'd had no trouble at all. But I gave them suburban backyard stuff, Japanese beetles, grasses, clovers, and all that sort of stuff and they just wiped out on it because they had no experience. And you know, that's, I feel very strongly, the one of the things we can do in school is to use outdoor education or whatever you want to call it to develop an experience bank and one of the things I used to try and do, particularly with urban kids. I couldn't take them all out at once, working in the City of Lowell. We didn't have the money to take them all out . . .

Interviewer: Where was this?

Respondent: The City of Lowell.

Interviewer: Which is . . .

Respondent: In Massachusetts.

Interviewer: Okay, okay.

Respondent: And, so we developed a concept that I called remedial experiencing. We had, I had a list of things that are, being, I mean, if you want them understand the water cycle, they ought to have been outside in a rainstorm. They ought to have watched a puddle evaporate, you know?

Interviewer: Uh-huh.

Respondent: There are a whole lot of things. So we put all of these simple activities on a list and asked people to check off the ones, and we put a lot of stuff we knew they'd know, like how many people have ever bounced a ball off a building, or something like that, you know, we had all these kinds, and when we get it back we look and say these kids are the ones that need to go out and have some of these experiences, so we would give them remedial experiencing before they were to discuss the water cycle or whatever they were doing. And I feel that that's an important kind of an issue to focus on in creating curriculum stuff is to think about what are the lacking experiences which are important if people were to build some of these concepts we say we want people to learn.

Interviewer: Yes, yes. How would you describe your level of familiarity with *Sand County Almanac*? Like, how often do you read it? Or when was the last time you read it?

Respondent: Reading it right along. It's one of the few books that I keep by my bedside and read quite frequently. Partly because I'm intrigued with his skill in linguistics and [--] writer, he edited, and re-edited and edited again the things that he wrote. Took him a long time to write, he was not, I mean, it reads like it was easy writing. And I don't know how he did it, because sometimes if I do the same thing my writing gets more forced.

Interviewer: Yes, yes, uh-huh.

Respondent: You know? And yet he was able to edit and refine it in a way that made it flowing and easy to understand and avoided a lot of the jargon and that sort of stuff. So I do it for that and I do it as a reminder of the growth of the man and also the stories that he tells on the way to thinking about a land ethic.

Interviewer: [--] components and you've already mentioned several, of the *Sand County Almanac* do you consider to be the most persuasive, or that make it a persuasive piece of literature?

Respondent: Well I think it's the whole [--]. You start with something that people can understand, these little nature stories, the book's [--] the environment and then he starts inserting some of these stories which show relationship with the land and different pieces and then the next thing you know he extracts from those stories the basis of the philosophical approach but it's building, it's building on experience that if your experience poor he creates the experience for you. That's what it boils down to.

Interviewer: What do you think was Aldo's, his intent?

Respondent: That's a very hard question. It's hard to ask of any author because very often you find the reviewers from Hemingway right on down, being given intent if they had it they didn't know they had it you know . . .

Interviewer: Oh sure.

Respondent: . . . it becomes a fiction of the critics.

Interviewer: I'm most interested in your thoughts. What you think he, his . . .

Respondent: I think he was trying in a simple way to summarize his own life and development. Not as a biography but the development of the ideas through his own life and it [_____] particularly true if you had an edition that includes *Round River*, because there are other pieces but they're, that part, and also in the original title for the book which was *Great Possessions* . . .

Interviewer: Yes, yes.

Respondent: . . . say to the public, we are so fortunate because we have these things available and I'm particularly fortunate because I possess these things which most people are missing and I want to share with you what these perceptions are because they're available to everyone.

Interviewer: Yes. Why do you think then that the Leopold Education Project itself then is so effective?

Respondent: I can't, I can't . . .

Interviewer: If you had to [_____] critical components.

Respondent: Well, I think that I have to bow out of that one because until I was invited out here I was not familiar with the Leopold project and I haven't seen their materials. So, how effective it is or isn't I can't tell you at this point.

Interviewer: Okay. That's fair enough, fair enough. Oh sure. So you're not, in other words, you have not been through facilitative training? What drew you to accept the invitation to come out . . .

Respondent: Well part of it was because I've had such a long relationship personally with Leopold in the sense of the family and so forth. I also brought out the [_____], down here, I think I stuck it down here, I had brought out the map. I've been a Wild, Project Wild facilitator . . .

Interviewer: Ah, that's right . . .

Respondent: . . . since the beginning. And so in '87, I was writing the Massachusetts Wild Newsletter. I wrote a whole article in there on the centennial of Leopold and urging people to include it in their Earth Day presentations and that sort of stuff in '87.

Interviewer: Tell me what that was in again?

Respondent: Project Wild Newsletter.

Interviewer: Okay, okay. Do you have any feeling for differences between Project Wild and LEP? I know you said you were not familiar with the materials, I don't know if you've had a chance to look at any of them . . .

Respondent: I haven't seen them. I know they're using the basic Wild model, you know, training facilitators and moving them out. Everything that I've heard it seems like it's a good, sound program. We just don't see it back east. I'm trying to get Matt to bring it to Massachusetts Wild because I know we'd use it. One of the problems has been with Wild Learning Tree of [_____], is each developed the same model and a couple of them with the same developer. But because they were funded separately each one was trying to maintain its own identity, which has always seemed stupid to me. I mean, I will admit that . . .

Interviewer: I understand, yes.

Respondent: We've done some, we've done some training of people, even though we weren't supposed to, using both processes. And they hate it. Because a teacher doesn't know whether that came from Wild or Learning Tree, and who cares? Well, the people who wrote it do because they don't have the evaluation they need to do that to get their money and so I understand that sort of thing. But the process is a valid one and it works and there's some good activities in Wild and there's some bad activities in Wild and with Learning Tree. Of course, learning to [_____] [_____] they're learning these things. And they work but they lack something and that is it's very hard to get people to move past what they've been trained. You know? They do the things, the activities that they got in their training session and then getting them to use more has been difficult. And part of the flaw there is that some activities lend themselves to the short term of a workshop more than others. So what we do now, in Wild, we have a split. We do three hours and three hours and two weeks in between.

Interviewer: Ah.

Respondent: And in their first, in the first one, we have them chose an activity they think will work with their kids regardless of how much time it's going to take. So we do something we'd like to do [_____] and that sort of stuff which are easy to do. But then they're to choose an activity and it doesn't make any difference if several chose the same activity, that's not a problem. Go back and do it with their kids. And then in the second session, part of what we do is to have the teachers debrief us on how it worked with their kids, what were the problems, what groups did it work better with than others. And then you'll have somebody else who did the same thing and said well, you had this experience, I had this experience. This, what worked for you didn't work for me and so forth. And we found this very valuable in getting at things, and getting people to use more of the stuff that's available than you usually get in a workshop. I suspect the thing is probably true with LEP.

Interviewer: That's very different, from, I'm a Wild facilitator and have been to the [--]. I see very definite differences having also now having been through the facilitator training before at LEP and it was described to me by a friend of mine who also has been very [--] LEP seems to be the next step, if you will, and whether or not that means the ethical part that's emphasized or you know, [--] approached or not, [--] not necessarily want to get to that, but it seems . . .

Respondent: Yeah, well I talked to Matt about had they done any cooperative stuff with Wild and the answer is no and they didn't seem to get very far because they've got new national staff now and I don't know the new national staff. I worked very closely with Cheryl for a long time and I worked with [--] and a bunch of people who have been very receptive to this kind of thing. And it's why in Wild you have ethi-reasoning and that sort of stuff which we always used to try to show the development of going from a simple activity like [_____] to the ethi [--] in the sense that I understand that of the Leopold ethic

approach it would be the next thing after ethi-reasoning. But ethi-reasoning is basic to developing an ethic.

Interviewer: And you're calling it "ethni" reasoning?

Respondent: Ethi. Ethical.

Interviewer: Okay, that's fine. I just wanted to make sure I clarify that, yeah. All right. [--] you describe Leopold's land ethic in your own words, what would, what, if you had to say okay, these are the key components of Leopold's land ethic and then include with that how do you, how you think he developed this land ethic?

Respondent: [--] unclear about that along the line because he started out being a strong [--] that thought that predators should be eliminated and that sort of thing and developed an understanding that predators had their role and then [--] land and habitat affected both the wolf and its prey and you know, that whole thing. To me the development of the land ethic is, it's a perception that man is a part of the world and there's some radical thinking in Leopold that's often not addressed fully and that is that he was pushing the edges and that he was saying, you know, if we have to make decisions about how land is to be used, even if we have to fly in the face of some things that humans think are important, that we have to think about the integrity of the biodiversity of the land and that's where your decision has to be made. And a lot of people who claim to have the Leopold ethic do not have that. They don't realize that's really sticking yourself out beyond where most people are willing to go. And it would be, you know, if we have to control human populations in an area, so be it. But that's anathema to a lot of people. So there, it's a very deep process. Baird Calico has addressed some of these issues very nicely. And there are some people who have gotten into it that realize that they got led down a path that they're not sure they really want to go. But the idea of the ethic was that you know, when you're faced with lack of information about how you should behave, here are the guidelines for making your own decision. How does it affect the integrity of the system, what you're going to do and so forth. And you know, it's based on the statement that I have used a long time. It's when in doubt, don't. You know, as opposed to the legal systems, that you've got to prove to me that it's bad before I'm going to stop doing what I'm doing. And that's based on the thought that it's easier to maintain the health of a system than it is to try and repair it even though the Sand County experiment on the shack showed that you can restore. It's, you know, it's not a total negative. You can bring things back. It takes a tremendous input of energy. It takes a tremendous long time commitment to bring these things back to a reality. And most people aren't ready to make that commitment. In this day of instant everything, we want to happen. We don't want to make long term commitments. And ethics give you a guideline for long term commitment. That's basically [--] Leopold was trying to say, I've been there, I went through the process, this is where I came out. I think if he were alive today he might say that's not the only place that you could come out. Beyond where I went.

Interviewer: . . . [--] other comments, last comments about the elements that maybe you haven't mentioned that should be included in an environmental education curriculum?

Respondent: I mean, I pretty much said that needs to be, include a lot of disciplines that don't usually get included, it's geography, I think, I wish I had my chart with me. I usually say ecology, if you take ecology [--] . . .

Interviewer: Oh okay.

Respondent: Okay. So, and then you had underneath it, you had also the fact that you, you're looking at ecology goes to zoology and botany and [--] under zoology, not spelled right, but . . .

Interviewer: . . . doesn't matter.

Respondent: . . . you get down into, I'm going to short circuit it, you get into [--] all across. Then under mammalogy you have [--] and you have primates.

Interviewer: Yes.

Respondent: And then under primates, you have great apes, [--] of man, you have, and it applies to all these, you have sociology.

Interviewer: Yes.

Respondent: And then you have the economics. You find that all these things are subsets of the understanding but we tend to put it the other way around. We build it first with, we talk about ecology and economics and all this sort of stuff. [--] it all on humans. And all that sociology is the social interactions of this group living ape you can do it with [--] economics that deal with [--]. All these things are branches of [--].

Interviewer: [--] thinking like meteorology, or that's even maybe too specific. You have geology and astronomy and . . .

Respondent: And ecology's just the interaction of all of those, you know. And I tried to build this chart, which I did a long time ago, so it's not all in my head [--] and so what we're looking generally is just [--] is aspects of one species but that [--] biodiversity thing and not all by itself. [--] they really don't understand.

Interviewer: So that's just part of the natural anthropocentric. I mean that's, it's just normal for us to do that . . .

Respondent: Yes, if we were wolves, we'd think . . .

Interviewer: Right.

Respondent: . . . like wolves and that, you know, that was the most important thing and there's nothing wrong with that, I mean, that's being human. [--] wrong is that as an intellectual being we actually need to see beyond that and when [--] we get ourselves in trouble.

Interviewer: Yes. [--] need to [--] I'll call it an analogy because that's not really an analogy it's, I can't think of the word I want [--] I think the perspective taking. That's what we have. But it is, it's that next step, you know, when we think, well, I guess getting past the [--] orders supposed to be in charge of, meaning we're in control of or think we're in control of. [--] that you would like to add to this? We could talk forever.

Respondent: I think it's a basic component in hearing you mention the theological stuff. In the ethic there's a stewardship. And stewardship is a key word.

Interviewer: [--] you define stewardship?

Respondent: Stewardship means that even though you have a human [--] of humans to care for [--] and [--] for only one of a [--] in a way that provides for your needs.

Interviewer: Several sources that I have read talk about that stewardship is the step closest to where we really need to be. In other words, there's the next step beyond this that is where we are truly are integrated with the environment and what does that look like to you, I mean, how would that look if human beings [--] which is your caring for but there's still that little sense of I've got to be in charge of because I'm caring for.

Respondent: A lot of native Americans had that next step. They're creatures as other nations [--] but equal in their [--] often see better than we can. They have [--] just happen to be able to use our minds better to our advantage or to our detriment. [--] to get to see ourselves as part of other nations interacting. A lot of the, to me, one of the key aspects of environmental education held in my mind anyway, is the whole concept of [--] trying to think of things to, always think in terms of consequences. [--] to me as a definition I worked out with a group of students some years ago[--] to the environment in excess such as what we're talking about, hot water, things like that that you, so that heat becomes [--] in a system that's made up of subsystems, you know, on the infinitum [--] things when you're trying to develop a solution to an environmental [--] systems are involved. Which subsystems are functioning normally and which ones are not functioning [--] with those non-normal ones to bring them back into normal functioning.

Interviewer: Yes.

Respondent: [--] often we mistake [--] treat a symptom but that's not the cause [--] forcing yourself to look . . . [*tape runs out*].

INTERVIEW #3

Interviewer: Okay. Well, I'm just going to start off with the real easy ones.

Respondent: [--] what I call simply love and that's [--] a person can [--] strive for a land ethic unless they have that love [--] a person developing a land ethic and those early childhood experiences where people are able to interact in the natural world in a very natural way without adults stipulating how they interact out there, I think is vitally important.

Interviewer: Are you saying [--]?

Respondent: [--] scripted is an excellent choice of words. [--] I worry a little bit, being director of environmental education program we, you know, we've got all these formal curriculums out there but I still believe that there's nothing such as a solo, a personal experience and the opportunity for a youngster or an adult to investigate the natural world and I think that's vitally important. [--] some of the demographic changes to our society in the last 50 years and especially in the last 20 years, I think those opportunities have decreased. The number of opportunities. Urbanization. You know, of course, this is the Leopold Education Project and when Leopold penned the words for the *Sand County Almanac* we had about 29% of our population residing in rural areas. Very connected to the land through mostly agriculture farming systems. Today, if you look at USDA figures, we're somewhere less than 2%, that are raising food and fiber in this country. So those type of sweeping demographic changes have taken people away from the land and, you know, it has really disconnected them from the natural world. I would say there's three ways that I know of that people have become connected to the [--] one of those things was farming. And I just described what has happened to that and we're all very well of that. The second thing probably was some recreational pursuits. There used to be quite a few traditional conservationists in this country. Hunting and fishing and, of course, if you paid attention to the demographics and the stats on that we've got decreased participation in [--] years, the fish and wildlife service does another survey and we don't have many young people being involved in that. So there's those pursuits and probably the third thing was nature study. And, you know, you look back and nature study isn't something new. I run into a lot of people who think that environmental education was just something that happened in the 1970's.

Interviewer: Yes.

Respondent: And, you know, you look at Anna Botsford Comstock's book *Nature Study*, which is still in print, that was used in all the one-room schoolhouses across the country. You know. And these were with kids who were living on the land at the time. So, you know, those kind of things are, concern me, and as far as the development of land ethic I think that connection, integration what I call love is probably the most important element.

Interviewer: That sounds like . . .

