

BEYOND WILDERNESS: OUTDOOR EDUCATION AND THE TRANSFER OF
ENVIRONMENTAL ETHICS

by

SARAH MAZZE

A *THESIS*

Presented to the Environmental Studies Program
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Master of Science

June 2006

“Beyond Wilderness: Outdoor Education and the Transfer of Environmental Ethics,” a thesis prepared by Sarah Jane Mazze in partial fulfillment of the requirements for the Master of Science degree in the Environmental Studies Program. This thesis has been approved and accepted by:

Dr. Greg Bothun, Chair of the Examining Committee

6/3/2006

Date

Committee in Charge: Dr. Greg Bothun, Chair
 Dr. Ellen Scott

Accepted by:

Dean of the Graduate School

© 2006 Sarah Jane Mazze

An Abstract of the Thesis of

Sarah Jane Mazze for the degree of Master of Science
in the Environmental Studies Program to be taken June 2006

Title: BEYOND WILDERNESS: OUTDOOR EDUCATION AND THE TRANSFER
OF ENVIRONMENTAL ETHICS

Approved: _____

With growing awareness of environmental issues, few outdoor educators would deny that the environment deserves greater attention in our daily lives. Most adventure education programs focus on treading lightly on the land for the duration of the program, yet may not discuss skill transference to students' daily lives.

Through interviews with 9 students and 10 alumnae of an adventure-education program, this qualitative study examines how the local example of leaving no trace can inform living a less resource consumptive lifestyle on a more global scale. Behavior change models and prior research guided the interviews with the goal of exploring: does the environment end at wilderness boundaries for students, or to what extent do they carry home and expand their knowledge of living lightly?

As predicted, all subjects achieved some degree of transfer, with contributing factors including time spent in remote wilderness, explicit discussion of transference, and increased knowledge and skills.

CURRICULUM VITAE

NAME OF AUTHOR: Sarah J. Mazze

PLACE OF BIRTH: Stanford, California

DATE OF BIRTH: December 3, 1977

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon
Northwestern University
Oxford University

DEGREES AWARDED:

Master of Science in Environmental Studies, 2006, University of Oregon
Master of Arts in Journalism, 2006, University of Oregon
Certificate of Not for Profit Management, 2006, University of Oregon
Bachelor of Arts in Psychology, 1999, Northwestern University

AREAS OF SPECIAL INTEREST:

Sustainability in Education
Sustainable Development
Environmental Writing and Reporting

PROFESSIONAL EXPERIENCE:

Program Assistant, Climate Leadership Initiative, University of Oregon, February
2006 to Present

Graduate Research Fellow, Resource Innovations, University of Oregon, 2005 to
Present

Project Manager, Service Learning Program, Environmental Studies Program,
University of Oregon, 2003-2005

Co-Instructor, Environmental Studies Program, University of Oregon, 2004

Teaching Assistant, Environmental Studies Program, University of Oregon, 2003

GRANTS, AWARDS AND HONORS:

Barker Research Grant, Environmental Studies Program, University of Oregon,
2004-2005

William B. Stapp Scholarship, North American Association of Environmental
Education, 2005

ACKNOWLEDGMENTS

I wish to extend my appreciation to Dr. Greg Bothun, my committee chair, who provided the opportunity and support for me to embark upon this research. I would also like to thank Dr. Ellen Scott for her invaluable advice around qualitative research methods. John Gookin and the research team at National Outdoor Leadership School as well as the students and alumnae who participated in this research deserve great thanks for the time they graciously gave towards this thesis. I am grateful to my colleagues in Environmental Studies for their advice and good humor. I thank my parents for their unconditional support and love. Finally, I offer my gratitude and love to my husband, Steve, who contributed his thoughts and served as a sounding board at every point in the process.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Outdoor Education in the United States	7
Environmental Ethic and Adventure Education	10
Outdoor Education Defined	11
Adventure Education	13
Why Adventure Education	14
II. REVIEW OF THE LITERATURE	18
Overview	18
Behavior Change	19
Models of Behavior Change	19
Environmentally Responsible Behavior: Outcome Research	24
Outdoor Recreation and Environmental Concern	26
Transfer of Environmental Ethic in Adventure Education:	
Behavior and Attitude	30
III. METHODS	34
Overview	34
Interview Questions	36
Subject Selection and Recruitment	40
Interviews and Analysis	42
IV. RESULTS	44
Demographics	45
Summary of Findings	46
Nature and the Outdoors	46
Environmentally Positive Behavior	46
Perceptions of Self-Efficacy	48
Nature and the Outdoors	49
Relationship With and Feelings towards Nature and the Outdoors	49
Influence on Behavior and Life Goals of Nature and the Outdoors	57
Contributing Factors	59
Environmentally Responsible/Positive Behaviors	61
Overview	62
Environmentally Positive Behavior:	
Summer of 2005 Subjects, Pre-Course	62

Chapter	Page
Influence of NOLS on Environmentally Positive Behavior:	
Summer of 2005, Immediately Post Course	66
Reported Changes in Environmentally Positive Behaviors	69
Alumnae Level of Environmentally Positive Behaviors	74
Influence of NOLS on Alumnae Environmentally Positive Behavior	76
Influence of NOLS on Summer of 2005 Subjects'	
Environmentally Positive Behavior	79
Subjective Norms	82
Perceptions of Impact of Life at Home	85
Perceptions of Self-Efficacy	87
Knowledge.....	87
Empowerment	93
Responsibility.....	98
Skills	101
Conclusion.....	105
 V. CONCLUSION AND DISCUSSION	 106
Summary of Findings	106
Relationship with Nature and the Outdoors	107
Environmental Concern	108
Changes in Environmentally Positive Behavior: Behavior Models	109
Environmental Generational Amnesia.....	115
Recommendations	116
Reflections on This Study	119
Further Research	120
Final Remarks	122
 APPENDIX	
A. QUESTIONS, INTERVIEW 1, SUMMER OF 2005 SUBJECTS	123
B. QUESTIONS, INTERVIEW 2, SUMMER OF 2005 SUBJECTS	126
C. QUESTIONS, INTERVIEW 3, SUMMER OF 2005 SUBJECTS	131
D. QUESTIONS, SOLE INTERVIEW, ALUMNAE	133
 BIBLIOGRAPHY	 138

Chapter One: Introduction

At this point in history, it is undeniable that many human activities have a dramatic, and not benevolent, impact on ecological systems. Encroaching asphalt stifles biodiversity, our fossil fuel habit (among others) contributes to climate change, and the rate at which we deplete natural resources exceeds the rate at which they are replenished. The list goes on and on, provoking paralysis and despair in some, apathy in others and activism in still others. With growing knowledge and awareness of various worldwide environmental issues, few outdoor educators would deny that the environment deserves more attention and priority in our daily lives. Indeed, instilling a sense of environmental responsibility may become a primary purpose of outdoor education and even outdoor adventure education. Miles and Priest (1990) suggest that, "adventure education can even help to address the greatest of today's challenges – to learn what humans must do to sustain their natural environment, and to motivate them to action on its behalf" (p. 443). Yet in his controversial essay, "The Trouble with Wilderness," Cronon (1996) asserts that the creation and preservation of wilderness, both literally and in the American mind, may not in fact serve as the preservation of the world, as posited by Thoreau, but rather fosters a dualism between humans and nature that allows for a decreased environmental ethic in our daily lives. In other words, the "wild" found in wilderness is so different from the wild where we live; he suggests that we do not see ourselves as being a part of nature

when not in dramatic, open landscapes. This leads to the question, does a multi-week experience in a remote outdoor setting during which students are given explicit tools for preserving the wilderness spaces they visit contribute to or detract from an environmental ethic in their daily life? While many studies have demonstrated the benefits to personal-growth achieved through adventure education, fewer have examined the impacts of several weeks in the “wilderness” on students’ environmental ethic. Using qualitative data collected through a series of interviews with current National Outdoor Leadership School (NOLS) students and NOLS alumnae, this study explores the manner in which students of a prominent adventure education program may or may not experience a shift in their environmental ethic after participating in an adventure education course.

Cronon (1996) stands his thesis of wilderness as an unwitting tool of human – nature dualism on the platform that:

The more that one knows of its peculiar history, the more one realizes that wilderness is not quite what it seems. Far from being the one place on earth that stands apart from humanity, it is quite profoundly a human creation – indeed, the creation of very particular human cultures at very particular moments in human history (p. 69).