Respondent: [--] while in my mind, I mean, certainly, that's certainly the goal of the Leopard Education Project and you know, I think [--] develop that, an ethic from that, a moral obligation. That it's not some abstract thing out there but something that they're a part of [--] I guess part of it would probably be my personal background and looking at how I became connected to the land. Another part of it is this project's facilitated me, talking to other people with similar interests, with similar loves, with this connection and I've always been curious to how they became connected to the land and talking, just informally interviewing people, that's one of the first questions I always ask. Well, how did you develop this connection to the land? And, of course, one of my primary people, primary groups of people I love asking that question are women. Because, you know, traditional conservation has been predominantly dominated by males. I mean if you look at the wildlife management and the wildlife biology field, you know, 98% of the professionals are males and when I [--] wildlife management or wildlife ecology, it's very interesting to me to find out how they became connected. Most the males in this profession, in the wildlife biology profession, came to it through hunting, fishing, all the little personal explorations that youngsters used to have. [--] new female professionals, it's interesting that they, a lot of them have probably came to it in a different route. Because traditionally fathers didn't take daughters hunting.

Interviewer: Go ahead, go ahead.

Respondent: And so, you know, it's interesting to find out, well, was it through the formal education process that you developed this awareness and, of course, I'm sure you've heard of E.O. Wilson's *Biophilia Hypothesis* . . .

Interviewer: Yes, yes.

Respondent: And sometimes I do think people are predisposed on it. We all like to gravitate to where we get our feel good factors from and I think for some of us [--] to us. So.

Interviewer: Why did you become a facilitator?

Respondent: Well, of course, I'm the director of the project, so.

Interviewer: Right. But were you a facilitator before that?

Respondent: No, no. I actually became familiar with the project through Cliff [_____] and Council 16 down in northeast Illinois. [--] wildlife biologist by training and, of course, all good wildlife biologist know who Aldo Leopold is and I've read the *Sand County Almanac* and *Game Management* was a textbook, or at least a foundational textbook, in wildlife science courses at universities and so I was a regional biologist for Pheasants Forever when they started an education program at the national organization. I also had some background in teaching at a private college in Duluth, Minnesota, so I was kind of [--] a little in both areas.

Interviewer: Okay, okay.

Respondent: And when I came into the national office with the charge of looking at environmental or conservation education programs. They, the Board wanted to do something meaningful rather than just produce a magazine. I heard

about a project down in Illinois that soil and water conservation districts had started and it was [--] it was a natural draw for me. And so that's when Pheasants Forever became involved with the LEP project and [--] as it started this thing as a Gideon Bible project, which is kind of interesting. They were giving out *Sand County Almanac*'s to all the landowners, or landowners' children that they came in contact with. [--] seeing wetlands drained and soil eroded and all the things that soil and water conservation districts and so when they'd go talk to a landowner, they'd say well here's a free book, why don't you see what you think, you know, and they were Leopold nuts and so that's kind of how the project got launched and the deal with Pheasants Forever was that I saw a very critical link that we could provide in getting these materials in the school. And that the PF chapters on a grass roots level could fund teacher education. So that's how . . .

Respondent: . . . was very in at ground zero with the project, so.

Interviewer: What in your opinion . . .

Respondent: [--] be included in the land ethic besides this love that I've been talking about?

Interviewer: Right, and that's one of the things . . .

Respondent: Yeah, love and a continuing sense of inquisitiveness. You know Leopold coined the term land ethic and he was a great Socratic questioner. You talk to his former graduate students and you talk to his children and one thing comes through. He was never one to put words in his students' or his children's mouths. He was a great facilitator in the sense that through Socratic questioning he led them on in this constant sense of inquiry about the natural world. And I [--] isn't a [_____] theme. I mean, you know [--] about Aldo Leopold. Here's a guy who clearly articulated not only the scientific but his own personal thoughts and feelings and that's what makes Leopold so unique. Not that he was just a great scientist which he was. But he was able to articulate his personal feelings, his values, so well that we understood. You look at Leopold's writings, and we have early writings from the age of 17 when he was in prep school at Lawrenceville, [--] his writings through his whole lifetime and you can see that dynamic process of the land ethic developing. And, of course, when he penned that it was the end of a lifetime of, or near the end of a lifetime, of that being developed. And so Leopold serves as kind of a useful role model in the fact that you see that it isn't a static process. I mean, back in the '20's he's talking about shooting all the wolves and predator control and then, you know, at the end of the thing you can see him thinking like a mountain how his views have totally flip-flopped.

Interviewer: So do you see . . .

Respondent: [--] not necessarily but I think that he, he can provide a prime example of the process.

Interviewer: How does it do that?

Respondent: Well I believe that certain pieces of literature can be catalyst for change. They can stimulate that sense of inquiry that I just talked about and a person can relate to that. I mean, the *Sand County Almanac*, that's the way we use it in the Leopold Education Project and I probably read that book at least 50 times

and each time I have a different meaning and it continually means something different to me and so I think definitely a piece of literature can be a motivating or a catalytic force in a person's quest to develop a land ethic.

Interviewer: Well that kind of leads, that really kinds of lead into another [--] would you describe your level of familiarity with it and how often have you read it?

Respondent: I just said I've probably read it 50 or more times. But, am I, as I also said, it, every time I read it, it means something different for me.

Interviewer: How often do you think you read it?

Respondent: I don't read it, sit down and read it cover to cover, but I'm always pulling, using it as a, as an inspiration for exploring my own feelings. [--] wouldn't be adequate to what it is for me.

Interviewer: I don't want to put any words in your mouth, that's why I'm . . .

Respondent: Yeah. [--] still like the word catalyst. I mean, to me it's something that really speaks to my soul. And [--] another word might be that it's a springboard for further learning for me, for further self-exploration. [--] Leopold and reading most of his writings and Curt Meine's book, the biographer of Leopold, it's pretty much my understanding that he was a very humble person and you know, I think he'd probably be amazed at the way that we're using the *Sand County Almanac* or amazed of the reach that it's had around the world. And I think [--] probably used a lot of these as a synthesis of his thoughts and feelings. He was always a meticulous field note keeper and the Sand County [--] holds field notes of his heart. And that's the way that I think about it.

Interviewer: [--] do you think the LEP is so effective?

Respondent: Well I think there's some . . .

Interviewer: How would you describe its critical components?

Respondent: Well, I would say that's probably, some of the most unique features about it is that it's very open ended but it's based on a classic piece of literature and there's not too many environmental education curriculums, none that I know of personally, that uses a classic piece of literature as a spring board for environmental learning. So that's one of the very unique features of it. Leopold was such an eloquent, articulate writer that it has really broad interdisciplinary reach. We get people coming to LEP workshops that are English teachers, art teachers, history teachers. I've had a Naval dentist come to a workshop. We've got naturalists, wildlife biologists, and foresters, geologists, go on down the line of the scientific professions but we've also got all those people from the so-called humanities areas or disciplines and some of them have come to workshops without a real good connection to the natural world. But they've been presented with a copy of the *Sand County Almanac*, I've had English teachers, language arts teachers tell me, took a look at it and say, this is just fine, fine eloquent prose. I don't much about the natural world and I don't know who this guy was but I want to expose my students to this kind of writing. And [--] it's got some very unique features in reaching out to that. The LEP is very open in that we're not prevential about this. We don't think that we're the only way and we realize that there's other philosophical underpinnings out there that are valid as well besides

Leopold and land ethics. I mean there's the deep ecology movement, there's ecofeminism, you can go on and on and these things all have to be looked at in the critical thinking format. And that's what we try to strive with the Leopold Education Project. By leaving it open enough for educators to use it, insert their own materials, combine it, work with it in conjunction with other projects. We . . .

Interviewer: So you think it integrates well?

Respondent: [--] well and we certainly don't go out and try to bad mouth any of the other environmental education curriculums out there because [--] valuable components to them that we don't offer. But I think we have a unique niche in that we're dealing more with philosophy rather than what I call biotic mechanics.

Interviewer: Do you find the fact that you call it philosophical . . .

Respondent: [--] I think it's a strength, but, and sometimes it can be an impediment. We're talking about values here, and ethics. And, or course, sometimes when you try to introduce those into the public school system it can be very controversial. But everything we do has values. Even good science.

Interviewer: Oh, absolutely.

Respondent: And to live in this false world and say that, you know, we're educating without values is absurd. And so, you know, our approach to that is to say yes, this was Leopold's values. There's a number of alternative points of view. We need to investigate those alternative points of view. This is where Leopold got his information. This is where these folks are getting their information and leave it up to the student or the adult or whatever that is working with this to develop their own value system without indoctrination.

Interviewer: Yes.

Respondent: And that's the whole crust, crutch, of the Leopold Education Project, is to use that critical thinking format, to investigate our relationship to the natural world.

Interviewer: [--] are of the critical components of his land . . .

Respondent: [--] you know the critical components, he had a very thorough content knowledge, as some people would call it where he based his beliefs on the best science available in an investigative sense. That was very important in his development of the land ethic. Vision. I mean, Aldo Leopold had a tremendous amount of vision. And he wasn't ignorant of history. I mean, he was very well versed in history. If you read his writings he compares land use situations, you know, all the way back to the start of the time of civilization and so he was, had a great breadth of vision of being able to look at the whole picture and looking at those interactions [--] into the natural world but he was inclusive in the natural world of the human community and so, you know, you're talking about the whole interrelationships of culture, morality, our whole way that we deal with the land, and how we deal with one another and how they're interrelated.

Interviewer: Okay. I'm . . .

Respondent: See, yeah, I can say it. You know he was able to use his historical perspective in the development of his land ethic in the sense that he looked at the interrelationships of humanity with the land and in the cultural aspects of those relationships. [--] Leopold was talking about some very fundamental things here. I mean fundamental in the sense that a large portion of our society is ignorant to the role that land plays in the development of our culture. [--] arts, our economics, [--] relate to one another, [--] Leopold, in today's world and I can't put, you know, words in his mouth, would find ecofeminism a very fascinating philosophical underpinning in [--] that the way that we treat the land is related to the way that we treat women in a lot of our society and culture. And there are some parallels there.

Interviewer: I guess that's probably . . .

Respondent: As I mentioned earlier, it's pretty hard to have a love of something when it all results from second-hand knowledge so personal experience [--] to explore that personal experience is vitally important.

INTERVIEW #4

Interviewer: . . . think it, yeah, it's working, it's voice activated and if it's okay, I'm going to go set it right here on the arm of the chair.

Respondent: Okay.

Interviewer: And then maybe you'll just ignore it, but, you know. I guess one of the first things, what I want to do is ask you some questions . . .

Respondent: [--] education is an interdisciplinary, [--] often issue or problem-based [--] around [--] the quality of the environment and the human [--] education, I think, has to be [--] feelings aspect of human beings. [--] [--] economics and ecology. As [--] are just a few off the top ideas.

Interviewer: Okay.

Respondent: Another addition I'll add is that environmental education can occur both indoors and outdoors. In other words, it can occur through [--] and certainly one of the most important components to me is field [--].

Interviewer: [--] put words in your mouth but . . .

Respondent: Important characteristics and I've thought about distinguishing environmental education from outdoor education because I teach, I teach a class called Principles and Concepts of Outdoor Education. [--] it's been on the book for many years. [--] what I move to is a combination of the terms outdoor and environmental education. So I put them, I string them together because I think that an outdoor educator who [--] outside the classroom and looks outside the instructional media that's normally associated [--] would be interested in issues and problems related to the quality of the environment. So I'm saying that closely related fields, that I combine them and I talk about outdoor environmental education in the course now and I don't limit myself only to outdoor education in the traditional sense, which I think is using the out-of-classroom areas to enrich all areas of the [--]. I didn't try but I have a [_____][*Venn*] diagram that does.

Interviewer: Ah.

Respondent: And it, it shows overlaps and it shows distinctions. Outdoor education I believe is the [--] of classroom experiences where they can be best [--] the whole discipline segments. Environmental education is often more [--] more limited in the scope because outdoor education can cut across all areas no matter where they, they can be enriched. Whereas environmental education usually [--] but there's a big place in my [_____][*Venn*] diagram where there's overlaps and the overlaps would be that they all [--] sense re-awareness and it all, both of them are interdisciplinary. [--] are the differences in techniques. [--] one is outdoor education always occurs outside of the classroom whereas, in fact, in that last issue . . .

Interviewer: That's intriguing.

Respondent: . . . that last issue of *Tap Root*, remember, I held up *Tap Root*?

Interviewer: Yes. Yes.

Respondent: I have the [_____][*Venn*] diagram in that if you want to peak at it.

Interviewer: I would.

Respondent: [--] just elaborates a little more carefully on what I've been talking about.

Interviewer: Well, then if you [--] environmental ed curriculum . . .

Respondent: [--] would certainly be K to 12 plus. And it would be mentally appropriate, a la David Sobel [--] of course, who say [--] that are beyond where they are. A lot of them would be community [--] grade levels now [--] in Australia are difficult. And so there is a point where you move beyond the community and beyond problems of your particular area but those have to dominate the early years. Environmental problems are global in nature but maybe if we look at the principles of how we solve the local ones then we'll be more able to look in a broader scope when we get older because I think what we're trying to do is develop an active [--] that will produce [--] and I believe that some of the, some of the ideas should be [--] early on. I definitely [--] thoughts of indoctrination in the schools. For example, first of all, that math is important is indoctrinated. Right? So there is just a simple example of . . .

Interviewer: Absolutely.

Respondent: . . . of the importance of indoctrination. If that wasn't indoctrinated how many kids would choose to study math of their own accord? I don't know the answer but yeah, the question again is what are we going to indoctrinate and when?

Interviewer: Yes.

Respondent: And [--] to create a certain type of [--] the right way to be and therefore, we have a path to change that we think is important. Now with anything, there's a downside to that. And the downside is that kids don't think [--] they're not [--] views and that's counterproductive to a democracy so I think what we have to do is balance [--] indoctrinate with what we [--] for and [--] of what democracy is and how citizens [--] so we have to be very cautious before we select things to indoctrinate but [--] algebra's indoctrinated and I still haven't used very much of that. I think it's mostly to exercise the brain faculty psychology which went out 60 years ago. So, I think there's so much of it in schools already, why shouldn't we have a chunk of the indoctrination?

Interviewer: [--] the land ethic is a critical component?

Respondent: [--] hesitate only because I'm wondering if it fits within that area of education or it's broader, you know, than environmental education . . .

Interviewer: Yes. Yes.

Respondent: . . . That's, that's the only hesitation but it's got to be somewhere. And whether we put it under the framework of environmental ed [--] [--] but you see even if environmental education were eliminated from a curriculum, which, of course, I hope it's not, I would think that an environmental ethic should be in there as a part of the best of what kids need to know so that's why I hesitated. I didn't know whether . . .

Interviewer: Yes.

Respondent: . . . it should belong under that umbrella or it's so important that it should be there as a part of a general education and whether environmental ed, whatever that means, is included or not, it's there as a part of general education. So yeah, got to be [--] first let me say that I think a synonym is environmental ethic and that a land ethic is a certain word or phrase used by Leopold primarily as the [--] of that. [--] synonyms for [--] use it in the same way I would use environmental [--]. I think it's a set of beliefs, [--] and ideas that help guide the way we [--] pieces of literature can influence [--] of that literature often says things that you believe and you feel in a way that you couldn't put your finger on at first and, therefore, it

expresses an important idea for you. [--] about *Sand County Almanac*, his father's book, that he phrased in such a way. Remember in the *Profit for All Seasons* he, oh, no, maybe it's in [--] [--] it's [--] it's . . .

Interviewer: Oh, okay.

Respondent: . . . the American experience, it's [--] back to literature.

Interviewer: And how it, how it . . .

Respondent: [--] and that, the one response was it expresses thoughts and feelings, beliefs that, in a way [--] [--] so learn by studying the author's life and use [--] the heroine [--] shape your character. You could model yourself after, it's a way of developing your values. [--] because I'm involved with the Leopold Project, I've read it several times and [--] weeks ago I read the *Marshland Elegy* because [--] of Leopold. [--] loud the first time. Even though I've read it several times and looked at it many [--] rich, it contains so many ideas that with each [--] it's a tremendous [--] because of that, even though I've read it many times, [--] think I'm that familiar with it, if that makes sense.

Interviewer: Yes, it does. No, it does.

Respondent: [--] by Law is the film in which, Wild by Law is the film in which _____ [--] believe talks about the importance of [--] assumption is it's persuasive piece of writing.

Interviewer: Well, they [_____], absolutely. It's a little [_____]. If you feel like . . .

Respondent: [--] prose. [--] coverage of the relationships that humans have to [--] basic awareness level that's generated of nature. [--] the *Almanac* section, 12 months of the year, Leopold [--] became aware of and what he wondered about and [--] he used to note [--] I think an important element of an ethic is [--] the thinking that many people applied to their relationship to nature and would be more caring and expand the community and the mountains and the soil and all of its components. [--] think that governments were doing a great job and he had great faith in the individual landowner [--] or he, if he didn't, he thought that they were the most likely people to make a big difference. Yeah, sometimes I'm not sure he had faith in the farmer or faith in the landowner but he figured well, if they don't do it, the government won't because they don't own much of the land compared to the private ownership so we better approach the [--] person. So I think he wrote the book to influence the [--] owner even though he would want schools and churches and institutions to do a better job [--] effectiveness by facilitators leaving workshops pleased with the way they spent their time, it's effective. It's what many of the evaluations say that I read after facilitator workshops. [--] evidence that these facilitators leave and actually implement it with younger people or their students. I don't think anyone studied that [--] after the facilitators leave. [--] that these people who come to the workshops share their enthusiasm and share some of the lesson I [--] will come from it but that's because I'm an optimist, not because I'm a researcher, you know, it's just a [--] as far as the Leopold Project goes, there's been any [--] of effectiveness [--] on the student so, and that's what the researcher would do if the researcher ever studied what was happening, what was the impact.

Interviewer: Uh-huh.

Respondent: Effectiveness would be defined by the instrument. So, yeah, there's a whole lots of what's effective and I guess one measure of effectiveness would be whether students are developing an environmental ethic.

Interviewer: And how would you evaluate?

Respondent: [--] would have to be determined. What are the steps involved in this development? [--] components of the LEP. [--] critical component is the word, would be the words of Aldo Leopold. [--] would be modeling [--] educator in that he questions [--] as a source of learning, as well as text and other technologies but, the field would be the central piece. [--] believe in the value of the [--] and its goals which are to promote [--] natural areas and [--] of philosophy. Pheasants Forever continues to see value in what I can contribute so they keep hiring me. [--] fits [--] outdoor experiences and reflecting on them. [--] and loving and respecting [--] the ecosystem and wanting it to continue. [--] that he was a college professor [--] because that was recognized and acknowledged as a college professor. He probably was always a teacher. [--] to make the world a better place. [--] by teaching you do a lot of learning. And so I think the fact that he felt he needed to teach [--] an ethic was, forced him to continuously revise what an ethic was because he always wanted to a better [--]. I think the fact that he was a teacher contributed a great deal. [--] the support for his writings and then with each writing he would [--] on the writing.

Interviewer: Yeah. [_____] . . .

Respondent: [--] the fact that it's never there and never finished. That it's always in development and that it's always shooting higher than you're able to achieve. [--] I think that [--] but feel defeated that we're not accomplishing these high ideas. [--] remember if I included [--] components, a set of guiding principles, I mean principles that help us make selections and choices, so I think that's an important element that has to be [--] we have a whole lot of values and beliefs and feelings and [--] them all out and what, how that is done is through some guiding principles. So that's the [--]. I'll leave you some papers.

Interviewer: Okay.

INTERVIEW #5

Interviewer: All right.

Respondent: [--] pretty broad.

Interviewer: Yes, it is. I'm going to start with some broad questions and then kind of become a little . . .

Respondent: I'll have to figure out a baseline to even start on. You're asking me to define it?

Interviewer: No. Although maybe that is, maybe for some that is part of the definition but . . .

Respondent: Uh-huh.

Interviewer: It's just what do you think are some key components, [_____] telling me components you're telling me what do you think it is?

Respondent: [--] about all aspects of environment, whether they be human built environments or natural systems, which is the hardest one for me because human built environments, to teach about, are boring. Because I'm so connected to the outdoors.

Interviewer: Why did you choose those components?

Respondent: Well, partly not figuring out what other direction to go.

Interviewer: Okay.

Respondent: Maybe defining in my mind what environment was so you, if you could say environmental education, it's education about the environment. Then you have to decide what environments. So . . .

Interviewer: Okay. Okay. All right.

Respondent: You know, then you come down to some personal preference about what kinds of environments, for me, that you enjoy educating about.

Interviewer: Okay. Very briefly, describe an ideal environmental education curriculum.

Respondent: [--] my perspective that would be a curriculum that allowed education in, for and about the outdoors. [--] would be more field-oriented and would encompass everything from family history to natural history of an area. So it would be a complete exploration of that school's cultural and natural history. And then it could move to, from that to other issues but all of that, within all of that circle, framework, you could explore geology, geography, mathematical systems, natural systems of an area, of the landscape of an area. You would have a complete picture by all of the fingers that would branch off of teaching both cultural and natural history. It would be very place-based. [--] might even involve more local family history as opposed to maybe even world history. It would start with the local place.

Interviewer: Do you think that the development [--]

Respondent: [--] yes, it is critical because generally environmental education is the only one educating about the natural systems and, of course, some of my influence from Leopold readings of defining land as all of the water, the soils, the minerals, the flora and fauna as being one complete system, then no one else can even begin to approach a land ethic except environmental educators.

Because no one else, I think, has a focus to do that and I think in order for it to be a land ethic it has to, it's very important that it's going to have to be even more multi-disciplinary and integrated maybe even than some current teaching.

Interviewer: [--] see where I was at, oh, [--]. Define land ethic.

Respondent: [--] think it's a sense of identification. It's an identification of an individual's place within the natural systems, within the earth itself. And I think until you have that sense of place or that you can identify your part of that natural system, more of a biocentric view, you cannot develop a land ethic. And to have that land ethic it would be, I think it's varied for people. I would find for myself that it's based more on looking for ways to maybe step lightly, or step softly. Not in a physical sense but just an awareness of personal conservation, whether it be recycling or turning off the water as you're brushing the teeth, down to some of the simple things that we try to teach. But I think it, that a land ethic, it's not going to be a global think, I think it's a personal thing. Whether it be individual actions or trying to think in terms of, if I do this today what are the effects tomorrow? That if you try to base that on your day-to-day life and life decisions then I think you're living a land ethic. For me it's also self-sufficiency. Trying to maybe prepare food and do some things on your own and not relying on commercial systems. That if I had my preference I would still have a large garden and preserve my own food, like I used to. To me that's part of a land ethic. And more recently, not trying to buy new appliances and things if I can buy a used one that's effective, you know, looking at some of that of well, no, let's not buy a new one if we can repair this one, then let's do that.

Interviewer: Okay. Are there, is there anything else that you would include in this concept of a land ethic besides, in addition to the definition? And if not, that's fine, I'm just kind of giving you an opportunity, is there anything else that you would include [--] concept?

Respondent: Let me think about that a minute.

Interviewer: All right. We can come back to that.

Respondent: Okay, let's do that. Let's come back.

Interviewer: Okay. Do you believe that a piece of literature can facilitate the development of a land ethic and why or why not? And then, if you believe that the literature can facilitate this development, how do you think that facilitates the development? How does the literature do that?

Respondent: Well, I think literature can but I think for the most part person-to-person communication may be more effective and I, I've never thought of it that way. More of a, the parent/child, or grandparent/child mentoring maybe, or maybe our own actions. Now how a person got to that to start with, I don't know. It could be from a piece of literature or it might not. Because obviously we've not always had literature. And I don't think it's fair to say we've never had land ethic.

Interviewer: And if, if you [--] . . .

Respondent: I think it's just . . .

Interviewer: . . . facilitate . . .

Respondent: . . . creating awareness and allowing a person to see other points of view. But maybe it's, maybe that individual's looking for an answer to start with. They're looking for solutions to earth problems. [--] may just be a matter of somebody had to introduce them to it.

Interviewer: [--] back to what else might be included in the concept of the land ethic?

Respondent: Do you have more questions, or is that . . .

Interviewer: I do. I have more questions.

Respondent: Yeah, do some more.

Interviewer: Okay. All right. How would you describe your level of familiarity with the *Sand County Almanac*? When was the last time you read the book and how often have you or do you read the book?

Respondent: Well, I've read the book through, oh, probably, maybe not reading it straight through, but reading completeness whether I start from beginning to end or not . . .

Interviewer: Yeah.

Respondent: . . . probably at least three times. And individual essays or portions of it, more than that. We need to get on the highway, here.

Interviewer: We're going west, east . . .

Respondent: We're going to Madison.

Interviewer: . . . going to Madison.

Respondent: It'll bring back memories.

Interviewer: Let's see. Would you say that you are very familiar, very familiar with it, or do you feel like you're just getting to know it?

Respondent: Very familiar.

Interviewer: What components of the *Sand County Almanac* make it a persuasive piece of literature?

Respondent: Depth of understanding of natural systems by the author. That good interpretation is occurring through literature that's, paints a picture and often poetic. And then it, it poses, provokes thought for the essays at the end. The land ethic itself and the conservation aesthetic. Those are all thought provokers, which, it allows a person to compare where we, where you are today in comparison to where the author was then and that the author can still put you in the same time and place as he was in the reading. When you read it, you will not necessarily think this was long ago, you're in the current, you're in the present. In a hundred years, people may not be because they may not even be able to find the species that were talked about.

Interviewer: Interesting point. What do you believe, this is purely your own opinion, what do you believe was Aldo Leopold's intent when he wrote *A Sand County Almanac*?

Respondent: Well, I think in some ways it was a need to express all of the pleasure experiences at the property brought to him. Sort of maybe his own reflection or way of thinking, some frustrations, with how conservation was going. And I think he wanted to shake up people's thinking. Because you remember, when I said in a hundred years people may not know these species so they

may not be able to identify with a book, at the same time he had started his work in a previous century and he was already seeing at the time of that writing, the disappearance of some species that he referred to. So it, he may have had some sense of urgency. I would speculate that. And then I think he also had a romantic notion of hanging on to the past. He didn't like the automobile. And he didn't like, I, I know one time Nina told us, when they went out there on the weekends, he parked it behind the shack so it wasn't visible from the road. And he really didn't like an automobile. So I think that he was doing his own romantic attempt to recapture the past, the experiences maybe he had out in Arizona and New Mexico. It was sort of, let's go camping and play cowboys and Indians kind of thing.

Interviewer: Why do you think that the LEP is so effective and how would you describe its critical components?

Respondent: Well, you know, interestingly enough, I'm not sure how effective it is. I don't really have any feedback to know how effective is it. All I know is that workshops are being done and maybe some teachers are using it but I don't really know how effective it is.

Interviewer: Okay. What do you think are the LEP's critical components?

Respondent: Well, I think the critical components are emphasizing the essay. The reading of the essays. But early on I don't think the LEP staff had a real good grasp of what teachers need. I think they've come around from that to really work on what do teachers need in a, in a lesson. And I just think that emphasizing the essays are a critical component. If they ever move away from that I think they'll be in trouble.

Interviewer: Anything else?

Third-Person: Deer. See it going across the field?

Interviewer: Oh, I do. There's a whole bunch of them.

Third-Person: There was at least three.

Interviewer: Yeah. Why did you become an LEP facilitator?

Respondent: I had heard about it very briefly, long before we actually went to a facilitator training. I learned about it from, of course, I had gone back to school and had been introduced to reading *A Sand County Almanac* and pushed because of, of Lowell into what all it had to say. Well, not pushed, introduced. And then I went to some interpretive training for the forest service in Estes Park and they were having a Leopold workshop.

Interviewer: Ah. When was that?

Respondent: That would have been in about 1990, gosh, '92, '93? I'm not sure.

Interviewer: Okay.

Respondent: I'd have to think back. It was year or two before we found out about where a facilitator training could be attended. And I already had the materials prior to that.

Interviewer: Uh-huh.

Respondent: From that workshop.

Interviewer: So why did you end up becoming a facilitator then?

Respondent: I think because I had been involved in Project Wild long enough that I was ready for something new. And really believed in what the essays had to say and wanted to try to find a way to communicate that. And I was just really turned on to the essays and I thought, boy, if I can find a way to communicate that, I will. Mostly, in hopes I would get to do the activities. But I've not had an opportunity outside of introducing them in a workshop to do them yet. So that's frustrating.

Interviewer: Yeah.

Respondent: Because they don't necessarily lend themselves to nature center programming. Or I haven't figured out how to do it.

Interviewer: Yeah.

Respondent: They're pretty much, because they are based on reading the essay, how are you going to have a group of people read the essay before coming to your program? So they don't lend themselves necessarily to nature center programming.

Interviewer: Yeah.

Respondent: So that makes it kind of tough.

Interviewer: Yeah.

Respondent: So the easiest way to get that out is to facilitate it to other people or to teachers and you're just planting the seed.

Interviewer: Is that why you continue to be a facilitator? Or are there other reasons why you continue to be a facilitator?

Respondent: Some of it, well, I believe in it. Wanting to pass it on. And some of it, wanting my own niche of doing something different from what everybody else does. Ready for new horizons, maybe. And it was the new horizon. I don't know, I'd have to, to wrestle with that one for a while.

Interviewer: Okay.

Respondent: You know, I, I enjoy the affiliation . . .

Interviewer: Uh-huh.

Respondent: . . . and recognition that goes with being part of it. There's some extrinsic award with that. Being there, being part of it. You know, it, there's some affiliation.

Interviewer: Uh-huh.

Respondent: You know. Want to hang out with a good crowd kind of thing. And then, too, it's always a learning experience. You get to learn something new. The education is a benefit, too. And I think continuing to facilitate also is allowing me to better refine a personal land ethic, you know, as sort of a way of exploring your own land ethic. It's something of, and I'm identifying here, it's going beyond the usual, I want to make a contribution, it's sort of a, an inward quest . . .

Interviewer: Okay.

Respondent: . . . for, I really have to describe it as biocentrism.

Interviewer: Yeah. How would you describe Leopold's land ethic and its key components?

Respondent: Well, I have a lot of biases from having visited with Nina.

Interviewer: Uh-huh.

Respondent: There's many biases with that because we had asked her what she thought, he, where he was going with this, what would he have been doing next? And so she felt that what he was saying to people was to not try to buy the best piece of land, the most fertile piece of land, but to go ahead and buy the piece of land that needed nurturing. The one that needed reconstruction, I suppose, may be one way of putting it.

Interviewer: Okay. How, how do you think that Leopold personally developed his land ethic? I mean, I know we've read the books and that kind of thing.

Respondent: Uh-huh.

Interviewer: What do you seem to understand was . . .

Respondent: Well, personal experience and largely from being that he was a naturalist and that he took the time and the effort to observe constantly. A lot of the management concepts he came up with were because he was sitting out there actually observing what was going on in natural systems. So I think that and his parents' influence of getting him outdoors. And obviously, hunting was a major part, hunting and fishing, of, of that childhood experience for him but I think that overall for him, it came as just from pure observation of what was going on around him, whether it was flora, fauna, soils, water, whatever. But I think it was just the fact that he was constantly curious, constantly observing, and trying to provoke that in other people, I think, is how he came to his land ethic.

Interviewer: You want to go back to the one on any other, any other components of a land ethic?

Respondent: Okay, how, how did it read, start with?

Interviewer: Okay. What is included in the concept of a land ethic?

Respondent: Well, tell me if I'm doubling back onto what I just said.

Interviewer: I will. Hang on just a second. Yeah, I will, I will tell you. Go ahead.

Respondent: Okay.

Interviewer: [_____], okay, we're really down to the last question, so . . .

Respondent: Okay.

Interviewer: . . . I'll ask you simply are there any other elements that are important to include in an environmental education curriculum and I would add to that any other components that you want to include in the concept of a land ethic?

Respondent: Well, I, I don't think I could emphasize enough that environmental education has to truly take the student outdoors. That, of course, this is all very influenced from the weekend. And I think that's the critical element. It's the actual experience. Some of that comes from my training and the philosophy of interpretation, from freedom in Tilden's writings onto Leopold's, that you need direct experience with the actual object to be able to identify anything within your personal experience. So I think that hands-on opportunity in the outdoors is some of the most critical part of environmental education. And other elements of a land ethic, I'm not sure. I see it as an individual who is conservative and tries to live below their means. And, you know, as I reflect, our consumptiveness in this country, I think. is the biggest threat, well not the

biggest, well, maybe it is, threat to our developing a land ethic. I think we have to learn to live below our means.