To briefly summarize the background Cronon (1996) provides on the transformation of wilderness in the American consciousness, he describes the transition from the eighteenth century conception of wilderness as a terrible place deemed “savage” and “barren” to a late nineteenth, early twentieth century wilderness that encompasses the domesticated sublime, a retreat from the ills of civilization and the final frontier. This

latter version of wilderness, Cronon informs the reader, required the removal of Indians from the various vicinities to ensure the illusion of its “pristine” state.

Cronon (1996) goes on to state that as long as we’re protecting some sacred spaces, we dissolve ourselves of responsibility to care for the already sullied urban landscape, thus doing more harm than good to the environment through the creation of wilderness:

To the extent that we live in an urban-industrial civilization but at the same time pretend to ourselves that our *real* home is in the wilderness, to just that extent we give ourselves permission to *evade responsibility for the lives we actually lead*. We inhabit civilization while holding some part of ourselves – what we imagine to be the most precious part – aloof from its entanglements. We work our nine-to-five jobs in its institutions, we eat its food, we drive its cars (not least to reach the wilderness), we benefit from the intricate and all too invisible networks with which it shelters us, *all the while pretending that these things are not an essential part of who we are*. By imagining that our true home is in the wilderness, we forgive ourselves the homes we actually inhabit. In its flight from history, in its siren song of escape, in its reproduction of the dangerous dualism that sets human beings outside of nature – in all of these ways, wilderness poses a serious threat to responsible environmentalism at the end of the twentieth century (p. 81).

The implication of Cronon’s (1996) hypothesis as it relates to this study harshly contradicts the intentions of adventure educators; could it be that by making students more at home in the wilderness they are actually divorcing those students from a

holistic understanding of human's place in nature? Certainly most programs focus on treading lightly on the land for the duration of the program and while in the wilderness, yet some may not facilitate the transfer of that concern, knowledge and skill to students' daily lives. Moreover, given that those working in outdoor and adventure education likely spend most of their days in wilderness settings, while their students most likely do not, might a disconnect occur between the stated purpose of the program and its actual impact on students? In a 1985 article, Simpson outlines four other reasons, summarized below, why environmental ethics may take a backseat in some outdoor education programs:

- 1) Ability to teach or knowledge of ecological concepts might not play a large part in hiring outdoor leaders;
- 2) Environmental ethics/education often take a low priority in planning and implementation;
- 3) Activities designed to foster environmental goals might be abandoned due to the realities of trip management;
- 4) Some outdoor leaders may believe that exposure to the outdoors will instill an environmental ethic in participants, with or without structured activity.

This research initially developed from the concern that due to some or all of the above-mentioned reasons, adventure educators and programmers might be missing an opportunity to foster an environmental ethic, even in those programs that state a goal of increasing participants' environmental ethic or awareness.

On the other hand, the possibility exists that a month spent living outdoors, albeit in our self-created wilderness, could provide students with the

example of playing a less destructive role within a living community and could develop a relationship between those students and the land that carries over into their lives outside of wilderness. In fact, Cronon (1996) proposes that wilderness does not only influence us to dismiss the nature we live in, but may also have the ability to help us recognize the wild at home:

By seeing the otherness in that which is most unfamiliar, we can learn to see it too in that which at first seemed merely ordinary. If wilderness can do this – if it can help us perceive and respect a nature we had forgotten to recognize as *natural* – then it will become part of the solution to our environmental dilemmas rather than part of the problem (p.88).

Kahn (2002) proposes a dose of “pristine” wilderness as the remedy for what he terms, “environmental generational amnesia,” or the inability of successive generations to recognize the state of environmental degradation they live in. Through a series of three studies with children living in locations around the world, Kahn found that his research subjects held similar conceptions of nature and environmental moral constructs regardless of whether they grew up in the Brazilian rainforests or inner city Houston. Kahn’s findings show that the vast majority of children from all three locations were aware of local environmental problems; thought plants and animals were important in their lives; cared about harm to those plants; believed that throwing trash into local waterways was harmful to animals, people and aesthetics; and believed it was a violation of moral obligation to throw trash in their local waterway. Looking more deeply into the

topic, Kahn discovered that while two thirds of the Houston study participants understood environmental problems, only one third recognized that these problems affected them, despite the fact that they lived in one of the most environmentally polluted cities in the United States. Kahn attributes this phenomenon to environmental generational amnesia, or the idea that to understand pollution, we need a less polluted site to provide a comparison to measure against. Kahn (2002) explains:

We all take the natural environment we encounter during childhood as the norm against which we measure environmental degradation later in our lives. With each ensuing generation, the amount of environmental degradation increases, but each generation in its youth takes that degraded condition as the nondegraded condition – as the normal experience (p. 106).

Kahn (2002) goes on to suggest various ways to provide children with information about the natural world, including introducing them to “pristine” nature. If Kahn’s theory holds true, an adventure education course could serve to recalibrate students’ understanding of a “normal” state of the environment to one that holds greater possibility of a health and less of degradation.

However, if indeed, this shift in perception and relationship takes place, questions remain: does the bond persist over time, and what strengthens or weakens that connection? I hypothesize that even without any lessons or debriefs aimed towards transferring minimum impact thinking to daily life, some carryover and transformation will occur.

Outdoor Education in the United States

Although children have been learning outside since the beginning of human history, it is only since the middle of the nineteenth century that outdoor education has been recognized as an asset to traditional education. Variations on the theme of outdoor education in the United States have arisen in response to shifts in society and ideas of nature, self and nationhood over the last two centuries. By the late 1800's, many Americans thought of nature as existing for their benefit. According to historian Donald Worster, the nation held, "a view of the natural world as capital, the obligation to use that capital for self-advancement, and a conviction that the social order should promote the accumulation of personal wealth" (Robbins, 1997, p. 190). Although outdoor education programs of the time did not use the natural world as capital, per se, the focus was anthropocentric, or human centered, the purpose self-advancement through character building. It is likely that the outdoors were chosen as the setting for camps such as the YMCA, which went on their first informal camping trip in 1885 before "industrializing" in 1861 with a permanent camp, because of the strength of character believed to be derived from the quickly disappearing pioneer lifestyle (Gibson, 1973).

In the early part of the twentieth century, the loss of the frontier and a growing concern around urbanization allowed for progressive education to continue its spread to the outdoors. The emergence of the National Parks and their nature programming not only lent further credibility to science taught in the outdoors, but also lent a new sense of individuality to the nation, setting the United States apart from Europe. Nature Study in

the parks also introduced the benefits of outdoor education to a greater portion of the populous than previously had exposure. Another segment of outdoor education of this time began a trend of literally reenacting "pioneers and Indians" which continues to this day. The leaders of this movement were Daniel Beard and George Seton, co-founders of the Boy Scouts, each arguing on opposite sides of a frontier game that substituted wilderness for the west (Deloria, 1998).

In the 1940s-1950s, outdoor education received greater attention than it had in the past, with Michigan legislature permitting schools to own and operate camps. The first year round resident outdoor school opened near Battle Creek, Michigan. Three schools each brought their students to the Clear Lake Camp for two-week periods, paving the way for the many school camping programs which still exist today (Smith, 1972). The school camping movement also gained validity through a series of experiments run at National Camp in conjunction with Life Camps in 1947. Two classes spent three weeks of the school year at National Camp without their schoolbooks. The study found that in almost all tests, the camp group performed better than the control group that stayed at school all year. Aside from lending academic validity to outdoor education, this success of this research paved the way for the first national organization devoted to outdoor education. In 1951, L. B. Sharp founded the Outdoor Education Association, Inc. to unify outdoor educators (Rillo, 1980).

In the fifties and sixties, outdoor education became less solely centered on camping and more oriented towards academics and involvement with the schools as the United States entered the period of the modern environmental movement. Outdoor

education arrived at universities at the undergraduate and graduate level. Teacher and leader training programs sprung up across the country (Smith, 1972). Manuals and handbooks created uniformity across the nations' outdoor programs, now referring to themselves as "outdoor schools," "outdoor laboratories," and "schools-in-the-woods." In part, these changes came from a shift in consciousness regarding environmental issues. With the recognition that humans are, indeed, a part of the ecosystem that will suffer along with the insects being sprayed for, as brought to the public eye through Rachael Carson's "Silent Spring," schools took an increased interest in teaching ecology, particularly in the captivating outdoor classroom. While in the fifties, the primary goal of outdoor education was teaching social living skills and group processes, by the sixties, ecology became a competing goal (Hammerman, 1980).