Interviewer: What about any, is there anything else that you think is important to include in a good environmental education curriculum?

Respondent: Well, I think a good environmental education curriculum is very integrated but it's a holistic approach of involving all of the subject matter and I think it, that a hands-on experience, outdoors where participants just have some time to interact with natural systems. Because no matter what kind of environments we talk about, whether it's the built environment, the, the natural environment, ultimately if we don't develop a land ethic for the natural environment, none of the rest of its going to matter.

Interviewer: Anything else?

Respondent: Nope, I think that's summed up and made me think of a few things I hadn't thought of before.

Interviewer: All right. Very good. Thank you.

INTERVIEW #6

Interviewer: Yeah. Let's see what happens with that. You just have to kind of speak up.
Respondent: Okay.
Interviewer: Speak at it. Okay. What do you think are some of the critical or key components of environmental education? I'm going to ask you some general questions and then more specific.
Respondent: Critical or key components of environmental ed? I'm not sure if I'm, if I know for sure exactly what you mean but I'm guessing that it needs to have an outdoor component, I think, to be fully effective. As far as a field experience, I guess it'd be a more clinical way to refer to it. To go from, ideally, a, potentially an awareness to action, depending on the age of the student. So field experience, what else? Age appropriate. And I'm not sure what else at this point.
Interviewer: We can come back to that.
Respondent: Okay.
Interviewer: Why did you choose those particular components?
Respondent: Oh, well, especially after the conference this week. The age appropriate, I think, would be one, maybe a week ago, that I might not have listed as being as critical but after hearing some of the people like David Sobel and, and all, of knowing what really, kids of different age levels can identify with or fully comprehend at their developmental level. The field component, it's one of those things, if you don't know something, you can't appreciate it or love it or want to protect it. And I'm not sure how, though I think all too often we fall into the trap of trying to teach about the environment without having the kids in the environment. For them, if they don't have an understanding of what's in their own backyard, and an appreciation for it, how are we going to expect them to have any concern or interest in anything else on a, on a real context, it, it's just all abstract to them. So you've got to get them outside. It's too easy to fall in the trap of, and actually it's not even just for kids, with adults, too, it's too easy to fall in the trap of showing them a video about something rather than actually having them do something.
Interviewer: Yeah.
Respondent: So that's . . .
Interviewer: That's why you picked those?
Respondent: Yeah.
Interviewer: Briefly, briefly, I'll underline that. Describe an ideal environmental curriculum. Environmental education curriculum, excuse me.
Respondent: Hands-on. Ideal environmental education. Well, hands-on and then probably (*phone ringing in background*) to go from, to increase an awareness, yeah, you want to turn this off so you don't get my, sorry.
Interviewer: That's all right.

Interviewer: Okay, here we go.
Respondent: Let's see, where were we?
Interviewer: We were . . .
Respondent: I was supposed to be . . .

Interviewer: . . . briefly describe an ideal environmental education curriculum and you, the first thing you said was the hands-on.

Respondent: The hands-on. Again, after this week's conference I like the idea of starting with the big picture and then working your way backwards so that folks can identify with it more readily. Like, Estella talked about. To not, not start at the cell biology range and go the other way but that our curriculum needs to be reversed so that people can have something they can more readily identify with and care about and then want to learn the inner workings of. So I'd, I would think those two components and part of the hands-on would be further to be a field experience part, like I mentioned earlier.

Interviewer: Okay. Do you think, do you think that the development of a land ethic is a critical component of environmental education, why or why not?

Respondent: Actually I think we're to a point that if, if a land ethic isn't a part of education in general, let alone environmental education, we're looking at a short-range future in the grand scheme of things and, you know, I don't know that, I don't think short-range would be as little as 10 years, but within the next 100 years if, if we can't get people reconnected to the natural world, or understand their connection, not just, or, or to realize that environmental education is not its own separate thing that we need to look across the board. Sociology, economics, history, everything ties back into that, and if there's not an awareness and an appreciation basically that land ethic for people to have that connection back to the earth, it's, it's like we're running out to the, to the end of a gangplank and somebody's going to cut it off behind us or we will have cut it off behind ourselves because there's nothing to hold it up. So I, I see a, the need for a land ethic beyond just within an area of environmental education.

Interviewer: In your own words, define land ethic.

Respondent: Ethic. Really a, an appreciation of all the components, of not only the animals, the plants, but the soil and the water. All of those various components and that we are also a part of the picture. That we're not separate from the picture. I think too often in modern society we feel like that we're separate and above from the natural world but every once in a while, as the old saying goes, it's not nice to fool to Mother Nature. Mother Nature reminds us that we can't stop tornadoes, we think that we've controlled floods, and then, you know, everybody's houses get inundated or those kind of things, that, that it's, that it's all those components and how they interrelate with each other. And to have an appreciation for that and to know that everything ultimately goes back to that. Everything meaning all the, all the factors of our daily lives.

Interviewer: Okay. Do you believe that a piece of literature can facilitate the development of a land ethic? Why or why not?

Respondent: I think yes that it can help facilitate it. I don't know that, I don't think that it can do it totally on its own. But it is an important building block of, in the, in the development or for somebody to help with their own land ethic. I mean, it's like not meaning that any one piece of literature, as an example, like *Sand County Almanac*, is the all encompassing book or would be viewed on by most of society as being an equivalent of, of the Bible, not trying to deflate the Bible, but a lot of people look at that one piece of literature as being all encompassing and directing their world. So, yeah, I think I would like at, but as is, as we've seen in the past,

the Bible alone can't, by the way I view it personally, the Bible alone doesn't necessarily a Christian or a good person make. So I don't know that any one piece of literature, but it's definitely one of the building blocks.

Interviewer: [_____] down here. If you do then, believe that it can facilitate this development of a land ethic, how do you think that a piece of literature facilitates this development? How do you think it does that?

Respondent: It helps give direction. It can also help give support, maybe feelings that you've got yourself that it, support or re-enforcement to know that you're not the only one thinking that way. A cohesiveness that more than one person is getting to read or see the same words in, in, so that it offers a, a common script, I guess, for several people to work from. Or a whole group of people to work from. And a really good piece of literature can sometimes be just the thing that somebody needs as, it may sound hokey, but to touch their soul. And help with, with the development or, or the direction of that ethic.

Interviewer: Okay. How would you describe your level of familiarity with Leopold's *Sand County Almanac*? And include in that, if you're, in your description of what you think your level of familiarity is, when was the last time you read the book and how often do you or have you read the book?

Respondent: Oh, I'd, I would look at, using a scale of, like from kindergarten to high school, I figure I'm at about maybe middle school.

Interviewer: Okay.

Respondent: I feel like I've probably been reading on it maybe, I know more than maybe the general public, because of being a facilitator in the program. I've read, I've read parts of it as recently again as last week doing research for an article. And I find that I probably on average read at least part of it, and I wouldn't say that I read it cover-to-cover, but read excerpts from it at least once a month, if not more often than that. For specifically *Sand County Almanac*, at least once a month.

Interviewer: Okay. What components in the *Sand County Almanac* make it a persuasive piece of literature?

Respondent: I think, components. There are so many different, especially in part one, there are so many different things that, individuals can connect with. Everybody may not have cut down a tree but a, and most people have probably gotten to see tree rings on a tree. And so when the talk, or the essay is going back through tree rings, that they can, they can connect to that.

Interviewer: Yes.

Respondent: Everybody can find something in one of the essays that they can connect to. I think Leopold worked on it long enough that especially as you go on into probably the, probably the middle section of the book, that he admits to his own mistakes and how his ideas have changed. And I'm thinking specifically of, of his essay, *Thinking Like a Mountain*, where he tells about the killing of a wolf or when he talks about the change in [_____] of doing in the last grizzly in a particular area. That he admits to his own evolution of thought, I guess. And that you don't have to be stuck at any one area.

Interviewer: Why is that persuasive?

Respondent: Letting you know that it, that you can change, that it's okay to change. That it's intelligent to be, helping to change, I guess. In, in doing that, he, that's part of his

persuasive argument of, of winning people over to changing their perspective towards the land.

Interviewer: Anything else?

Respondent: Well, that's all I can think of right now.

Interviewer: Okay.

Respondent: We might come back to that one.

Interviewer: Now, what do you, I mean, I know that, you know, that you can't get in his head and so on but, just in your own opinion, what do you believe was Aldo Leopold's intent when he wrote *Sand County Almanac*?

Respondent: I've always had the impression he, he, by the time he wrote that book, he'd already seen so many changes in the natural world. From when he was growing up as a boy and that it was still relatively easy to go just across the river from his house and be able to hunt ducks. Well, and, that that was changing. Or that areas that he had gone to when he first moved to the southwest just in a period of a very few years, the change that had happened because of the management, or lack thereof, that was being done on areas with over grazing, or over, over cutting of timber. And that in that short period of time seeing those kind of changes take place, he realized we weren't leaving anything for future generations. And so I think as much as anything it was to be almost like an alarm bell to wake everybody up to say, look, look what we've done and what we're in the process of doing. We've got to figure out how to do something different so that we don't keep going down this road. The first quote that I ever saw of Leopold's was, you know, to paraphrase it, of what's the use of growing up in country without a blank spot on the map? And that we were running out of blank spots. And would have probably run out of blank spots long before this if it hadn't of been for people like Leopold and some of his contemporaries that said everything doesn't have to be developed.

Interviewer: So it's really, he, think he probably wrote it as a warning to let people see what he had seen and so on.

Respondent: Well, it was, it was a warning, yeah, but I think also, I don't know, maybe a candle in the darkness to let us know that, to not throw in the towel. I mean, that's using a lot of cliché phrases but, but I think a lot of times, yeah, that's sometimes the easiest way to give the example that we could still change. Our attitudes towards things had changed from what they had been previously and I'm thinking in the land ethic when he's talking about the slave girls and an attitude then to where it's, what it was at the time he wrote that. I mean, so, it was a warning, but it was a warning with the idea of, that we can, that we can still change. That there's, a warning with optimism, I guess, would be the shortest way to say it.

Interviewer: All right. Why do you think the LEP is so effective and how would you describe it's critical components?

Respondent: Oh, the number one thing I like about LEP is that first and foremost, it's getting people introduced to *Sand County Almanac* that might not otherwise ever hear about it. That it's putting it into a context that teachers could be comfortable with sharing it with their students. It, it's helping them add not so much an additional depth but a easier way to fit it into the requirements that they have to meet for standards and that sort of thing of something more quantifiable within the

education system than if they were just having their students read the essays. So it helps, helps the teachers present the book to their students.

Interviewer: Would you say that is the critical components then, of the program?

Respondent: Yeah, probably, as it stands now and, and not only getting people introduced to the book but of, of who Leopold was and why, why and/or how he came to write the book. And, and I say, as it stands now, because I would really like to see, I'd like to see the program have more activities and, and go beyond just the first part of the book. Because that's the, right now we're opening the door. And I think as we get the, have more activities, it helps then get people through that door. Right now we've opened the door and they're looking in. I guess is a way to give the symbolism to it. The door's been closed to them. Now it's potentially opened but now we've got to have them step on through so that then they can then finally get to the land ethic part.

Interviewer: Okay. Why did you want to become an LEP facilitator?

Respondent: I saw it as a vehicle to be able to get people introduced to *Sand County Almanac*.

Interviewer: And why do you continue to be one and want to be one?

Respondent: It seems to be working. It's maybe not working on as grand a scale as I'd, you know, like to have, tomorrow to be able to say everybody's already read *Sand County*. You've got to be a realist, too. But it seems to be working. It's, it's taking it's baby steps. And it's one of those things you've just got to keep chipping away at it. But it's a way to do it. I like the people that I've met through the program, too. It's offered a, a good connection, an additional way to network.

Interviewer: Okay. How would you describe Leopold's land ethic and what its key components are. Kind of in the whole, in that whole question, which we've really talked about these things but in looking at how you would describe his land ethic and its key components, how do you think that Leopold personally developed his land ethic? I mean, I know you've read the book [_____] and so on and as you do that, you're kind of synthesizing all this information about him and you know, how Susan Flader describes it and so on. But how do you think he personally developed this land ethic of his?

Respondent: I think he had finally gotten to the point, oh, that, to not only look at the, the abstract of it, of what he considered to be, and as he called it, called it collectively, the land, but to also try to have a positive impact on that. I'm thinking, you know, why, why buy a piece of property that is obviously all used up, I guess, would be a way to describe it. Like the property that he bought at the shack.

Interviewer: Right.

Respondent: That you, if you want a place out in the country, you don't go find the prettiest and the one that's in the best shape, like most of us may have a tendency to do. You go buy that piece of property that somebody else has used up and cast aside and work on bringing it back. So his, his land ethic got developed to the point that he put it into action. I'm not sure if that quite answers the question but.

Interviewer: Well it does. And think a little bit further on how this happened. How this took place and he got this abstraction of the ethic and, but then he turned around and put it to practical use by the work that you said he did on the shack property.

Respondent: Oh, well, I think it was an ongoing process. In, in, you know, some of the studying over, especially the last three years, where, where people that I've gotten to hear that had even studied him in more depth. Like that Curt Meine said that

he doesn't, he didn't think that Leopold would have been able to write the essay as we know it of the land ethic until after World War II. And that it really put to a global perspective the whole thing of what was being done to the earth and, and what we were doing to ourselves with the World War and the impact that that was having, he, that Leopold had visited Germany and had seen what a, a too meticulously, too artificially managed forest was like when it no longer had any wildness in it. When he had gotten to go and visit places and see what it looked like before it had had an ongoing human impact and to see that held up to what he had been working with on a daily basis of realizing that we had to change how and what we were doing. Ah, so, it, it was like each one of those was a stepping stone towards him being able to come up with this, the view of, of a land ethic. That it was, it's not just the forest, you know, he grew up being trained as a, or, not grew up, but in college was trained as a forester and that you just looked at the forest. Well, and then he realized well, you can't look just at the forest because the wildlife's a component of it and you can't, I mean, but each one of them has so much impact on the other and so it's for us to get away from this idea of that you look just at any one piece of that puzzle but they all have to be there.

Interviewer: Is there anything else that you would like to add? Any elements that you think are important to include in an environmental ethic, environmental, excuse me, education curriculum or in components of a land ethic? Something else you want to add that you've thought about since we were kind of talking.

Respondent: Well the whole idea of an environmental education curriculum. More so than it seems like any other area, goes across the curriculum. That you can't talk about environmental education without bringing in history, without bringing in economics and sociology and, because they're all factors of it. It's not like you could go to a math class and all you talk about is math. Environmental education is going to be across the board because those are all factors. And I think unfortunately with so much of our education in the past we've . . .

Interviewer: I know.

Respondent: I think for too long we were into this idea of, of putting everything into small categories. And, and not being interdisciplinary. That we were trying to make too much of, I mean, you used to hear about somebody being referred to as a Renaissance man because they did everything. Whatever happened to that?

Interviewer: Ah.

Respondent: I mean, I realize you have to be, there's so much more knowledge now in a lot of ways than what we used to have when you'd refer to someone as a Renaissance person.

Interviewer: Yes.

Respondent: But why couldn't we go back to some aspect of that view of everybody being a more total person.

Interviewer: [--] there it goes. It's okay.

Respondent: [--] think if there was any other components. Not, you know, of course, not anything that's coming to mind.

Interviewer: Okay.

Respondent: Or other aspects of the land ethic.

Interviewer: You had, you were ending up with the comment about the total person . . .

Respondent: Yeah, the total person . . .

Interviewer: The need for the Renaissance approach.

Respondent: Yeah. And that, and that's not saying you're expecting that, you know, everybody's going to know about quantum physics or, we need things like that but I think we've gone so much to the direction of somebody being a specialist in a particular area that we've forgotten how to do even other simple things. What I would consider simple things in daily life. And I guess that's kind of, that's somewhat aside from the LEP of why I've got the interest in doing the workshops like an outdoors skills training. So that people if they break down at the side of the road and sure, they can't fix their own car, but they could know how to survive being in bad weather until somebody can fix their car or those kind of things. Because we've gotten so removed from the natural world or from a land ethic of a connection to the land that we have no clue if we don't go from our air conditioned home to an air conditioned car to an air conditioned office, if that chain gets broken somewhere along in through there, a lot of people don't know how to survive. And that losing that connection to the land is part of that problem. At least for the way I see it personally.

Interviewer: Yes.

Respondent: And there's, there's a lot of other readings that I feel like through the years have helped reinforce other authors. I, you know, I, this past week we've heard a lot of people mentioned Thoreau, actually I don't go back to Thoreau as much as I do some, some other authors that I really connect with.

Interviewer: Who else comes to mind?

Respondent: John Madson. John [_____]. Because of reading, or writings, that they've done have meant a lot to me.

Interviewer: I've heard about [_____].

Respondent: A connection to the land. It was like that they, it was almost that they didn't go into the philosophical look of a land ethic like Leopold did in *Sand County* but they were still presenting a land ethic because in their writings that they did it was still like connecting to the land. All of, every one of their books that I read that I so liked, everyone of them was giving that, that link, that connection to the land and to understand all of its components and how we fit in the picture. That we're a part of the picture. And, trying to think if there was any particular, one book that, especially when I was first in college, that I really liked, and it's actually a collection of quotes and some Leopold quotes were in there, too, was a book called *On the Loose* that was put by Sierra Club. So I think there's, there's a lot of ways to help draw people's attention.

Interviewer: Okay.

Respondent: But I feel like I was fortunate that I got to have a lot of time outside to realize changes in seasons and maybe not know the name of some things but to still realize that different birds were out there, or were, you know, different things so that you felt like that you were out there and, you know, part of the whole thing, the whole scheme.

Interviewer: Sounds good.

Respondent: Okay.

Interviewer: All right. Thank you ma'am.

INTERVIEW #7

Interviewer: Okay, let's see here. It's obviously working. So, I'm going to just go through these questions . . .

Respondent: Okay.

Interviewer: . . . and you respond and just, I'm going to take it all down. I'm taking notes at the same time, so, I am listening as well as recording, but I like to write down comments that you're making. Kind of punctuate them here on the paper to go along with the tape.

Respondent: Okay.

Interviewer: What do you think are some key components of environmental education?

Respondent: You're asking what are some key components . . .

Interviewer: Yeah, what do you think are some key components. I'm going to ask you some general questions and then some that are a little more specific. So I'm going to start . . .

Respondent: Okay. Well, I think there, there are several key components. One is, is a, a, is a knowledge base of what constitutes the environment we live in, you know, from, from a, a total perspective and, and understanding that things like, you know, the water cycle and, and why the sun's important. And, and what we do that affects the environment. And another component, I think, is, is an emotional, a connection component where we not only know but we, we understand what the forces are. And how those relate to one another and what impact we have. And then I think a third component is one where we know we understand and we care. So we've developed, you know, a, a consciousness of, that we have a responsibility that, that we're, that we're part of it and, and what that role is and that we, we can, you know, do things to make a difference.

Interviewer: Okay. Why did you choose those components?

Respondent: Your question is why?

Interviewer: Yes. Why? Why, why did you choose those? You described what they were. Why did you choose those particular components?

Respondent: Well, I guess I'm looking at the big picture which I tend to do more because, you know, I'm not a scientist by training. And, and so I, I, I look at, at the whole thing and if we're going to make a difference with environmental education we've got to, we've got to, to know and understand and care and that, you know, act accordingly. And so I see it as one kind of great big package rather than, I guess, for, you know, specific or individual components.

Interviewer: Okay. Okay.

Respondent: I see it as a human problem.

Interviewer: Say that again?

Respondent: I see it as a human problem.

Interviewer: Ah. Okay. Why is that?

Respondent: Well because I think that, that if people weren't inhabiting the earth that it would do just fine.

Interviewer: Uh-huh.

Respondent: I think that, that population and people and our needs for resources and all of that are what has the made the difference with this planet. And I don't use the words save the earth because I think the earth will save itself. I think it's really civilization as we know it that we're trying to save. And many of us are trying to save lifestyles that we've grown comfortable with which, you know, is understandable. But the whole thing is, is, you know, it goes back to John Leopold, you know, we're, we're one living organism and, and we're here and we're an important part of it but I think we need to understand how we are and what we're doing to affect the earth and what changes, if any, even small ones, that we can make to, to help diminish the impact that we're having.

Interviewer: Ah. So you're a proponent of the GAIA?

Respondent: Well, I, I'm not of the, yeah, yeah, I think I am. Without, without, you know, having a huge understanding of that. I've read some about it and yeah, I would say I probably lean that way.

Interviewer: I, I, I tend to be that way and, and it's kind of interesting when you tell somebody that, those from the hard science area they either really agree or they totally disagree.

Respondent: Yeah.

Interviewer: And then those who are not from a science background kind of, the idea is well, that sounds a little too weird for me.

Respondent: Yeah.

Interviewer: And so it's interesting. I come from the biological background and to me it makes perfect sense but that's, I mean, it doesn't mean that I buy into every one of the versions of the GAIA theory, you know. They go back and look at what love said and so on. There's, there's some interesting aspects but it certainly does seem to make sense particularly when you start seeing the things that are happening. I was just curious about that. Let me see. Next question. Do you think that the development of a land ethic is a critical component of environmental education? Why or why not?

Respondent: I think it's a very critical component. And I think it's one that is endangered because of lifestyles. Because people are moving further and further away from being in any way connected with the land. And I'm a firm believer that unless it affects us personally or is in our backyard that we are not going to engage. There's just too many things in this world that are pulling us in too many directions. And so it's critical that people have some understanding of the land, of nature, of the, world outside and then your [_____] world, you know. And they, and they really are less and less. Because they, you know, our lives have just pulled us away from that. And so, you know, I think we have to define land ethic in a different sense than Leopold even would. Because people's lifestyles have changed so much. You know, we've got to get to somehow planting a garden or, or doing something in the backyard or

having their kids engaged, because they get engaged, you know, in ways that they begin to, to relate to and then when they relate to I think we can start to develop that, that sense of an ethic but if we can't get them to relate to it, it's just not going to happen for them.

Interviewer: Okay. I'm writing a couple of things down here.

Respondent: Hello?

Interviewer: Yeah, I'm here. I'm here. That was just, I don't know what that noise was. But, briefly describe an ideal environmental education curriculum?

Respondent: Oh, jeez. Okay, you're talking to someone who's not been in, directly in that field for about three years now.

Interviewer: Uh-huh.

Respondent: So, I, I'm . . .

Interviewer: That's all right. That, that's, it's, it's your opinion that I'm most interested in.

Respondent: Okay. I think it's a process. That the curriculum needs to be a process. And at the early years it needs to be a discovery process. Where kids are learning to explore nature, the out of doors, to ask questions, you're building on their curiosity, you're building on their fascination with, with bugs and snakes and turtles and you're helping them discover all the wonders of nature. So it's a discovery process and an exploration process. And it doesn't need to be much more than that in the real early years. Then I think when you move them up into like for elementary, middle school years, then I think it needs to continue to be an exploration but now you're starting to add in the basic knowledge, you know, component and you're starting to teach them about things. But I think for it to be successful you're teaching them with as much hands-on experiential learning as possible. But you're, you're adding in, you know, the, the science and, and, and you're starting into the biology . . .

Interviewer: Uh-huh.

Respondent: . . . and you can also use it with, you know, language arts and other things. By the time you get to high school, I think the curriculum needs to change again and it, the focus becomes more, I think one of, of community and what, what can students at that level do. What affects them and what can they do in, in learning now at, at, you know, higher lever. How can they integrate that into the things that are important to them. Into their lifestyle, into their community. Can they get involved in some social action in the sense that they'd be running a recycling campaign? Can you get them involved? So that it's going to be something that's going to involve peers, involve, you know, the places where they hang out, the things that are important to them. And you continue adding to that knowledge base but from an environmental standpoint you start, you try to get them involved in ways that can make a difference. Down the lines, where they can see, that they can start a project and do something that will benefit their community, in ways that are helpful or, or not impact their lifestyle dramatically, you know, but be something that they can feel good about. And so it's a process from the early discovery and exploration through building knowledge but continuing to explore you're

actually putting things that they've learned to use on those, at that high school level.

Interviewer: All right. Sounds pretty good for somebody who felt like they hadn't, had been out of it for a while. In your own words, define land ethic.

Respondent: Okay, let me think just a second.

Interviewer: That's all right. Take your time.

Respondent: I think a land ethic is where we go back to the term where we relate to, we relate to the land and I need to define that more, more carefully. We relate to something in nature that is important to us in a way that we accept responsibility for taking care of it. And I'm going to, I'm going to leave it at that and know that's kind of simple and vague but I think that's a realistic land ethic. And you can get into the fact that, that it, you know, involves all of the organisms and all of the part of it, you know, which Leopold talked about. But I think, I think it's where we, we really do relate to and take responsibility for. And that can be as simple as, as your backyard to a park that you've enjoyed to a beach, to a stream, to, to land that you own, but where you truly want to take care of that and understand it you do something responsible to maintain it. You know, to help it survive.

Interviewer: Okay. What is included in the concept? Now you just defined it, and this may sound redundant, but think for just a moment. What is included in the concept of a land ethic? If you look at that definition you gave me there, there are concepts that are within that and, and can you pull those out or separate those from your definition?

Respondent: Tell me if, if I'm using the word concept here as you want.

Interviewer: Okay.

Respondent: Well I think one is, is, is relationship with, responsibility towards, understanding of. Are those concepts . . .

Interviewer: Yes. Yes.

Respondent: . . . that you're, yeah. But those are the key ones, I think, that I would, would put out there.

Interviewer: So what, like you said, I'm just going to repeat what you said, make sure I have this down. Relationship with, responsibility toward, understanding of.

Respondent: And responsibility to.

Interviewer: Yeah. Relationship with, responsibility and understanding.

Respondent: And understanding of.

Interviewer: Yes. And you're, and you're referring to the land in the broadest sense?

Respondent: The, the land, or as, or as, yeah, the land or the part of nature that you picked. Like I say, it could be a park, it could be a stream, it could be a favorite place.

Interviewer: Uh-huh.

Respondent: It could be a, a piece of land. I'm defining this real narrowly because if you looked at land ethic in a bigger sense you'd see it as the world or whatever.

Interviewer: Right.

Respondent: I don't think people see things that way.

Interviewer: Yes.

Respondent: Leopold cared about, I mean, his basis of study was that farm.

Interviewer: Uh-huh.

Respondent: That he worked to restore. And yeah, his knowledge went much broader and his work in the southwest, you know, all had contributed to it.

Interviewer: Yes.

Respondent: But he had chosen that as his field. When we talk about a computer specialist, you know, working for a company, they don't have the background. The only hope I think we have of, of, of connecting them to any kind of a land ethic is to have them find something that's special to them.

Interviewer: Yes.

Respondent: And then, and then, and then in understanding that thing that's special to them. Protect it. Bigger. I don't think we'll get them to take the big picture and bring it down to a little picture. It's got to go the other way.

Interviewer: I see.

Respondent: You know, you've got to first get them to relate to something. I don't think people nowadays, they're too overwhelmed with global warming and, and, and other issues like that to really understand or relate to it. But if you can take it down to something that directly affects them or to something that's a place that's important to them, and, then that you can begin to translate that to a bigger picture but they've first got to understand, care about, take responsibility for something, you know. Or just care what happens . . .

Interviewer: Yes.

Respondent: . . . to that. You know?

Interviewer: There's the, there's the rung, or the key. Whichever way you want to look at it. I'm making a quick note here.

Respondent: I'm, I'm afraid I'm a real pragmatist on a lot of this. Because I just, I just see people too caught up in things to care about big picture stuff.

Interviewer: Yes.

Respondent: It just, it doesn't affect them, it's too big. So we've got to get them to care about some of the much smaller and closer, you know?

Interviewer: Well, if we all took care of our own backyard, we'd be in a lot better shape, wouldn't we?

Respondent: Yeah, yeah. And, and, you know, there are a lot of ways of doing that.

Interviewer: Well you bring up some good points and that's kind of behind, that's one of the, I don't, I don't want to call it a hidden agenda, but that's part of the implicit, if you will, agenda, of designing curriculum. What's going to be effective? Well you have to look at where the people are. And I don't know if you saw the article that was in the *Parade* magazine Sunday?

Respondent: No I didn't. Oh, yes, on water. Yes, I did, and I read it.

Interviewer: And I don't know how familiar you are with Paul Simon?

Respondent: Only a little bit. I mean, I was from Illinois and I know him as a senator.

Interviewer: Yeah. Well he's written some interesting pieces and sometimes he will tend to, this is an interesting article, because sometimes he will tend to write for the wise-use side

Respondent: Uh-huh.

Interviewer: And so this was an interesting writing for him and I was discussing it with one of the other graduate students yesterday in Stillwater and they were saying, well, you know, there wasn't a whole lot of science in that and I said, you're right. And it was kind of scare tactics and that may or may not be a positive thing for people to relate to. I sometimes think, you know, as soon as we told people here in Oklahoma they had to water ration the consumption of water shot through the roof.

Respondent: I, I tend to, you know, reading that article, I had, I, it reminded me of some of the stuff National Wildlife Federation used to put out.

Interviewer: Uh-huh.

Respondent: And I was sitting there reading it to a very, to my very conservative brother who was visiting from Illinois . . .

Interviewer: Yes.

Respondent: . . . who's a Rush Limbaugh fan.

Interviewer: Yes.

Respondent: And, and, and he listened and he didn't say anything. But I, but as I was reading it to him, I thought, I expect him to come back and criticize me for this because it, it seems to me like it is scare tactics. Now he didn't. But, but I think it was, yeah, it was, there, there wasn't much to back it.

Interviewer: No. It was his opinion and he, and he readily said that, well, he no longer has access to those figures since he's not in the, in, in Congress anymore. Not in the Senate, so. But it, it is, there's a lot more to that article and kind of, I think that it speaks to where we are and as a country in trying to even understand or acknowledge, you know, that there's a problem because he really didn't focus on all the other countries but the United States until the last when he made the comment. He made several comments about well, let's look at what's happening all those other places, we're headed the same direction if we're not careful, so.

Respondent: Yeah.

Interviewer: Interesting, interesting little article. I made a copy of that for, for Lowell. I know you don't know Lowell, he's somebody you need to meet, he's an interesting person and our committee chair. Anyway, back to where I was. It's so easy to get off on some of these current things along with it. Do you believe that a piece of literature can facilitate the development of a land ethic? And then why or why not?

Respondent: I think it can if it, if it's accompanied by, by other things. If it's accompanied by, you know, activities and experiences that, that reinforce, you know, reinforce being involved and, and doing more than just reading. I think that if it's just reading that it, it may reach a few students, those who, who learn by reading . . .

Interviewer: Yes.

Respondent: . . . but it's going to miss a lot of students if that's not the main way they learn.

Interviewer: Ah, okay, okay. You're the first one to point that out. That's, that's interesting and makes sense. Anything else on that?

Respondent: Pardon?

Interviewer: I didn't mean to cut you off, was there . . .

Respondent: No, no. I just, I know that, that, that I, I'm much more a [_____] learner and, and an auditory learner than I am, you know, a reading.

Interviewer: Yes, yes.

Respondent: And so, if that were just handed to me to read I doubt that it would have much effect.

Interviewer: I see. Okay. So that, that really kind of answers the second part of the question where if you believe the literature can facilitate the development of a land ethic, how do you think that it does this facilitation? How does it do it? Is there something else that you'd like to add to that? How do you think a piece of literature helps or facilitates, let's say in this case, the development of a land ethic? But it could be anything.

Respondent: Well any, any piece of literature is, is from, is one person's point of view.

Interviewer: Yes.

Respondent: So in that sense people who read it are gaining a, a different person's perspective. You know, and it may be very different than anything they've encountered. In the case of *A Sand County Almanac* it's a beautifully written piece that, that, that really helps you understand one person's experience with nature, love of nature, you know, the study of nature. And, and I think that that's valuable. That alone, though, is going to have I think a very short effect. You know, people are going to read it and say, well, that's me and some people may say I'd like to do that but I think most people won't particularly relate to it beyond it being one person's experience and it will be lost fairly quickly unless it's, you know, backed up with more personal kinds of experience.