By the seventies, not only did the passage of the Environmental Education Act of 1970 demonstrate acceptance of environmental education into the mainstream, but it also affirmed the slew of new programming in the field (Roth, 1980). In 1977, UNESCO wrote the Tbilisi Document, famous in the field for its international recommendations for developing environmental education. The growth of environmental education out of outdoor education addressed a new need in the United States. Environmental education would teach students how to solve environmental problems through a hands-on understanding of ecology and the natural world. Meanwhile, adventure education programs such as Outward Bound School and the National Outdoor Leadership School (NOLS) grew and spawned copycats at camps and institutions such as Job Corps, VISTA, and private schools. These programs operated with the same goals as previous

programs designed for self-discovery and personal growth. By this point, resident outdoor schools became a typical part of many schools' curriculums and opportunities for special populations increased in all realms of outdoor education (Hammerman, 1980). The seventies saw an expansion in the diversity of outdoor education due to an increased acceptance of the field. This acceptance allowed people to expand their ideas of the roles outdoor education could play and the needs it could address. Not only could outdoor education develop the individual, take learning out of the classroom and into a more stimulating environment, but it could also play a role in solving the major environmental issues that faced the nation in the latter part of the twentieth century.

Environmental Ethic and Adventure Education

There are many variations on the theme of outdoor education, from half-day, team-building field trips to semester-long, academic programs. For the purpose of this study, I looked at *adventure education*, where students generally spend over two weeks living in the backcountry and must therefore learn minimum impact camping and backcountry resource conservation. The skills that students learn in this realm are likely to be specific to the particular area and mode of transportation of their course. Moreover, these skills, while crucial in protecting preserved areas from the potentially abusive effects of human visitation, will likely apply specifically to preserving the area they visit during the time of that visit. Yet, most people will have far more impact on our global environment and perhaps even on those protected areas during the course of their daily lives than in their visits to wilderness settings. Some adventure education programs may

not include instilling an environmental ethic or promoting a lifestyle of environmentally responsible behavior in their students as one of their goals, but rather focus primarily on character development, leaving changes to students' environmental ethic as an additional benefit that may or may not take place as a result of the course. However, many adventure education programs do include instilling an environmental ethic in their mission, goals, and instructor training. For example, the mission statement for National Outdoor Leadership School (NOLS) implies that goal in the following statement, "The mission of the National Outdoor Leadership School is to be the leading source and teacher of wilderness skills and leadership that serve people and the environment" (NOLS, ¶1). As leaders in the field and trainers of many outdoor educators, the more successful NOLS is at achieving their mission, the more we should see aspects of their mission reflected and promoted in the field of outdoor education.

Nonetheless, the word "environment" may mean different things to different people, ending for some when they take off their hiking boots and return to "civilization." This research examines how the local example of leaving no trace may or may not inform living a less resource consumptive lifestyle on a more global scale. The question becomes, does the environment end at the wilderness boundaries for students, or to what extent are they able to carry home and expand their knowledge of living lightly?

Outdoor Education Defined

In 1958, Donaldson and Donaldson coined a definition of outdoor education, widely accepted within the field, as "education *in, about and for* the outdoors" (p. 63). *In*

referred to the outdoor setting of the educational experience, *about* signified that the subject matter would be the natural world, and “*for the outdoors*” meant that the purpose of the learning experience was the preservation of the planet. More recently, people have taken issue with all aspects of that definition, as the term outdoor education is understood to encompass activities that take place indoors as well as in various outdoor settings; learning experiences focused on a range of subjects from ecology to personal growth and the goals of outdoor education span from environmental responsibility all the way to drug and alcohol rehabilitation (Parkin, 1998; Priest, 1986).

In the mid-1980’s, Priest (1986) attempted to assuage some of those discrepancies through a redefinition of outdoor education as “An experiential process of learning by doing, which takes place primarily through exposure to the out-of-doors. In outdoor education the emphasis for the subject of learning is placed on *relationships*, relationships concerning people and natural resources” (p.13).

Priest (1986) expands upon his definition by describing the four categories of relationships as the *interpersonal*, the *intrapersonal*, the *ecosystemic* and the *ekistic*. The first two categories describe human relationships: those between people and the relationship with oneself, respectively. Ecosystemic relationships are those occurring within an ecosystem, such as succession and food webs. The term ekistic refers to the relationship between people and their environment. If outdoor education can be thought of as having two main branches, adventure education and environmental education, typically environmental education focuses more on the ecosystemic and the ekistic,

whereas adventure education delves more deeply into inter and intrapersonal relationships. However, Priest clarifies that much overlap is bound to occur, both in curriculum and in what students will take from the experience.

Adventure Education

Although the term *adventure education* brings to mind militaristic experiences or conquering physical activity in the minds of some, the phrase is intended to imply the inclusion of risk. That risk may be psychological, such as leaving friends and family behind in order to live with strangers or making oneself vulnerable by verbally exposing fears. The risk might also take the form of physical challenge, such as climbing a mountain, canoeing through the night or backpacking into an area where rescue or evacuation could take days. Ewert (1989) makes the distinction between *real* and *apparent* risk, where the former actually exposes the participant to the possibility of injury or close calls. On the other hand, *apparent*, or *perceived risk*, poses the illusion of danger and for obvious reasons is most often employed in adventure education. Those risks, however, are not the end goals of the experience, but rather a vehicle for growth. Miles and Priest (1990) elegantly frame the concept in the introduction to "Adventure Education" as:

The defining characteristic of adventure education is that a conscious and overt goal of the adventure is to expand the self, to learn and grow and progress toward the realization of human potential. While adventure education programs may teach such skills as canoeing, navigation, rock

climbing and rappelling, the teaching of such skills is not the primary educational goal of the enterprise. The learnings about the self and the world that come from engagement in such activities are the primary goals (p.1).

Why Adventure Education?

I chose to focus on adventure education because I believe that it represents a reasonable opportunity for individual transformation. A person who spends several weeks sleeping under the stars, carrying all their necessary belongings on their back, and fetching their water from streams has a higher likelihood of undergoing an attitudinal and even behavioral shift than one who does not step outside their weekday commute. Having participated on an adventure education course as a teenager and then instructed similar courses later on in life, I have experienced, and heard students describe, the shock of returning home a changed person. For a time after that homecoming, it becomes difficult to turn on a faucet without thinking back to the water source and the amount of energy it takes to get clean water to drink. The necessity of all the things that one lived without for that time, including electricity and permanent shelter, suddenly comes into question. The connected nature of resources on earth is simply more sharply in focus immediately after the experience. According to John Miles (1990):

Valuable lessons that are useful in life's larger context are learned in adventure education. Some of these lessons can and should be about the human species' relationship to and its dependence upon, nature. Students,

most of whom will come from urban backgrounds, can learn to see nature in new ways, to appreciate how complex, beautiful, and organized it is.

Awareness that they, as humans, are nature-bound by ecological constraints can grow. Humility in the face of grand space and time can give perspective on human enterprise. Human control of nature can perhaps be seen for what it is – an illusion. All of these lessons can help the students understand themselves as humans, as members of the biotic community. Perhaps they can even begin to grasp their special responsibility as human beings, which derive from their understanding of how nature works. Humans are, as far as we know, the only organisms who are conscious of the process of evolution and can make decisions accordingly. We may come to see this gift of knowledge as a burden and an opportunity, but we will not be able to escape it. Thus, wilderness education can be an introduction to planetary citizenship (p. 328).

But that feeling need not last long and may not apply to environmental issues that are unrelated to the practiced or preferred activity (Dunlap & Heffernan, 1975; Jackson, 1986). Many students will return to a family and peer group that has not gone through a similar experience and will not understand their changed attitudes and behaviors. It is therefore possible that the student will fly home from their trip, get in their car, and return to a high impact lifestyle that is difficult to avoid in our culture. Clearly, it is of interest to investigate why such a facile return to a high impact lifestyle is the norm. Conversely, what obstacles preclude the transference of

the low impact camping model to daily life once one is removed from wilderness?

One motivation behind this study lies in a critical examination of these two issues.

Gass (1990) outlines three transfer theories to explain how learning is transferred from one environment to another: *specific*, *non-specific* and *metaphoric*. The first refers to transfer from one activity to another similar activity. For example, a student may use knowledge gained from belaying when rappelling for the first time. Non-specific transfer takes place when general ideas, principles and attitudes, rather than specific skills are transferred. In this case, adventure education students might find themselves stepping more easily into leadership roles at home, thanks to successful experiences in leading the group on course as leader of the day and in other situations. In order for non-specific transfer to take place, the student must have the ability to generalize, transferring the ideas and principles surrounding leadership in an outdoor, structured, group setting to dorm life or the college classroom experience, for example. Finally, for metaphorical transfer, the student must also have the ability to generalize, but in this situation, the principles are not the same, but rather are analogous or metaphorical. An experience is metaphoric if the elements of one experience are represented by the elements of the other (Bacon, 1983). Therefore, while the primary intent of teaching minimum impact practices is clearly to protect the wilderness and other preserved areas from human use and abuse, the opportunity arises for a metaphorical transfer of those principles to other portions of the students' lives outside of the course area and activities.