Interviewer: Okay. So you're saying the personal as being experiential?

Respondent: Yeah.

Interviewer: Okay.

Respondent: Or in some way, you know, carrying it forth. I mean if they turned around and wrote it, wrote a book themselves, you know, from their perspective, then I think that would reinforce their thinking about what they've read, you know, at least.

Interviewer: Uh-huh.

Respondent: I'm watching a hummingbird at the feeder.

Interviewer: Ah.

Respondent: And, but, but just to read, I mean, I read lots of books . . .

Interviewer: Uh-huh.

Respondent: . . . and for a few moments or days or even longer, parts of those books stay with me.

Interviewer: Yes.

Respondent: But eventually they don't. I mean, you know, I lose, I may remember them, I may say, oh, that was a good book but if you ask me how did I change my life or what do I remember, it fades, you know. And, and almost isn't there after a while.

Interviewer: Yes, yes.
Respondent: Unless you reread and reread.
Interviewer: Yeah. Have you read Daniel Quinn's *Ishmael*?
Respondent: I have heard a lot about it and I want to read it but no, I haven't.
Interviewer: It, when you, it's, it's a very quick reading book and he wrote a series of books after that that relate to it, the story of being and then finally *My Ishmael*.
Respondent: Uh-huh.
Interviewer: And they're intriguing books. I ended up using *Ishmael* in my environmental science class with my seniors in high school.
Respondent: Oh.
Interviewer: And when they read it, they would get angry, some of them. And that's all I'll tell you.
Respondent: Okay.
Interviewer: It is an intriguing book and some people will read it and go, uh, right. And other people will read it and, to me it's very much an allegory.
Respondent: Uh-huh.
Interviewer: And so I, that, that, and I don't really want to tell you anything more than that.
Respondent: I had a couple of friends read it and they also heard him at the NAAEE conference out in . . .
Interviewer: Yes, I would have loved to have heard him. What, what did they say?
Respondent: They enjoyed it.
Interviewer: Yeah.
Respondent: They enjoyed both the book and, and him.
Interviewer: Yeah.
Respondent: And I could borrow the book from one of them and I, I'll do that.
Interviewer; Yeah. And, and you don't have too necessarily read *Ishmael* first but I think it's helpful. It puts other, if you go ahead and read then *Story of B* and then *My Ishmael*, it should be read in that order, mainly for effect. But I think that you'll, it would be interesting to know what you think about it.
Respondent: Yeah. I would, I will do that.
Interviewer: I'm always, my son, the one who has the degree in philosophy is the one who told me about this book years ago. And when I read it I then turned around and immediately put it into the curriculum. So, and I know it affects different people different ways. Somebody, some people, some, there are people who will read it and they go, uh, you know, just like I said, right. And I think, and this is just my opinion, my personal opinion. I think that they have read it very superficially . . .
Respondent: Uh-huh.
Interviewer: . . . and they, and they either didn't want to or just at, maybe at that moment in their life when they're reading it, that's all they, they wanted or got out of it.
Respondent: I just, I'm most of the way through *Woodswoman III*.
Interviewer: Ah.

Respondent: That Luann gave me and I have thoroughly enjoyed reading that.

Interviewer: Yes, and I need, I have that too, and I need to read it and I've just been so buried with what I'm reading having to do with this, which is also interesting to me, I'm, it's fascinating, but I haven't gotten into some of that pleasure reading.

Respondent: No. You will enjoy it though when you get a chance. It is, it's a neat book.

Interviewer: Let me ask you this. Next question. How would you describe your level of familiarity with Leopold's *A Sand County Almanac*? Such as when was the last time you read the book and how often have or do you read the book?

Respondent: Well, I just read it again this summer and I'm rereading a couple of essays right now because I'm writing lesson plans for [_____].

Interviewer: Ah, yes.

Respondent: I just, just yesterday faxed to Matt lesson plans for *Thinking Like a Mountain*.

Interviewer: Yes.

Respondent: And so, I, I don't, I don't read it that, that often but I take it out and read parts of it probably before every workshop that I do.

Interviewer: Yes.

Respondent: And, and that, you know, that helps, that just helps get me back in, in tune with it.

Interviewer: Yes, yes. I read it again before I went up to the conference just because I thought well I need to refresh my, you know, my memory.

Respondent: I discover something new every time I read it.

Interviewer: Yes.

Respondent: Because I, I really, but then one of my concerns was this, and I haven't said this to a lot of people, but I think Leopold's writing, and you've worked with high school kids so you probably are much more aware, I mean much more, you know, can speak to this more than I can but I just think it's a book that, that is difficult for probably most people.

Interviewer: Uh-huh.

Respondent: Because of his vocabulary . . .

Interviewer: Yes.

Respondent: . . . and because they are, because most people didn't [_____] with that experience, you know. And, and I worry that when we, you know, and I think we should, I, I'm thoroughly in favor that we always try to, to, to get, to work with this program and get kids to read it but I worry as to whether or not they're able to relate to it as kids.

Interviewer: Yes. And that gets back to your point about it's got to be something that we can make personal. That we can internalize, so to speak.

Respondent: I, in high school, if somebody had handed me *Sand County Almanac* to read, I don't think I'd have ever gotten through the, probably the first chapter.

Interviewer: Uh-huh.

Respondent: Because I just would have gotten lost in, in it. I wouldn't have understood it. Because as I reread it as an adult, each time I read something in it I understand it a little bit more.

Interviewer: Yes. Well . . .

Respondent; And I see something, you know, I hadn't seen before and it makes sense then. You know, I mean, he's not an easy read, is what I'm saying.

Interviewer: Yes, yes. I think you're right. I had a student choose to read, they had to pick a different book to read that had to do with, with nature somehow. And that some picked McKibben's *End of Nature* and this one girl who grew up on a farm chose *Sand County Almanac* and she loved it. This was senior in high school.

Respondent: And could she relate to it?

Interviewer: She could relate to it.

Respondent: Good.

Interviewer: There were things that, and I think that's one of the key things, that just starting off, she could relate to it because she had some similar experiences. Just being on the farm, being on the land. She rode horses, so she would find herself out in areas and looking at the natural land. And I do think, I agree with you, I think that's very difficult for our city kids unless there's some kind of concrete activity that literally has them in contact with the land that it may be very difficult. They haven't had, they don't have those shared experiences.

Respondent: And you, if you take an urban kid and I mean, gosh, you know, unless they have a huge command of the English language . . .

Interviewer: Yes.

Respondent: . . . and, and just an interest, I just, I think we're going to lose them pretty quick with it. Unless we, we do some things that make it kind of come alive.

Interviewer: What I think, are you, are you familiar with the Vine Program?

Respondent: I know a little bit about it but I honestly don't know much. I've talked to some of their people once upon a time.

Interviewer: Yeah, what you're trying to get, you know, more people to have those experiences. on to the next question, Let's see. What components in Sand, in the *Sand County Almanac* do you think make it a persuasive piece of literature if, indeed, you think it's persuasive?

Respondent: What components make it persuasive? Well, I think the enthusiasm of the writer. Because he, he catches you up in, in what he's saying and what he cares about.

Interviewer: Uh-huh.

Respondent: And, and I think, I think that, I think that's a large part of it.

Interviewer: Okay.

Respondent: The vividness of his descriptions.

Interviewer: Ah.

Respondent: Make it persuasive. The subject does, if you're interested in it. If it doesn't, then it probably is, I mean, if you're not, then it probably doesn't, you know, it isn't persuasive. But just even if you're, if you can't relate to a whole lot, just the enthusiasm of the writer and the vividness of his descriptions.

Interviewer: Okay.

Respondent: Are probably it's strongest qualities.

Interviewer: Okay. Okay. What do you believe was Aldo Leopold's intent when he wrote *A Sand County Almanac*? And that, I realize this has to be from your

perspective, you can't get in his head but what do you think was his intent in writing this?

Respondent: Well, I, I think originally his intent was merely to, to keep a journal. To record the things that he was seeing. I doubt that he started out in the beginning when he was doing this saying, this will be a book. I think he just was, he was a wonderful writer. He loved to write. And he loved to observe and study nature and the two he put together in a journal form. And I think just the shear pleasure of recording and writing and, and thinking, was, was probably his, you know, a pretty selfish reason in the beginning.

Interviewer: Uh-huh.

Respondent: You know. It was the way he, he related to things and, and, and how he thought things through. I think it's probably the journal as the, as the entries grew, as the essays grew, as things were published, I think he probably began to see that he had something that was, you know, a piece of work that, that could contribute something. That could help people better understand some of his thinking and his philosophy. And, and so it evolved, you know, into, into something that, that was wanted to get published. And, and then his purpose there, I think, was just to, probably to, to raise awareness and to get ideas across. You know, very careful of what, what, you know, to, we all have that, that sense of, of at times wanting to, to leave something behind and, and, you know, this was a, oh, a, what I want to say, this is a compilation of, of a lot of his life.

Interviewer; Yes.

Respondent: You know. And so it became something that he could leave behind and contribute. And I think it was only the beginning of what he thought [_____], you know, quite a bit of writing. It just never happened because, you know, he died.

Interviewer: I find that so intriguing because I, I know that he was having some health problems. And I sometimes wonder if that maybe didn't contribute to the way he wrote some of the things that he wrote, just in case.

Respondent: Yeah.

Respondent: And I think the book was a continuation of his teaching.

Interviewer: I'm making a note here. I'm writing down the book was an extension of that. I'm, I'm . . .

Respondent: Right.

Interviewer: . . . trying to paraphrase what you were saying.

Respondent: Yeah. It was just, it was an extension of his teaching. Born, born from his love of writing and journaling, you know?

Interviewer: Yes. Yes. That's evident that he, I love to read what he says, because one of my favorites is when he goes out with, you know, the red lanterns?

Respondent: Uh-huh?

Interviewer: And he goes out with the dog and he's putting thoughts into the dog's head or what the dog must be thinking because he's not paying attention to what he's supposed to be doing in, in hunting. So I thought that was, I like the way

he thinks like that. Now we're going to go the Leopold Education Project itself.

Respondent: Okay.

Interviewer: Why do you think that the LEP is so effective and how would you describe its, meaning the LEP's, critical components?

Respondent: Well one, let me say something here.

Interviewer: Sure.

Respondent: That's going to seem like hearsay. But we don't know it is effective, I don't believe.

Interviewer: Okay. All right.

Respondent: Because there's not been a lot of, I mean, it depends on what we're defining as effective here.

Interviewer: Yes.

Respondent: And if we're talking about effective in that teachers are adopting it and using it, yes, I think it is effective and I think it's effective for several reasons. I mean, it's, it uses a classic piece of literature, it reaches out to a language arts base as well as science. It, it, it speaks to something that, that people are interested in. It's well done. Is it effective in, in developing a land ethic? I don't think we have a clue.

Interviewer: Yeah.

Respondent: Partly because I don't think the project has really gone out to assess that and partly because I'm not sure you can assess it. So I guess I need to preface . . .

Interviewer: Sure.

Respondent: . . . it with that. And then what was the second part of that?

Interviewer: What you would describe as the LEP's critical components?

Respondent: Well, I, I think I covered that a little bit in that, that the reason I've always been attracted to it, as opposed to other national programs, is that it does use a classic piece of literature and I don't know of any others that do that. And, and it deals with high school level and language arts, you know. And we've traditionally gone to science and biology. I think it's more across, more multidisciplinary than a lot of those other ones. And I think it really does allow students to get into more critical thinking. A lot of this, the other projects are action-oriented, activity based. And I think that's great. And remember we were talking about junior high and I think in junior high, elementary and junior high, that that's really important. I think by high school you can begin to challenge kids much more deeply and, and I think that this really does allow for development of critical thinking skills. Of assessing a piece of literature. That's a tough question. Just thinking philosophically. Of, of delving inwards to, to, to a, you know, determine their own views on things. To research.

Interviewer: Would you say . . .

Respondent: To ask tough questions.

Interviewer: Would you, would you say reflective? Is that a correct word to use?

Respondent: Yes. Reflective is a good word.

Interviewer: I have to be careful. I don't want to put . . .
Respondent: No.
Interviewer: . . . when I, when I use things I have to be careful about . . .
Respondent: Sure.
Interviewer: . . . what I paraphrase and what I quote verbatim.
Respondent: Sure. No, reflective is a good word. But I, the key here is, is critical thinking, too.
Interviewer: Yes.
Respondent: You know, I, it just, it does that very well.
Interviewer: When you say that it's more multidisciplinary and this is kind of an aside question really. How do you distinguish between multidisciplinary and integrated?
Respondent: Oh I don't know that I do, Suzanne. I guess from a, a teaching standpoint, it depends on how a school's working. If a school is working with teams then I guess it would be more integrated. But if a school's still working with, you know, you have a class here, the bell rings, you go to a class here, you go to a class here, you [_____] here, then it, it becomes more multidisciplinary in the sense that will the language arts teacher use a lesson or two, you know, will the biology teacher use it? Will it be used in art class? You know, how, how will these teachers, you know, will, will a different subject, a teacher teaching different subjects pick it up and use it?
Interviewer: I see. Okay.
Respondent: And they're isolated, you know. But if you're working in, in, and I don't know how schools are working now because I'm just not in there. But if you're working from more of a team approach then I would definitely say how does, how do all of the various components come together and how do the teachers present it, work with it, you know? I heard a good story out of Montana where a teacher was teaching reading. And she was actually doing it on the elementary, upper elementary level.
Interviewer: Uh-huh.
Respondent: But she said that she had her students read *The Good Earth* and then they went down the hallway to the industrial arts teacher and he, he brought in a cross-cut saw and they sawed up a log . . .
Interviewer: Uh-huh.
Respondent: . . . you know, after reading the essay. And talked about the relationship. And I thought that was a wonderful . . .
Interviewer: How interesting, yes.
Respondent: . . . you know, integration of . . .
Interviewer: Yes. Now, okay, yes. I would say to use that, that, correctly in the, I guess, in the [_____] way.
Respondent: Yeah.
Interviewer: Yeah.
Respondent: But other than that I, I really don't because I don't, I don't, I don't know how schools are teaching nowadays. I mean how they're approaching curriculums.

Interviewer: Well there's even, it's interesting you know, there's even disagreement or a lack of maybe uniformity, maybe I should put it that way, in understanding the difference between multidisciplinary and integrated curriculum.

Respondent: Say that again, I can't quite follow you.

Interviewer: I'm sorry. There's, there's, there is disagreement, or maybe I should call it a lack of uniformity of understanding . . .

Respondent: Uh-huh.

Interviewer: . . . of the distinction between a multidisciplinary versus an integrated curriculum.

Respondent: How, how do you define it?

Interviewer: Well, I think you did, actually, a pretty good job of that. But the multidisciplinary is that let's say you go, let's take a middle school, and you go from your English class to your math class to your science to your social studies and so on. And in each of those classes they'll talk about, they'll, they'll be doing an activity. This is where kind of a theme idea comes in . . .

Respondent; Right.

Interviewer: . . . issue-oriented sometimes. Where the teachers have got together and they've decided okay, we're going, we're going to use the Roman culture and I'm going to talk about that in my class and I'm going to integrate it into my lesson plan and the math teacher is too and so on. Well that's multidisciplinary. You've taken a theme, so to speak, and you've looked at it through several different filters, if you will. Several different content areas. Whereas integrated, truly integrated, you take that same theme but you study it integrating all of those, those content areas together. Not separately. The multi indicates more of a, a separateness in your understanding even though you see a common thread.

Respondent: Uh-huh.

Interviewer: Whereas integration you don't distinguish between the math, the science, the social studies and so on. You, you might actually approach it from a project . . .

Respondent: I got it.

Interviewer: . . . that actually integrates those content areas but you do not separate it as you are working on this project. You're, you're actually integrating those content areas and they're working together.

Respondent: There's not much chance to, to integrate in schools today, is there?

Interviewer: Yes there is. There's a big push to integrate.

Respondent: Oh is there? Okay. Well that means then teachers are having to work together a lot more aren't they?

Interviewer: Absolutely. Absolutely. And because of the way, unless you go to a, a kind of, you know, lower elementary lends itself more to integration than middle school and high school.

Respondent: Yes. I would say that elementary is where that can occur and I think a lot of teachers teach that way.