This research thus examines the complexities of and any obstacles impeding the transfer of minimum impact ideology from outdoor education students' backcountry

experience to their daily lives. Two of the specific questions posed are: 1) how do students apply their knowledge and understanding of living lightly in the wilderness to their lives at home, and 2) what aspects of their outdoor education experience best facilitates this transfer? In the exploration of those questions, I conducted a series of interviews to gather information on the students' environmental ideology, their attitudes towards environmentally positive behavior and activism, their ideas of nature, and the effects of the homes and communities they return to on their ability to act in accordance with their environmental values. In addition, I documented students' perceptions of the teaching and trip experiences that may or may not have led towards the above-described transfer of environmental ethic. Their stories shed some light on these issues, lending insight into the ways in which one adventure education program, NOLS, achieves success and where it and the field of adventure education have room to grow.

Chapter Two: Review of the Literature

Overview

A change towards environmentally responsible behavior is generally considered a desired goal in environmental education (e.g. Hungerford and Volk, 1990; Newhouse, 1991; Tbilisi Intergovernmental Conference on Environmental Education; 1978), of which adventure education has the potential to be a highly effective sub-sector, due to the lengthy duration and wilderness setting of many of these programs. However, very little research focuses on the connection between environmentally responsible behavior and adventure education programs (Hanna, 1995; Haluza-DeLay, 2001). Indeed, even in research on the outcomes of all forms of environmental education, much centers around tangentially related measures of self-concept or on attitude rather than behavior. *The former issue is likely a result of the previously discussed grouping of all forms of outdoor education under the heading of environmental education, despite the fact that outdoor educators' goals may vary dramatically based on the program.* The latter bias stems both from the contribution of attitude to behavior (Ajzen, 1988) and from the overt challenges posed by studying changes in behavior. Behavior is difficult to observe directly without intruding into every moment of research subjects' personal lives. Thus, much of the behavior research relies upon self-reported behavior. A limited body of

research tests a set of hypotheses concerning the connection between outdoor activity and environmental concern. An even more narrow set of studies poses a relatively focused question regarding the connection between adventure education and increased environmental concern and behavior. The following chapter examines the relevant literature on behavior models and the above-mentioned subjects.

Behavior Change

Models of Behavior Change

A fair amount of research has gone into the factors that lead people towards particular behaviors, including those that are environmentally responsible. The literature shows no direct correlation between any single factor and behavior, but rather demonstrates that several variables such as knowledge, intention and attitude interact to influence behavior (Ajzen, 1988; Borden and Schettino, 1979, Hines, Hungerford and Tomera, 1987; Hungerford and Volk, 1990). Before looking at research on environmental behavior in particular, it is important to examine Ajzen and Fishbein's Theory of Reasoned Action (1980), which later evolved into Ajzen's Theory of Planned Behavior (1988), and is often cited in the field of environmental behavior theory.

The Theory of Reasoned Action (Ajzen, 1980) is based on the idea that people are likely to act in line with their intentions. Intention is said to come from personal determinants, made up of attitudes towards the behavior, and from a subjective norm, or reflection of social influence. More specifically, a subjective norm is the perception of

social pressure from relevant people to perform or not perform the behavior. Thus, according to this theory, people are likely to perform a behavior when they have a positive evaluation of the behavior and they think other important people in their life want them to perform that particular behavior. Of course, opportunities, resources and obstacles also play a role in whether or not a behavior is carried out. The Theory of Planned Behavior (Ajzen, 1988) attempts to address these external factors by adding a third determinant of intention to the factors of personal determinants and subjective norms. That third determinant is perceived behavioral control, which may or may not reflect the actual control a person has over a situation. However, Ajzen asserts that when perceived behavioral control is an accurate reflection of actual control, the former has a direct link to behavior, rather than feeding into intention and then behavior. However, when a person has little information about a behavior or when external factors change to make their perceived behavioral control unrealistic, then perceived behavioral control will have little direct predictive value over behavior.

Hines et al.'s (1987) oft-described Model of Responsible Environmental Behavior, derived from a meta-analysis of 128 behavior studies written between 1971 and 1986, depicts a different basis for the intention to act. Hines's model states that personality factors (made up of attitudes towards the environment, locus of control and sense of personal responsibility) combine with knowledge of action strategies, action skills and knowledge of issues to create an intention to act. Essentially, for a person to act upon an issue, they must know the issue exists and understand what they can do about it. The person must also have the desire to act; a component that Hines et al. believe is

influenced by the previously mentioned personality factors. Studies have shown that outdoor education programs can positively influence personality factors such as locus of control (Hattie, 1997) and have varied effects on attitudes towards the environment depending on length of course, previous exposure to the outdoors and when in relation to their course the subjects are asked to report their attitudes (Shepard and Speelman, 1985; Perdue and Warder, 1981). However, I have not found any studies that specifically looked at connections between the various factors and changes in environmentally responsible behavior. While adventure education courses typically teach students action strategies for reducing their own impact on the wilderness areas in which they travel, I did not come across research showing that students come away from their courses with increased knowledge or a set of action strategies around environmental issues outside of those Leave No Trace or minimum impact skills that are taught to dampen recreational damage to "pristine" lands. In addition, it is important to keep in mind that the teaching of environmental issues and action strategies varies from program to program and again from course to course depending largely on the individual instructors and the mission of their organization.

Hines et al. (1987) point out that while intention to act leads to a greater likelihood of action than no intention to act, it is not the sole factor leading one towards responsible environmental behavior. Even with the intention to act, situational factors come into play, facilitating or obstructing the intended behavior. The implications of this aspect of the model for this study imply that while students may describe an intention to act in an environmentally responsible manner immediately upon completion of their

course, it is important to follow up on their actual behaviors and to explore those situational factors once the students have settled back in to their home environments and routines.

Hungerford and Volk pose a variation on the Hines et al. model (1987) in their 1990 conference paper, "Changing Learner Education through Environmental Education." Hungerford and Volk cite the Hines model as important, but incorporate nine studies taking place simultaneously with the Hines meta-analysis to create a somewhat more expansive model that describes the factors playing into "citizenship behavior," or environmentally responsible behavior on multiple levels. Thus, the authors primarily attempt to focus the environmental education field on a model of behavior change that leads to generalizable and daily environmentally responsible behaviors, rather than changes in behavior that focus solely around single issues. They describe three categories of variables that influence behavior. Those three variables behave in a linear, yet complex fashion leading to behavior change. The first category is Entry-Level Variables, the most important one being environmental sensitivity; the second is Ownership Variables, made up primarily of knowledge about and personal investment in environmental issues; and the third is Empowerment Variables, including knowledge and skills in environmental action strategies, locus of control, and intention to act. Hungerford and Volk close by suggesting that teachers move beyond raising awareness around specific environmental issues towards providing the occasion for students to increase their general sense of ownership and empowerment as citizens. This recommendation implies that the raising of

awareness around specific issues is successfully being achieved in environmental education – an assumption that asks for further investigation as it applies adventure education.

An example of the complexities of the interaction between variables described by Hungerford and Volk (1990) appears in the well known Borden and Schettino 1979, “Determinants of Environmentally Responsible Behavior” study, which found that affect and knowledge are additive, rather than interactive, in influencing environmental action. The authors of this quantitative study (included in the 1990 Hungerford and Volk meta-analysis) administered a test to a sample of over 500 college students with questions regarding affect, knowledge, actual commitment and verbal commitment. They found that students with high levels of either knowledge or positive affect described similar levels of current commitment to solving environmental problems, with high affect students calling themselves slightly more committed. Students with high levels of both did not show disproportionately high levels of current commitment, leading the authors to label the contribution of the factors to commitment as additive. However, the study also showed that while both affect and knowledge are important for influencing current action, it is primarily affect, or emotions toward the environment, which appears to influence future commitment to environmental action. The implications reinforce the idea that both knowledge and “personality factors” such as attitudes are important factors leading a person towards environmentally responsible action and demonstrates that both factors have individual value.