Interviewer: Right.

Respondent: They take a theme and then they just, they put, they weave all aspects, you know. They have the kids doing math in one part, like measuring a tree or something. And then moving into, you know, the historical perspective and, and just, it all, it all evolves.

Interviewer: Yes. And that's where I, that seems to me, that's one of the strengths of, of the LEP program and you mentioned the word integration with that. Because it, it gives a vehicle for, let's say, the language arts teacher to integrate science and observation . . .

Respondent: That's a good point.

Interviewer: . . . in, into language arts. So it offers a way, see, you can have, you could have the integration of a curriculum, broad umbrella integration, and then you can have integration of certain concepts into your lesson plans. The idea, and I like your word, weave, to actually seamlessly weave these, what we have separated out. See, it's really unnatural to separate those things out.

Respondent: Yeah it is.

Interviewer: But we've done it. And we've done it really well in our educational system. And I think that creates a lot of problems in our . . .

Respondent: Yeah, I agree. It, yeah, it does. Because like, we don't live our lives that way.

Interviewer: Absolutely. But we, but we tend to. We tend to want to separate out. You know and people, when I say, oh, I majored in biology they go ooh. Some people will go ooh.

Respondent: Well we've also put, we've also put kids into the concepts of 50 minute learning blocks.

Interviewer: Uh-huh.

Respondent: You know, you go, you sit and study for this period and then you go, you sit and study for this period and you're supposed to be switching.

Interviewer: Yes.

Respondent: You know.

Interviewer: Yes. You're right. I mean, our, our system is really kind of bass-ackwards. I mean it, instead of, of getting more and more distinct, and I realize, I know one of the reasons why we've allowed that to happen and that's simply because of the volume of knowledge we've accumulated. And continue to accumulate. But there's so much we think, oh, we can't know it all so we've got to have specialists. But what's interesting is in the field of medicine we are realizing that we need more, we are, there's a big recruitment on for family practitioners, which are, who are generalists.

Respondent: Right.

Interviewer: Because when somebody comes in to you they have no clue that they need a specialist. Something hurts or something isn't working properly and they need a generalist who can look at the big picture and then maybe focus down to something. And the whole idea of holistic medicine is totally contrary to the whole idea of being a specialist.

Respondent: Right.

Interviewer: And I, we've got some interesting conflicts in our whole society, which I think has caused some of the dysfunctions that we see. But that's really getting us to the big picture. Let me ask you. Now you are a LEP facilitator. So why did you want to become one and why do you continue to be one? And I know that relates to the question I just asked you but maybe you could take that a little step further.

Respondent: Well, I really like it.

Interviewer: Yes?

Respondent: Is, is probably the primary reason. I, I like, I like what it's teaching. I have spent in my 25 years in the conservation field, I have spent a lot of it addressing the whole concept of outdoor ethics.

Interviewer: Uh-huh.

Respondent: So this dovetails into a personal interest of mine. Into, into my beliefs, the values and the truth. So that's, you know, selfishly, that's, that's probably the biggest reason. But then I respect, I respect the curriculum. I respect the integrity of the staff that have worked with it and put it together. I just think it's different. I think it's unique. I would enjoy working with, with probably any of the program but I particularly like this one. Because, and for those reasons I listed that it, that it uses a piece of literature, that it seems to cross boundaries better. That it, that it really is a piece that I think at least the way it's done right now with high school students, can work with. I see a lot of curriculums aimed at 4th through 6th grade.

Interviewer: Uh-huh.

Respondent: And, and I know those are important years. But we've inundated those years with stuff. And, and I really like that this is, is really geared to high school even though it's used at other levels. It's a good high school curriculum, in my opinion.

Interviewer: So you've got [_____] that's been lacking there?

Respondent: Pardon?

Interviewer: You feel like there's been a lack . . .

Respondent: Yes.

Interviewer: . . . of working with . . .

Respondent; There's been a big lack of . . .

Interviewer: . . . yeah.

Respondent: And I just, I, I, I just think that it's unique and I think that it's well done. I like the content. I like the subject. I like the ideas behind it. It's fun to work with. The teachers respond well. I love the discussions that we get into in the workshops. I love touching buttons with people and watching them respond and get involved. And I think this does it well.

Interviewer: Okay.

Respondent: It's more to me than a bunch of activities.

Interviewer: Okay. I'm writing that down. Let's see. I think you really have already described, but maybe there might be a little bit more here. How would you describe Leopold's land ethic and its key components? And then how do you think that Leopold personally developed his land ethic? I mean, I know we've

read Curt Meine's book and so on, but of all that you've read about Leopold, give me how you think, how you perceive that his land ethic developed and those key components.

Respondent: Well, his land ethic I would say evolved, rather than developed. It evolved. I think that, that from a, an early child whose fascination with nature and his study of nature was the beginning. Because he was just a, immersed in it.. Like, like not many kids I, I know. And then, and then as he, as he, as he got older and wanting it as his profession to a certain degree with his studies in school and his, and his career choices. And, and I think he read, he thought, he reacted. He studied and he, he journaled. It was a lifelong process for him, I think. He traveled to Germany. What he saw there had a great impact . . .

Interviewer: Yeah.

Respondent: . . . I think on his, his, his whole wilderness concept. I mean, he saw, you know, these, these, these completely human manufactured forests. And he, he did, he reacted with that, I mean, it just hit him hard. And so he came back and fought for, for, you know, the wilderness here in its natural state not, not something we've planted in rows.

Interviewers: Yes.

Respondent: And, and so I think his whole life it was an evolution. That it was something he was interested in, that he cared about and it was in some ways [_____]. It was such a, a big part of his life. And so he called, his whole existence was kind of immersed in it. Like not many people. He had, you know, Gardner would say, if you had to find a natural intelligence . . .

Interviewer: Yes.

Respondent: . . . and Leopold definitely is one of the best examples of that.

Interviewer: Yes. I'm trying to get that book right now.

Respondent: In which he deals with the, the eighth one?

Interviewer: Yes.

Respondent: I don't have it either.

Interviewer: Yeah.

Respondent: I've got his, you know, *Multiple Intelligence*, what [_____] [_____], and it's before he developed that one.

Interviewer: Right. And I mentioned that to some of the professors at OSU when I got back, I said, did you know that Gardner has written one on the eighth intelligence, and they went, no. And so I was sharing that with them and they were very interested . . .

Respondent: Yeah, yeah.

Interviewer: . . . in what he was saying.

Respondent: So I, yeah, I think it was an evolution. Now, you know, what, what were the components of it, it was he [_____] off, I think Leopold looked at, at the natural world as a total ecosystem. As, as he called a land community.

Interviewer: Uh-huh.

Respondent: And just the way we would talk about a social community, you know, he extended it to a land community. And so like you would have neighbors, you

know, and relatives and [_____] and all of that. The land [_____] was the same thing. It had all the, the very, [_____]. And it all was important. And so he didn't separate out, you know, you can't, you can't love the [_____] and hate predators, you know, wouldn't want to put a, one perspective on it having to, you know, work with *Thinking Like a Mountain*.

Interviewer: Yes.

Respondent: It was all part of this community and he needed to look at it [_____] that way. And I think that's how he defined, you know, his ethic or what part we played in that, too. And, if you could see me, I'm sitting here gesturing and drawing all this out with . . .

Interviewer: Yes. Yes. Yes.

Respondent: . . . but, but, you know, it was, it was, it was a community.

Interviewer: Yes. Yes. Okay. Are there any other elements that are important to include in, in environmental education curriculum? In other words, is there anything else, this is the last opportunity here, that you'd like to add to that? Any other elements that you've thought of as we were kind of talking here that you, that you think, oh yeah, those ought to be included in an environmental education curriculum? And I realize saying that's a very broad thing. Which is where I'm focusing right now but you can give me specifics if you want to.

Respondent: Well, I, I just think that, I, we need to reinforce that, the whole concept, ethics is a scary term for most people.

Interviewer: Yes.

Respondent: But I think that that definitely needs to be part of teaching environmental education. We don't have to call it ethics if we don't want to. But we need to talk about the aspect of responsibility to and caring for and, and this concept of, of community. And I did think that lots of times we teach environmental education from strictly a scientific perspective and we don't talk about the social issues to go along with it and we, the, the value system that, that, that, lifestyles that we live, the value systems that we hold and how we extend that . . .

Interviewer: Yes.

Respondent: . . . in evaluating land and the wildlife and natural, you know, things.

Interviewer: Yes.

Respondent: And I just think we need to make sure that's part of it.

Interviewer: Yeah. If you didn't call it, and this is just aside now, if you didn't call it ethics, what would you call it? Or would you just not call it that?

Respondent: I'm trying to think if we have to necessarily call it anything. It's more a state of mind that we're working with. You know and understanding is a state of mind. I don't have a, with a, with little kids, I don't know. I don't have another word for, for ethics, really, right now.

Interviewer: Well it's kind of interesting, you know, when you look up the definition and, and you do some reading about ethics. Just different types of, you know, just ethics in general, from a philosophical standpoint, that they define, it's defined most often as a set of values that are supposed to be good for the community. And then that's where Leopold then launched off and said well, and usually

we're talking that, that it's defined in terms of the human community. And that's where that young man, Charles Nelson?

Respondent: Michael Nelson?

Interviewer: Michael Nelson. Thank you. Michael Nelson. When he got off on the, logically, how one could, and in particular, Leopold, could then extend what's good for the community to indicate the community being the whole environment. The land. And I thought that was really interesting. So, you know, this extension of, that we are actually part of, is a very difficult thing for us because that means we have to acknowledge a whole lot of other things about ourselves if we acknowledge that we are a part of this natural world.

Respondent: Well I think we relate very much to being in charge of . . .

Interviewer: Yes.

Respondent: . . . but not necessarily part of.

Interviewer: Yes. Yeah. Well there's a lot of instinctual things that we like to pretend don't influence our behavior but they do. And they, and they show up in some rather dramatic ways. Like, like the increased water consumption, as soon as you tell somebody there's not enough water, then the consumption shoots up because we have to hoard. And that's an instinct.

Respondent: Right.

Interviewer: And so it's kind of, it's intriguing and you know, we go, oh no, we have to do this but we, and we don't realize how basic that is.

Respondent: I think we're very spoiled, too, in that we, we think that, that we're due things.

Interviewer: Yes.

Respondent: And we ought to have something. And the minute you tell me I can't then I'm going to, by god, do it.

Interviewer: Do you think that that, in some instances, I guess, maybe in particular with the western culture, that that is our Judeo Christian tradition? Because we are given dominion?

Respondent: Uh-huh. Yeah, I've, Tim and I've had long discussions. He traced a lot of it back to Judeo Christian perspective.

Interviewer: Uh-huh.

Respondent: Yeah. Yeah. No, I, and, and you're right. In the west, it seems more prevalent because there's still a, a bit of . . .

[tape ends]

INTERVIEW #8

Interviewer: And so they've been really helpful and we went up to the LEP project. In fact, that's the first question, because your, your background is going to be a little different from [_____]. What do you know about the Leopold Education Project?

Respondent: Very little.

Interviewer: What is, well, what is your impression of it? What do you, what do you know of it?

Respondent: Well, let me just sort of get the context. Is the Leopold Education out of the forest service? Out of the Leopold Research Center or is this, because there's a lot of work that's done there . . .

Interviewer: Right. Right.

Respondent: . . . and on various projects.

Interviewer: Right. This is sponsored now by Pheasants Forever.

Respondent: Okay.

Interviewer: And they're the ones that pay for the printing costs and so on.

Respondent: So I know nothing.

Interviewer: Okay. All right. That's, that puts a frame a reference . . .

Respondent: Okay.

Interviewer: . . . on the questions I'm going to ask you. The, it is connected with the Leopold . . .

Respondent: Okay.

Interviewer: . . . research and the Leopold Nature Center.

Respondent: Right.

Interviewer: And so on. So they're all connected and they, they, interrelated.

Respondent: All right.

Interviewer: But the Leopold Education Project, and I can tell you about that.

Respondent: Okay.

Interviewer: What do you think are some of the key, in your opinion, what are some of the key components of environmental education?

Respondent: Whew. Well, I think there's a, needs to be a recognition about various environments. And an appreciation for various environments. Definitely some sort of ethical stance for various environments. And then there's the scientific aspect. Sort of the, what's, what's good, what's harmful, et cetera, et cetera, in, in various environments. I, I have mixed feelings about whether education should actually be in some of those environments.

Interviewer: What do you mean by that?

Respondent: Well, I think that sometimes we do more harm studying fragile environments by being there than by not being there and so in the name of science or education, I, I get caught in that, in terms of providing the vehicle, you know, how do you teach about something unless you're there. On the other hand, once you're there, you're destroying it, particularly if you take people with you.

Interviewer: Why did you choose those particular components that you just gave me about environmental education?

Respondent: I think they're, from my understanding of environmental education and outdoor education, too, those are sort of the, the basics, the in, about and for, an

environment or the outdoors. They're the ones that come up the most in the literature and they're probably the ones that I deal with when I do my teaching in the out of doors.

Interviewer: Why do you think they're so basic? I mean, why, what is it about those components that you mentioned, recognition and appreciation, ethical stance, scientific aspects. Why are those so key? Why do you think, in your opinion, why are they so key?

Respondent: For me, it's, it's to help people get an attachment to the natural environment and if you feel attached to it, you'll care about it. And if you care about it, you'll work pretty hard to protect it. Conserve it. Without that connection I don't, it's just, something. I mean, it, there's, it's not of importance to people. And I think that affects the politics, as well.

Interviewer: Briefly, I have to say that, describe an ideal environmental education curriculum.

Respondent: Wow.

Interviewer: I know, that's, I know. That's why I said briefly.

Respondent: A curriculum, huh?

Interviewer: Uh-huh.

Respondent: Well, first of all, I'd want it to be interdisciplinary, for sure. To read a, what others have to say about the environment. Definitely, I think, the science has to, has to be in there. But with that, I think, comes with a lot of possibilities for other aspects in a curriculum. Social studies. Math. Physical education. History. The English and literature and the language arts. That it, it really can permeate an entire system. I mean, it, and I'd like to think that it should and could. So ideally I'd want it in every class, pretty much every day. And specifics, I, I think that sort of depends who you are and what age group you're working with and, and what you have available to you, sort of easily. You can make a lot of stuff out of nothing. It can be inside, it can be outside, I mean, I'm not . . .

Interviewer: Uh-huh.

Respondent: . . . so worried about that. The details. But ideally, I'd want this sort of penetrating every aspect of, of a, a student's school life. Curriculum. And definitely starting early. And adding more depth as students grow older.

Interviewer: Do you think that the development of a land ethic is a critical component of environmental education? Why or why not?

Respondent: Yes, I do. I think, again, for the connection to the land. I, I think that people have to value something if they're going to work hard to protect it. Sort of honor it. You honor people and things that you have relationships with so I, I definitely believe that developing a land ethic is key to that.

Interviewer: In your owns words, define land ethic.

Respondent: Basically it's honoring the resource, the natural resource. And everything and everybody that is part of that system and being active in, in the longevity of that resource.

Interviewer: Are you talking about system building or maintenance, improvement, or?

Respondent: Not, not necessarily improvement. More conservation, I think. Which may land me more in the, the maintenance category.

Interviewer: What do you think that means? When you say maintenance?

Respondent: Well, to maintain it. I, I think there are some things that we probably need to do to improve land. You know, whether that's removing trees that have diseases.

I, I'm not beyond manipulating somewhat. I'm not, I don't think we should manipulate a lot. I think we should manipulate on behalf of the resource, not on behalf of the user of the resource or, or anything else. I think we try to keep it balanced. But, I, I think there's so many external things coming in that part of our responsibility now is to do little harm and, and to do as much good as we can unobtrusively.

Interviewer: I'd love to have time, another study that we get into is [_____] [_____]. What do you mean by honoring? You said honoring. You said the basic thing is honoring a natural resource.

Respondent: Yeah.

Interviewer: What do you, I mean, how would, what would that look like? Somebody who honors the resource.