Environmentally Responsible Behavior: Outcome Research

Multiple studies have attempted to quantify the outcome of outdoor education programs, with varied results. Leeming, Dwyer, Porter, and Cobern. (1993) reviewed 34 studies that looked at changes in environmentally relevant knowledge, behavior, and/or attitudes. The authors divided the studies into in-class or out-of-class environmental education programs, with half falling into each category. The authors fault most researchers for avoiding studying behavior (including both observed and reported behavior) and for poor designs that leave out control groups, follow-up data, and other issues. They conclude that although most researchers find positive changes as a result of environmental education programs, their unreliable research design mitigates our ability to assess those results. The researchers urge more people to study behavior, as they indirectly say that changing behavior is most important outcome of environmental education.

While Leeming et al. (1993) found only five studies that measured behavior, in 1999, Zelezny wrote a meta-analysis solely involving 18 behavior studies. He divided the studies into classroom and non-traditional settings, the latter of which included workshops, nature camps, and field studies. The author included not only observed behavior, but also reported and inferred behavior. Zelezny found the classroom interventions to be more closely associated with behavior change, in contrast to findings that environmentally responsible behavior is related to experiences in nature and active out-of-classroom participatory experiences (Dresner & Gill, 1994; Jordan, Hungerford, &

Tomera, 1986; as cited in Zelezny, 1999). However, few outdoor programs were included in the meta-analysis, and Zelezny also found that the classroom interventions tended to involve more active participation than did the out-of-classroom programs. Thus, his findings regarding the difference between in and out-of-classroom programs may have more to do with the particular programs being studied than with the location of the programs. Regardless, active participation must not be the only influential factor, for while all classroom interventions were found to increase pro-environmental behavior, only half of the six non-traditional interventions that included active participation demonstrated significant positive effects on behavior change. Zelezny found that behavior change was greatest in participants 18 years old or younger, an effect that may have resulted from the increased duration of the interventions for younger people. The relative ineffectiveness of the interventions in non-traditional settings may also have arisen from the short duration and the increased occurrence of adult participant in these types of programs. All of the studies included in the meta-analysis used quantitative methodology, highlighting a need for a more in-depth analysis of the subject matter that qualitative research can provide.

A study in the field that looks retroactively at influences on behavior is Tanner's (1980) study on significant life experiences, notable due to its qualitative methodology, which allowed the participants to speak for themselves regarding their motivation towards environmentally positive behaviors. Tanner used interviews as the method of data collection. He says that the methodology was not particularly rigorous, but does not specify what aspect of his research design lacked rigor. Tanner contacted

environmental activists and asked them to describe what led them towards their current interests. He found that time spent in the outdoors as a child was the dominant influence in his study participants' lives. This led him to the idea that, "Children must first learn to love the natural world before they can become *profoundly concerned with maintaining its integrity*" (p.23). Clearly, a prolonged outdoor education experience could provide the opportunity for developing the love of the natural world that Tanner refers to, particularly for individuals that live in urban centers. However, many NOLS participants may be older than the subjects of Tanner's study were at the time of connection with the natural world and thus may not be as easily influenced to develop a "*profound concern.*" On the other hand, the self-selected group of NOLS students may already have developed that love and connection prior to their course. Both of these subjects deserve further inquiry with regards to the effects of adventure education courses on students' environmental ethic.

Outdoor Recreation and Environmental Concern

What little research there is on the connection between outdoor recreation and environmental attitudes centers around a widely cited and repeated 1975 study by Dunlap and Heffernan and demonstrates conflicting results. Developing their three hypotheses from the existing literature, the authors of the original study divided participants of outdoor recreation into two categories: those who engage in "appreciative" activities versus those who engage in "consumptive" activities. Appreciative activities included photography, camping, and hiking, and did not involve alteration of the natural

environment. The latter category includes hunting and fishing, and generally involved a more utilitarian orientation towards nature. The first hypothesis predicted a positive connection between participation in outdoor recreation and environmental concern. The next predicted a stronger association between appreciative activities and environmental concern than between consumptive activities and environmental concern. The third hypothesis predicted a stronger association between participation in outdoor recreation and environmental concern for protecting those areas used for recreation than for more "distant" environmental concerns.

Their findings demonstrate only weak support for their first hypothesis, primarily because of little positive association between participants in consumptive activities and environmental concern. When separated out into appreciative and consumptive for the second hypothesis, Dunlap and Heffernan (1975) found substantial support for their second hypothesis. Their third hypothesis is also well supported, with participants extending very little environmental concern to environmental issues such as pollution from vehicles and industry. A potential flaw of this study and those that follow is that they do not take into account the overlap between participants of appreciative and consumptive activities, such as people who enjoy both hiking and fishing.

Several studies in the next decade posed the same hypotheses as Dunlap and Heffernan (1975) but varied the manner in which environmental concern and categorization and reporting of outdoor activity were measured. The studies showed varying results from contradictory to supportive. However, two of the studies, which immediately followed the original study and did not support Dunlap and Heffernan's

hypotheses, used poor measures of environmental attitudes (Geisler, Martinson, and Wilkening, 1977; Pinhey and Grimes, 1979; as cited in Van Liere and Noe, 1981) The subsequent study by Van Liere and Noe (1981) used more rigorous methodology, aiming to discover the participants' worldview, rather than more superficial measures of environmental attitude. They still found only weak support for the Dunlap and Heffernan hypotheses, but postulated that perhaps the study design and measurement tools were still not rigorous enough and that the associations must be more complex than previously assumed. This justified Jackson's study in 1986, which tested slightly varied hypotheses and relied upon a methodology that could measure dimensions of attitude by using multi-item scales. Jackson found substantial support for his first hypothesis, which stated that, "Participants in appreciative activities will exhibit stronger pro-environmental attitudes than participants in consumptive or mechanized activities" (p. 9). He also found substantial support for his second hypothesis, predicting a stronger relationship between outdoor recreation participation and attitudes towards aspects of the environment needed for those activities than for "distant" aspects of environmental issues.

These findings imply that adventure education participants (depending on the activity they engage in) will increase their level of environmental concern for the areas necessary to carry out their activity, but may not transfer that concern for other aspects of the environment. This implication will surely concern outdoor educators and those who recognize the interconnectedness of various ecosystems and all life on earth.

The most recent study by Tarrent and Green (1999) on outdoor recreation and environmental attitudes sought to forge a connection between those two factors and

environmental behaviors. Using the appreciative, consumptive and motorized categories for outdoor activity, multiple scales of environmental attitudes and an 11-item environmental behavior scale, the study involved 1220 telephone interviews of residents of the Southern Appalachians. The findings showed that participating in appreciative outdoor activities had a mediating effect on the attitude-behavior relationship, while participating in consumptive or motorized activities did not. In other words, there was a significant relationship between attitude (the predictor) and appreciative activity (the mediator in this case); behavior (criterion) and appreciative activity; and a relationship between attitude and behavior that was reduced to zero or close to it when they controlled for the effect of the appreciative activity. Thus, while attitudes may not be a strong predictor of environmentally positive behaviors, Tarrant and Green found that participation in appreciative activities improves the predictive value on environmentally positive or responsible behavior of those activities. Although their study did not focus on educational experiences, the results may carry over to adventure education courses that include long stretches of backpacking, albeit often interspersed with consumptive activities like fishing and activities that, while not mechanized, require more equipment for participation, like mountaineering and white-water rafting.

Transfer of Environmental Ethic in Adventure Education: Behavior and Attitude

I found few studies that look directly at the effects of adventure education programs specifically on participants' environmental concern or environmental behavior. Haluza-DeLay's 2001, "Nothing Here to Care About: Participant Constructions of 'Nature' Following a 12-day Wilderness Program," appears to be one of the only published studies looking directly at adventure education programs with the goal of uncovering students' wilderness perceptions and their environmental concern upon returning home from their course. Using a qualitative methodology, Haluza-DeLay found that the teenagers participating on the trip conceived of nature as separate and far away from home. Participants' responses during interviews suggest that the students came away from the course with a diminished motivation towards environmental action at home, as they did not perceive "nature" to exist in their home surroundings. The students showed little ability to connect the care for the environment they had practiced or discussed on their trip to their lives at home.

Several methodological issues may confound the results of this study. Haluza-DeLay (2001) accompanied the course and participated actively, making observations and taking notes at night, with the goal of building rapport with the participants. It seems that this aspect of the study could have led to social desirability bias in the students' responses during the series of interviews that followed the course, due to the students'

relationship with the researcher. Moreover, the researcher did not conduct pre-trip interviews, which makes it difficult to extrapolate whether the students entered the course with set definitions of nature that excluded it from civilization and society, or whether the students formed those concepts on the course.