Respondent: To me it's, it's moving softly on it. It's, it's to leave no trace, although that, that's, that's such tidily stuff but it's a good start. And if, you know, if it works for people, I think it's making decisions not to go onto certain places. Even though you would love to. So it, it requires some self-sacrifice or self-control, I guess. It, it means being aware of where you are and where you're going through that place. So that you're not just tromping through it. And, and basic, honoring, I mean, I, I put it, it's a very spiritual kind of thing. It means including it in my prayers. It means recognizing when damage has been done and sort of apologizing to the land. It's, it's a relationship.

Interviewer: I'll come back to those. So what would you say then, you're definition was the honoring.

Respondent: Uh-huh.

Interviewer: What else would you then include, or what would you include in the concept of a land ethic? Beyond the definition of this is what it is. [_____] the whole concept. Is there anything else that you want to add to that?

Respondent: Well, the way I translate it for, for people that I teach is that we don't do anything to the land or to the water that we, you know, we don't add anything to it that we're not willing to basically eat or drink ourselves. And, and I think just be conscious is, you know, to be consciously competent would be a fabulous thing. As in a planned ethic.

Interviewer: What else would that include when you say consciously competent?

Respondent: Well, first you have to know something about, so, I mean, it, it includes some knowledge. It definitely includes attitude and, and I, I, it's truly being aware of where you are and what you're doing so that, a lot of times I see people doing things carelessly. It's not because they're, they're not caring people. But they'll sit there and just start grounding their shoes into the ground or something like that. Unconsciously. They're just standing there stomping their feet. And that's unconscious behavior. I want people to be conscious of what they do all the time.

Interviewer: Do you believe that a piece of literature can facilitate the development of a land ethic? Why or why not? And then consider, then if you, if you do believe that the literature can facilitate this development of a land ethic, how do you think that it does this facilitation?

Respondent: Yeah, I do. I, at least in the initial stages of a person developing their, a personal land ethic. They might read something and say oh, that's exactly what I believe. I couldn't say it better. And they attach themselves to the words and to the ideas

of the author. And eventually they'll find their own words to describe them but it gives them an anchor to get started in that thought process. Even though they may be imitating it initially, to me, that's just great. I mean, at least they're doing something.

Interviewer: So you're, I'm just going to kind of repeat this back, that the literature can influence and it does, and the way it does is by causing an attachment.

Respondent: Uh-huh.

Interviewer: Is there anything else that you think that helps to foster this development of a land ethic?

Respondent: I think it can bring ideas to people that they hadn't thought of before. But I, for a person to buy it, they, they have to have some agreement with it. So a person would have to be pretty persuasive and a good author is, in terms of what they say and what their values are, to, to get somebody to, to sort of attach to it. To agree with it.

Interviewer: Are you familiar with Leopold's *Sand County Almanac*?

Respondent: Oh, yeah.

Interviewer: How familiar, how would you describe your level of familiarity?

Respondent: I've read it probably a dozen times. Myself. I've used it in classes to teach. I, frankly, there are times when I read it that I don't know what all the hub-bub is about. It's not that great a book. I mean, you know, it is, but it isn't. There are passages that are fabulous but there's a lot of that book that is not so fabulous. It's just pretty dry stuff. But clearly, he has paragraphs that are quintessential in talking about the land.

Interviewer: Are there any, like, sections that you, that come to mind? That you can think of?

Respondent: Oh, lordy. You know, it's like my worst thing. I never remember books and authors and stuff. This one I do. Because I've read it so often.

Interviewer: Yeah.

Respondent: So, I mean, there, there are definite images I have from the book more than being able to quote passages or, or whatever. The image of planting trees and hauling water off to make those trees grow is, is pretty vivid in, in my mind. Just knowing the work that that took and the caring. I've also seen pictures of the farm which sort of clicked with what's up there and I've also heard his daughter talk about it.

Interviewer: You got to hear Nina [_____].

Respondent: Yeah.

Interviewer: The other one, Estella, excuse me, speak this summer.

Respondent: Yeah. And, and they're fabulous.

Interviewer: Uh-huh.

Respondent: And they show pictures and, I mean, you live the *Sand County Almanac*. And, I think, actually when I think about it, I see those pictures and hear their words as much as, it's, I guess it's helped me understand the book more. Hearing them and seeing those pictures and stuff like that.

Interviewer: Have you ever been up there?

Respondent: I, I have not.

Interviewer: Yeah. It, it's a neat place, I mean, once you've read it and then all of the sudden you're there, it's like, oh, [_____]. What components, if any, in the *Sand County Almanac* would you say make it a persuasive piece of literature?

Respondent: Yikes.

Interviewer: Or maybe you don't, you know.

Respondent: Well, I know I do, because when I read certain things I smile and go, yeah, that's, that's it. But I think the fact that he, and, and the family, truly believed that they could reclaim this wasteland, basically, and do it. Pull it off. Is, is the most remarkable. But really, when he just talks about his passion for, for the land and for bringing it back and the fact that this would be possible if you loved the land, is striking. I mean, truly, totally passionate about the whole thing.

Interviewer: So the passion, more than . . .

Respondent: The, the passion . . .

Interviewer: . . . anything else is what makes it . . .

Respondent: Yeah.

Interviewer: . . . persuasive.

Respondent: Yeah. To me.

Interviewer: When someone reads that, that seems to . . .

Respondent: It does for me.

Interviewer: . . . come out. Okay. Well that's, you know.

Respondent: Yeah.

Interviewer: What do you believe was Aldo Leopold's intent when he wrote *Sand County Almanac*?

Respondent: I think he was keeping a journal. I mean, I really think he was just sort of documenting from his scientific background what was happening. And he was a, an effective enough writer to include his own philosophy, I mean, weave that in.

Interviewer: Yeah. I'm not going to ask you the next question, because it has to do with why you think the LEP is so effective?

Respondent: I don't know what it is.

Interviewer: Right. What different programs have you facilitated for, such as WET and Wild?

Respondent: I am a Project Wild. And I've done WET..

Interviewer: You have facilitated, you say, for that also?

Respondent: Uh-huh.

Interviewer: Okay.

Respondent: And I'm a Leave No Trace Master Trainer. And then, I, I'm a Wilderness Education Association instructor, certification instructor.

Interviewer: How would you describe Leopold's land ethic?

Respondent: Well, it changed. I mean, there's great stories about him and how his ethic changed. And I think that's part of his attraction is that it, it changed from a true, sort of hunter gatherer, you know, it's there for my pleasure, the land and, yes, I think we need to manage the land and, but it's definitely for, for pleasure to truly, a more conservation-oriented, I mean, he really went from scientist to philosopher.

Interviewer: Uh-huh.

Respondent: And I don't know how that happened to him. I mean, I know the story and stuff like that but, as he grew older, and he really wasn't that old when he was doing this.

Interviewer: Right. Yeah.

Respondent: But as he developed, matured in his own thinking, he definitely shifted, I think, very much from the scientific forester to caretaker and advocate for the land.

Interviewer: What do you think he included in his understanding of the land?

Respondent: You know, I think he just opened his heart to it. And, and that's where the passion comes from. And, and his, his beliefs that it, it takes more than just sort of managing and, the forest, it was the whole system and everybody, visitor, resident, I mean, he, he finally got the big picture and it's like it went from his head to his heart. And, and that's where he stayed then.

Interviewer: Do you have any other thoughts about how you think he went about developing this, this evolution [_____].

Respondent: I don't know. Other than the cryptic stories that they write about in books, you know. I don't know. I don't know what his experiences were other than that hunting trip that, you know, when he looked into the wolf's eyes and sort of, oops.

Interviewer: Yeah.

Respondent: Oh my. This is a living thing and I should pay attention. I, I just think some people are, are here to, to spread the message and he was, he was one of the chosen ones. He was in a position to do it.

Interviewer: Are there any other elements that are important to include in an environmental education curriculum that you've kind of thought through [_____] these things with me?

Respondent: Well.

Interviewer: Anything else that you can think of?

Respondent: I'm not opposed to coercive behavior in developing a, a land ethic. I, I think, I think it is a development process. It's a maturation and the educator in me says, you know, let people learn this in their own time and in their own way.

Interviewer: What do you mean by the coercive behavior?

Respondent: Well, I mean that we need rules. We need to enforce those rules for people so that they learn the behavior even, you know, there's a lot of people who just are rules followers, so they're, they're going to follow the rules and they don't know why.

Interviewer: Uh-huh.

Respondent: They don't understand the benefit. They have no relationship but they will throw away their trash. It's a start. And, and I think we need both of those. I don't think we have time to wait for everybody to develop a, a relationship. Because I'm not sure all people will. Nor do they desire to. And it basically goes back to almost, you know, the evolution of moral development. Some people will never mature into how they decide what's right and wrong. You know, [_____] stuff. And so I think we definitely need rules and we probably need fences and we need to block off certain areas and while I wish we didn't have to I really think we do.

Interviewer: That's interesting. What are some suggestions that you have for creating this attachment that seems to be necessary? You mention the rules that, okay, here's kind of the stop gap until maybe that development does or doesn't take place.

Respondent: Well, I think, I think good positive experiences out there and really helping people understand why we do things we do, why it's important, not just, you know, don't pick the flowers. It's why don't we pick those flowers? Or what flowers can you pick? Because they're going to come back anyway versus, you know, an orchid or something like that that isn't going to come back for several years. And, you know, this sounds really sort of ditsy but what drove this home to me was when I would teach people different wildflowers. I mean I'd watch them tromp through a field. And then we'd teach them the names of the flowers. And I, basically, I'd make them get down on their hands and knees and introduce themselves. Hi

Spring Beauty, I'm Chris, how are you today? And those students never walked on flowers again. And it was, it was so striking that once they understood and, I mean, this was now their friend. You don't step on your friends. And they didn't. You know, and that was such a simple, stupid little deal but it worked.

Interviewer: Effective.

Respondent: It was effective. But it, it really was, continues to be astonishing because I work mostly with adults, not with young children.

Interviewer: It's like wow, had to give them some [_____] to that attachment.

Respondent: Yeah. Well, I think so, I mean, it's a start. And then if they want to find out more about it they, they certainly can. But I think it's really taking time, it's helping people translate the experience so not only do you get them up to see a sunrise or something but you let people talk about what's happening to them while they're seeing that. And most people say, you know, they feel so small. The feel insignificant. They're amazed by the, the majesty and the beauty of where they are. It's a moment in time that sort of brands itself on them. And, and that's the beginning. Whether they carry that out.

Interviewer: What do you think takes places between this attachment that then leads to this land ethic?

Respondent: Commitment.

Interviewer: This actual ethic that you [_____].

Respondent: Yeah. The commitment. I don't know. It's like being committed to anything else. You, you have to believe in it enough, understand it enough that you're willing to let your actions speak, you know, you, you want to be congruent in your actions and your belief systems. And it's really hard. I mean, I can't do it. I still like long hot showers. You know? And, and I, I'll save my shrubs and my, around my house. And my trees. By watering them and not just let the natural stuff. So, you know, I, you know, none of, I'm not clean on it. I can't do it all the time. But I'm pretty much aware when I'm not. And I'm aware when I am. I mean it drives me nuts when I walk around my neighborhood on trash day and see how much trash is going out and see what kind of trash, you know. Piles and piles of cardboard and stuff like that. It's like, why can't you go to the recycling center? You see all the cans and the bags and stuff like that. So we're, that's sort of what I mean by coercion. You know. So let's make recycling mandatory and people will do it. They'll grumble about it but they'll start a behavior. And maybe, eventually, they'll catch up with a belief system. But values, I mean, they come. We can teach them in, in schools but if the families don't support them, that's a tough road. And vice versa. We teach them in families but if other people or they're significant places where people spend a lot of time don't support them. It's a tough road. We're, none of us are lined up. And, of course, then, you know, politically, people talk a good game but really there's very little support for environmental kinds of efforts. Well, I mean, in comparison to other kinds of things that our nation obviously decides values more to support it financially. So there's mixed messages all the time. So I think it takes a little gumption and, and a true dedication to try to live sort of simply and conservatively. And, and our, our society sure doesn't make that easy. You can, you can't go to the grocery store without buying something wrapped up in 12 wrappings.

Interviewer: Uh-huh. Uh-huh. What would you say then, in your experience, since that's where, all you can talk about. But in your experience what do you think it is that's there that seems to, to make this connection between that attachment and that commitment? I mean, is there any, is there something you can point to or something, a transition you feel or, what do you think it is?

Respondent: I think it's a shift. It's a shift in people's heads. I think it's a shift in their hearts. There's an emotional attachment, I think, as much as anything. Sort of a little passion. I think there's also the knowledge that they can do it. You know, when people travel around for a month with two changes of clothing and not much else, you know, they learn that they really don't need that much. They don't need all this stuff.

Interviewer: Uh-huh.

Respondent: This stuff is nice but they can certainly reduce their consumption.

Interviewer: I don't know how to keep checking it to make sure I'm getting the sound but it's still turning so that's good.

Respondent: So, I, I don't know. And I don't know how long it lasts. From a significant experience. But I think the more experiences you have and the more confident you get that you can live that way the easier it becomes. And basically, I think eventually people line up with other people who believe the same thing that they do. I mean, it's just . . .

Interviewer: Yes.

Respondent: . . . you know, you just sort of gravitate to a group which gives support. And, of course, once you're in a group, it's much easier to walk that path. First of all, you're policed and secondly, you're in a supportive group. So you're not looking like the twinkie that is separating your garbage, [_____] everybody else is just tossing it.

Interviewer: You're right. It is tough. And I'm sure traveling around being in different states you see a big difference . . .

Respondent: Oh yeah.

Interviewer: . . . in how the states, their attitude, towards, towards that. Well, this is a very elusive thing. I mean this is . . .

Respondent: Oh, it definitely is.

Interviewer: . . .in trying to find either commonalties or extreme differences in people who have a land ethic . . .

Respondent: Uh-huh.

Interviewer: . . . and what they consider that to be. You know, what is it? Are we all on [_____] you know, with certain components or not.

Respondent: It's a clarified value. I mean, I don't, it's a, but it's a value that I would guess for, for many of the people you're talking to is, is in the top 20 values in their lives. Or top 10 in their lives. And other people, you know, have, they haven't even thought about it.

Interviewer: Yeah. And how do you get them to?

Respondent: Yeah.

Interviewer: Is it something that has to happen during one of the critical periods of childhood?

Respondent: I think it can happen anywhere. Clearly when it happens young, I mean, I have nieces and nephews in New Jersey that, you know, of course they recycle.

They've been doing it their whole lives. Schools recycle, they recycle at home. They don't know any . . .

Interviewer: They have no landfills.

Respondent: Yeah. Right. Because they send it all out here. They, they don't know any different. I mean, that's their lifestyle. Versus, you know, tossing something out here in the country.

Interviewer: We're all Oklahoma [_____].

Respondent: Yeah. Which is really different. That's always stunned me that when you have more land the ethics are worse. You don't appreciate the land.

Interviewer: It's that frontier perspective.

Respondent: Well, I think so.

Interviewer: There's always more. We've got plenty of space.

Respondent: Yeah. It's interesting. Are you going to talk to ranchers and . . .

Interviewer: Right now my focus is on environmental educators. I want to see if there is some, I want to find out how their perspectives either differ, or are similar.

Respondent: Yeah.

Interviewer: What, you know, how are their perspectives?

Respondent: Well, I can tell you something like Leave No Trace seems to work. I mean, to me, it is such kindergarten stuff and yet it's, it's stuff that the, that the general public can grab on to. And I don't know whether it's six simple rules and, you know, it's, they've clichéd it enough that it makes a difference and they've gotten people to buy into it. And it is very elementary. I mean, I, to me, it's sort of a yawner to, to present this stuff.

Interviewer: Uh-huh.

Respondent: Not the, the concepts are all good but the way that it's, sort of, trite.

Interviewer: Yes. Yeah.

Respondent: But it works. I mean people, you know, can recite those rules. They've been, and they say it changes their lives.

Interviewer: Even if it [_____] change in behavior and it's something else, I mean, something that's happened. The next step has happened. Your actual behavior follows the attitude.

Respondent: Right. Right. Right. And, of course, that's a chicken and egg story. Attitudes, behaviors, behaviors, attitudes. [_____] Hit them on all sides.

Interviewer: Well that is interesting. I mean, you've been at this, and I can turn this part off now.

VITA

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