Hanna calls her 1995 study the first longitudinal study in a very narrow field of research looking at the environmental outcomes of adventure education. Hanna used qualitative and quantitative methods to look at changes in wilderness related behavior, attitude, knowledge, and intention related to participation in adventure education and ecology education programs. The research compared Outward Bound School (OBS) students with Audubon students, and created a model of reasoned wilderness behavior that states that behavior depends on predisposing factors combined with the development of beliefs, attitudes, and intentions. She found that the Audubon students came into the program with more relevant knowledge and received more specific guidance for behaviors after the course than did the OBS students. Hanna found a strong relationship between knowledge and attitudes, a slightly weaker relationship between attitudes and intentions, and a relatively weak connection between wilderness-related intentions and reported behavior six months later. Hanna explains that while Audubon students had the support, skill, motivation, knowledge and locus of control to follow through, they still did not follow through on their intentions. She was less surprised by the lack of follow through from the OBS students, who were apparently actively advised not to join existing environmental organizations, but to go at it alone. She does not explain this odd recommendation from Outward Bound, which may have been the individual instructor's

prerogative. Hanna hypothesizes that most of these 30-something participants returned to their busy lives and found themselves without the time to follow through with their intentions. Hanna also found, however, that the Outward Bound group showed the greatest gain in ecocentric, or nature/environment centered, attitude towards wilderness, which Hanna attributes to their particular instructor's interest in that viewpoint. Based on the connection she found between knowledge and attitudes, and because of participants' unmet expectations in this regard, Hanna calls for greater instruction on ecological concepts by adventure education programs. She also supports the discussion of wilderness and environmental issues on adventure education courses, due to the jump in ecocentric attitudes that Outward Bound students showed in her research, and calls for greater training of instructors in these realms. Finally, Hanna calls for discussions, during the course, of participants' post-trip environmental and wilderness related intentions.

Another closely related study is a masters thesis, a quantitative study titled, "Responsible Environmental Behavior: Metaphoric Transference of Minimum Impact Ideology," which used National Outdoor Leadership School (NOLS) students as subjects. Hammitt, Freimund, Watson, Brod, and Monz (1995) administered before and after surveys about home behaviors to 288 students before, during and at several points after their NOLS course. The results demonstrate that reported behavior was significantly more environmentally responsible after their NOLS course. The large sample size, the focus on behaviors, and the four to eight month follow up all lend credibility to this study. However, in his paper, the author calls for replications of the study with control groups, further focus on happenings in the field, and examination of the type of person

who chooses to participate on a NOLS course. In addition, the quantitative nature of the study leaves little room for understanding the complexities of behavioral shifts. Some students may have undergone behavioral change in areas not covered by the survey, such as in political activism, but have done little to change their daily behavior. In a 2004 phone conversation with the author, Hammitt suggested that the most important follow-up study would be a qualitative study to address those complexities.

Chapter Three: Methods

Overview

This study relies on data I collected from a series of interviews with nine recent students and one interview each with ten alumnae from the adventure education program, National Outdoor Leadership School (NOLS). I chose NOLS due to its reputation as one of the top adventure education programs in the nation, the leadership role it plays within the field of outdoor education due to that reputation, and the high proportion of outdoor adventure educators that begin their careers with a NOLS course.

The nine students in the summer of 2005 subject group participated on a month long backpacking course and I spoke with them before, within the first few weeks after, and several months after their course that took place during the summer of 2005. Most of the subjects were on different courses with different instructors, although there were two subjects who happened to be on the same course. I also spoke with ten alumnae who were involved in a wide range of NOLS courses throughout the past 27 years, with the goal of obtaining a long-term perspective of their ideas of the effect that their NOLS course or courses had on their lives.

The 2005 subject group's interviews typically lasted about an hour for the first two interviews with the final follow-up interview lasting around twenty minutes. The alumnae interviews lasted from thirty minutes to an hour. All interviews took place over the phone with the goal of decreasing social desirability bias.

Although I did not see a conceivable manner of employing a control group, I did attempt to speak with students taking part in Outward Bound School (OBS) courses during the summer of 2005 as a comparison group. OBS focuses primarily on personal transformation, with a change in student's environmental ethic viewed as a potential side effect, rather than as a direct goal. Therefore, OBS generally has less curriculum and evaluations geared towards a change in environmental ethic than does NOLS. However, it is important to note that what happens on course is largely dictated by the instructors and the circumstances of the course and that OBS has several branches that do not all use the exact same curriculum. However, I was unable to secure interviews with any OBS students, as described later in this chapter.

Interviews were taped, transcribed and then carefully examined for themes in responses to the questions described below and found in appendices A through D. I first broadly coded the interviews using categories that arose naturally from the questions: nature and the outdoors, environmentally positive behavior, and perceptions of self-efficacy. From there, I broke the interviews down into more narrow themes, first those that arose primarily due to the questions asked, and then based on areas that arose more organically from subject's responses. For example, I gathered all participants' comments on the source of their environmentally positive behavior in part of a document with all

the comments on behavior. They provided these in response to a question on the topic. However, if subjects returned to that subject in other parts of the interview or in another interview, I likewise grouped those comments with the other statements on subjects' source of environmentally positive behavior. Some themes, such as comments around an increase in self-confidence, became clear from subjects' responses despite the fact that I did not ask a question about confidence in particular. I then placed these responses together as part of a document containing all the comments on perceptions of self-efficacy. Then, within the groupings described above, in different colors, I highlighted themes that arose from subjects' responses, such as "increased awareness due to course" or "no change as a result of NOLS." In addition, within each coded category, I kept responses separate based on subject group (summer of 2005 or alumnae) and based on first, second or third interview in the case of the summer of 2005 subjects. Finally, the writing of this document served as another layer of coding, as themes and connections surfaced or became more prominent through the process of describing the results in a clear and coherent manner.

Interview Questions

I generated the questions over the course of about twelve weeks with some final changes taking place concurrent with the initial interviews. As subjects' environmentally positive behavior could not realistically be observed over a significant period of time, they were asked to describe their own behavior. With the goal of recognizing any potential contributions the subjects' NOLS course had on their behavior,

participants were not only asked to describe their behavior before and after the course, but were also asked questions based on the behavior models described in the preceding chapter. Ideally, their answers would shed some light on the effect of their courses on the factors believed by behavior theorists to contribute to behavior change. Generally, questions were intended to invite the interviewee to describe their experiences and relationship with nature and the outdoors; their environmental behavior and attitudes; and their self-concept before, immediately after and several months after their course.

The initial, pre-trip interview of current NOLS students was intended to provide a baseline for the above-mentioned topics. Subjects in the alumnae group were asked to reflect upon the effect of their NOLS course or courses upon those same areas of their lives. (See Appendices A, B, C and D) In addition, the initial interview for current students and the sole alumnae interview began with a series of demographic questions. I asked participants about their age, hometown, occupation and their parents' occupation. These questions were included in order to gain some background information on these students, which could be used in analyzing the data. Although this study does not focus specifically on differences in class, gender, race or geography, it was thought that the information could provide an alternative means of analysis or may prove valuable at a later date.

The questions that followed became more open ended, providing subjects with the opportunity to relay anecdotes and stories about their experiences. For the summer of 2005 subject group, similar questions were repeated immediately post-trip and several months after the students returned from their courses, with the goal of discovering any

reported shifts in behavior or attitude over time. Follow-up questions in the post-trip interviews asked subjects specifically if they thought their NOLS experience had influenced any changes in perceptions of nature, their behavior or their self-efficacy over time.

The open-ended series of questions began with queries into subjects' previous experiences in nature, what those had meant to them and their definition of the words nature and wilderness. The answers to these questions were intended to describe the subjects' environmental sensitivity, which Hungerford and Volk (1990) consider the most important "Entry Level Variable," as described in their 1990 model of environmental behavior change.

Next, I asked participants several questions about their level of environmentally positive behavior or environmental activity. Follow-up questions sought reasons why subjects engaged in those activities; any deviations from their practices and how they feel when deviating; what more they would like to be doing and why they are not or what might motivate them towards further action. I based the later questions, concerning intention, on Ajzen's (1988) Theory of Planned Behavior. Later on in the interview process, subjects answered questions regarding the behaviors of their friends and family, clarifying the subjective norms that Ajzen describes as combining with personal determinants and perceived behavioral control to form intention, which may predict behavior. Subjects rated themselves on a scale of one to five in the realm of environmentally positive behavior and then described what actions placed them at that level. If subjects focused solely on one realm of environmental activity, such as recycling

and picking up trash, I followed-up with broad probes regarding other forms of environmentally positive behavior, such as asking if they engaged in any political activism or asking for an expansion upon environmentally friendly lifestyle choices. In the pre-trip interview, however, I attempted to minimize the use of specific prompts such as, "Do you consider resources in your purchasing decisions?" in an effort to avoid influencing subjects' thoughts and behaviors around environmental activism and behavior. In the post-trip interviews, however, I asked about specific behaviors, both political and daily acts, in hopes of sparking the participants' recall and broadening the scope of discussion. Some of the behaviors selected were based on the measures of daily environmentally responsible behavior used by Hammitt et al. in his 1995 quantitative study, "Responsible Environmental Behavior: Metaphoric Transference of Minimum Impact Ideology." It was assumed that deeper probing into behavior after the students had participated on the course would not skew the results of the study by influencing behavior in a way that could be confused with the effects of the NOLS course. Most subjects should be able to recall what they did or did not do before the course took place.

I then asked participants if they felt particularly passionate about any environmental issue, how they became aware of that issue, and what (if anything) they have done to address that issue. Several probes to that question were based specifically on the Hines (1987) and Hungerford and Volk (1990) models of behavioral change. In particular, I asked about subjects' sense of empowerment and responsibility, knowledge of issues and knowledge of action skills surrounding environmental action. These questions correlate directly to Hungerford and Volk's Ownership and Empowerment

Variables, which in combination with the Entry-Level Variables noted above, describe the factors contributing to behavior change. Other questions focused on what participants expected from their course or what they got out of their course, contingent on the subject's phase in the process.

It is possible that despite the precautionary measure of conducting interviews over the phone in order to decrease social desirability bias, that subjects may not have been completely honest in their responses. In asking questions, I assured participants that I was not seeking any particular answers and attempted to frame the questions in an open manner that would not imply preference of any specific response.

Subject Selection and Recruitment

Subjects were recruited from NOLS with an initial bulk email to all eligible students (over 18 years old) on Wind River Wilderness (WRW) courses taking place during the summer of 2005 and to regional groups of NOLS alumnae. Interested parties responded with an email to the principle investigator, at which point they received an electronic version of the consent form and recruitment flyer. When participants returned the consent form by mail, fax or electronically, they were contacted by email to set an interview time. I sent self addressed stamped envelopes and hard copies of the consent form and recruitment flyer at participants' request.

With the help of NOLS, I selected WRW from the many courses that NOLS offers, due to the duration and the nature of the activities that take place on that course. Based on the Dunlap and Heffernan hypotheses, and despite potential flaws in said

hypotheses, the WRW course appears to have the highest ratio of “appreciative” versus “consumptive” activities as compared to other NOLS courses that include more rafting or mountaineering as opposed to backpacking. In addition, NOLS considers WRW to be the “classic” NOLS course. Based on findings that longer programs have greater effects than shorter programs (Cason and Gillis, 1994; Hattie, 1997; Shepard and Speelman, 1986), the relatively lengthy, 30-day WRW course seemed like a course with significant potential for influencing environmental attitudes and/or behaviors.

Of those approximately 232 students participating in a summer of 2005 course who received the initial email, nine responded directly to the principle investigator and eight of those nine participated in the study. However, as I hoped to have 15 subjects in this category, NOLS sent out a second bulk email, albeit fairly late in the season at this point, to 38 students on similar courses in Alaska and in Washington. Of those students that received the email, only one responded and participated in the study, bringing the number of students participating in both a summer of 2005 NOLS course and this study up to nine.

Regarding alumnae, the research design called for five alumnae who participated in WRW courses five and ten years ago. This time, NOLS contacted a listserve of 80 alumnae with a request for participants with the above-mentioned qualifications, resulting in zero responses. At that point, at the suggestion of NOLS curriculum director, John Gookin, I modified the criteria to include alumnae of any year who had participated on any course. Alumnae groups from Washington D.C. and the Pacific Northwest region received the recruitment email. Of the approximately 550

alumnae contacted, twelve responded and ten participated. The final group of alumnae whom participated in the research had gone on a range of NOLS courses from an Australian semester course to WRW courses. Alumnae course years ranged from 2003 all the way to one of the first NOLS courses in 1978.

I intended to recruit Outward Bound subjects through a mass mailing to all eligible students on several courses deemed similar to the WRW NOLS course. Staff at Outward Bound agreed to participate and reported that they would send the recruitment flyer, consent form and a self addressed stamped envelope to eligible students. However, despite multiple communications with Outward Bound staff, I received no consent forms from any Outward Bound students at any point during the study, indicating that either no students were interested or none received the original information.

Interviews and Analysis

Each subject in the summer of 2005 group participated in three interviews, with the exception of one subject who participated in only two. The first round of interviews took place between May and July of 2005 and several days to several weeks before the subjects began their NOLS course. The second round of interviews took place within the first two weeks after subjects returned from their courses during the months of July and August. Only Paul did not participate in a second interview because of his lack of access to a telephone during that time. The third round of interviews occurred during

November of 2005, three to four months after subjects returned from their course.

Alumnae interviews took place in October and November of 2005, three to twenty-seven years after subjects completed their first NOLS course.

All of the interviews were transcribed for analysis, at which point I coded and combed through the results for themes, as described above, and for relationships with behavior models discussed in the review of the literature.

Chapter Four: Results

The information in this chapter came from the series of phone interviews described in the previous chapter. Thus, all the information is self reported and has not been corroborated by observation. All the names used are pseudonyms. The findings are grouped into four general categories: demographics, experiences in and perceptions of nature and the outdoors, environmentally positive/responsible behaviors, and perceptions of self-efficacy. From there, the results are further divided by theme.

I gathered the results in three phone interviews with each of the nine members of the summer of 2005 subject group, directly before, immediately after, and several months after their NOLS course. Members of the alumnae group, whom I spoke with during one phone interview each, participated in a variety of NOLS courses that took place three to twenty-eight years before the interview at various phases in the subjects' lives. For example, a 48-year-old subject participated in one course in 1978, while a 28-year-old subject went on four NOLS courses including a semester course in Australia. All of the summer of 2005 subjects went on a one-month course that primarily involved backpacking. With the exception of Abe, who went to Alaska, all of the summer of 2005 subjects went to the Wind River Wilderness in Wyoming. One summer of 2005 subject, Paul, did not complete the second interview, as he was not reachable by phone directly after his course.

Demographics

Of the nine subjects I interviewed who took a NOLS course during the summer of 2005, six were male and three female. All nine were Caucasian and ranged in age from 18-20, with the exception of Henry, a 43-year-old Caucasian male. All but one of the subjects described themselves as growing up or living in well-off, upper-middle, affluent, or "pretty wealthy" communities, with the exception of Abe, who described his community as "middle ground": neither poor nor wealthy. Only Jackie and Henry were not in college or were not about to become college students. None of the subjects had ever participated in a NOLS course prior to their course in the summer of 2005. I will hereafter refer to this subject group as the summer of 2005 subjects.

The ten alumnae subjects were slightly more diverse, possibly reflecting the scope of courses they participated on, from the Wind River Wilderness backpacking trip to a semester course in Australia. Six of the alumnae had gone on more than one NOLS course. The alumnae ranged in age from 24 to 49 and included one Indian male and one Hispanic male. All came from upper-middle, "more wealthy," or middle-class backgrounds and lived in urban and suburban areas, which varied across the political spectrum from liberal to conservative or traditional.

The groups were similar in terms of their experience in nature and the outdoors prior to their NOLS courses, in that about two thirds of subjects from both groups reported extensive experience in nature prior to their course. Subjects' extensive

previous experience in nature ranged from multiple two-to-three-week backcountry trips; a mix of week-plus backcountry trips coupled with multiple weekend trips; to daily time in nature spent running, walking and/or working outside.

Summary of Findings

Nature and the Outdoors

All of the subjects in both groups reported an increase in their connection with nature and the outdoors. Without acknowledging it as such, summer of 2005 subjects described an amplification of their previous feelings towards nature and the outdoors. These feelings included a sense of refuge or home in the outdoors, appreciation, and respect. Subjects in both groups said that time outdoors in general and on their NOLS courses had shaped their life goals. In terms of the changes subjects experienced on their courses, subjects cited influential factors as the duration and location of their NOLS courses, their instructors and the knowledge they gained on their courses.

Environmentally Positive Behavior

Prior to their course, the majority of summer of 2005 subjects credited their parents as the source of their environmentally positive behavior (EPB). Alumnae cited contributing factors to their EPB as their NOLS courses, their career and place of residence.

Their NOLS course or courses appear to have had an effect on the daily EPB of about half of the alumnae and the majority of the summer of 2005 subjects. Nearly all of the alumnae said that their NOLS course affected their wilderness ethic. Immediately upon their return, all but one of the summer of 2005 subjects expected to increase their EPB. Two, Cameron and Nate, expected to make dramatic change in their behavior and the remainder anticipated change in some area of their EPB. Most of the group aimed to transfer the concept of minimum impact to their lives at home, while about half of the subjects wished to simplify their lives, which for three included consumption practices. By the follow-up interview several months later, it appears that all of the subjects more or less followed through with their intentions, with the exception of Nate, who had made minor, rather than the dramatic changes he had planned to make, to his EPB.

Both groups of subjects describe the motivation for a shift towards increased EPB as deriving from living off so little for so long (for those who wished to simplify); the experience of creating such a modest impact as they traveled; the beauty and isolation of the areas of travel; the duration of the course; the instructors; as well as conversations and lessons around environmental issues, physical sciences as they applied to the areas of travel, land management agencies and applications of minimum impact at home. Many of those alumnae who said NOLS had influenced their EPB called NOLS a catalyst or foundation for their EPB, rather than the sole source at this point in their lives.

In terms of alumnae behavior change, the combined influence of other factors on their lives and behaviors since their NOLS course made it more difficult for them to

attribute behavior changes to a NOLS course specifically. Although many of the subjects called NOLS one of the most influential experiences of their lives for various reasons, only two specifically linked NOLS to *major changes in their EPB*.

Most of the summer of 2005 subjects and just two of the alumnae felt that their course provided them with an expanded perspective of the impact of their lives at home. Subjects primarily attributed that shift to the contrast between the minimal amount of materials they consumed and the minimal impact they inflicted upon areas of travel for the duration of their course in comparison with their activities at home. Some subjects cited conversations that took place during their course around the impact of their lives at home as being influential.

Perceptions of Self-Efficacy

All of the summer of 2005 subjects and many of the alumnae said that their NOLS course increased their environmental knowledge, with many subjects saying that it contributed to either their motivation towards EPB or their ability to engage in EPB. Several alumnae said that their course provided them with the responsibility of seeking knowledge and instilled in them the ethic that not knowing the damage that a behavior inflicts is not an excuse for engaging in that behavior.

All summer of 2005 subjects and half of the alumnae felt an increased sense of empowerment due to their NOLS course. This carried into their daily life for all of those subjects. Half of those who said they felt more empowered specifically related that

empowerment to outdoor activity. Subjects attributed their increased sense of empowerment to new leadership and people skills as well as their experiences of overcoming physical and emotional challenges on their courses.

All of the subjects in both groups said they felt a sense of responsibility to engage in environmentally positive behaviors. Over half of the alumnae said that their NOLS course increased their sense of responsibility in this area, with two of the alumnae subjects calling that the most important lesson they learned from their course.

All of the summer of 2005 subjects and some of the alumnae said they increased their outdoor living skills. However, many, but not all of the summer of 2005 subjects and several of the alumnae felt that they increased skills related to EPB as a result of their course. This former increase in skills came in the form of increased leadership and people skills that they could apply to environmental activities and in the form of specific skills such as letter writing.

Nature and the Outdoors

This section describes subjects' self-reported relationship with nature and the outdoors both before and after their NOLS course as well as their perception of the effect of their NOLS course on that relationship.

Relationship With and Feelings towards Nature and the Outdoors

Participation on one or more NOLS courses appears to have had the effect of increasing the intimacy and connectedness of subjects' reported relationship with nature

and the outdoors. For the most part, this shift occurred regardless of the relationship subjects had with nature prior to their course, which for many appears to have been an intimate one. All of the summer of 2005 subjects attributed this change in (or amplification of) their perceptions to time spent in remote and beautiful locations, whereas alumnae also credited instructor influence and knowledge they gained on their course or courses.

After their NOLS course, each of the summer of 2005 subjects reported an amplification of their previous sentiments. That is to say that upon their return, all of those subjects said that they felt greater appreciation, a stronger understanding of the simplicity of life and a new feeling of comfort in the outdoors. Many subjects gave similar descriptions of their feelings towards nature and the outdoors in interviews *before, directly after and several months after their course. The difference between the responses gathered at disparate points in time came in the degree of those sentiments, in that they described an intensification of previous feelings towards nature and the outdoors because of their course.*

Such a "before and after" comparison cannot be as easily made for the alumnae group, as they were only interviewed many years after their NOLS courses and provided only a long-term retrospective look at their pre-course feelings towards nature and the outdoors. In contrast, the summer of 2005 subjects were asked about their feelings weeks or days before leaving for their NOLS course. Interestingly, the only alumnus who did not report a greater appreciation or awareness for the outdoors because of his course was Alan, who went on a three-month expedition immediately prior to his

course, which he felt lessened the influence of NOLS on his already significant appreciation and respect for the outdoors. In addition, some subjects in the alumnae group had difficulty recalling their feelings towards nature and the outdoors as they existed prior to their course. Regardless, many alumnae described outdoor experiences prior to NOLS as laying the foundation for their course. Others called those prior experiences the beginning of their appreciation of outdoor and/or athletic activities as well as for nature itself.

Before leaving for their courses, summer of 2005 subjects spoke passionately about the effects on their lives of their time outdoors and said that their experiences provided them with escape, refuge, leadership opportunity, and an altered perspective on the outdoors. In addition, prior to their course, all but one of the subjects from the summer of 2005 subject group said that time spent in the outdoors had made a significant impact on their lives via a spectrum of effects ranging from a greater understanding of themselves, to changes in life goals, to increased respect for nature and a propensity towards environmentally responsible behaviors.

In their pre-trip interviews, several summer of 2005 subjects mentioned an increased respect and awareness brought on by their time spent outside. Those students echoed Nate's comments, who said, "It certainly has given me more respect than I probably would have had otherwise for nature and the importance of having undeveloped land."

Other summer of 2005 subjects raised the theme in their pre-course interviews of the outdoors as a space that provides for reflection upon their lives. Paul commented,

“I think I kind of look at the simpler things in life, and kind of slow down to enjoy everything around me.” Henry stated, “When you go out in the wilderness everything else tends to go away and the important things come to the top.”

In their second interview, shortly after returning home from their course, many of the summer of 2005 subjects described a greater appreciation for the “simple” things in life because of their NOLS course, such as baking bread and hand washing dishes. In addition, two subjects returned to the theme of refuge in the outdoors. Abe mused, “It changed me. . . It’s nice to know that there’s that kind of escape. It’s nice to know that I can always go out there and live like that if I want to.” Abe also said, “I noticed right when I got out there how much easier I laughed and how much happier I was out there. . . . I kind of set a new level of what happiness was for me.”

In contrast, only one alumnus described nature and the outdoors influencing him in a way that made him strive for simplicity, or appreciate the “simple things in life.” Joe described an experience of happiness discovered curling up in his sleeping bag, post dinner after a long, hungry and wet day of hiking. He said, “I’ll never forget that feeling of contentment of just being warm and dry and not hungry. That was probably, looking back, one of the best moments of the trip.” When asked what that taught him, Joe said, “When I think back about that, how little it takes to be happy. You don’t need that much.”

In addition, none of the alumnae specifically referred to nature and the outdoors as a refuge, although one alumnus did refer to the mountains as the place where he recharged himself. This difference between the two groups could come from the

proximity in time the summer of 2005 subjects had to their course during their interviews versus that of the alumnae. In addition, many of the alumnae group spend one or more weekends a month outdoors and simply may not think of the outdoors as a necessary refuge because they are able to spend more time there.

Immediately upon their return, one third of the summer of 2005 subjects used the word "home" to describe their feelings towards the outdoors, with implications that upon immediate return they felt more at home in the outdoors than at the homes they returned to. Just after his course, Mason said, "One thing that definitely hit me was I feel more at home in it now. Like it's not like I need to be back at the house.... I just don't feel quite as attached to the house." In describing her closer connection to the outdoors upon her return, Jackie said, "I miss it. I miss it kind of the way you would miss, like, your house. It's really strange." Nate expressed comparable emotions, "I mean, it was home for the last month, you know? It was home."

Only one alumnus used the word home to describe his relationship with the outdoors as found on his course. Daniel said,

I just found my NOLS experience, I really felt like I was at home, more than I had been previous to that. I don't know if that's physically or communally or what and I just wanted to help other people find that same sense of place. I really feel like I found a sense of place, and I don't mean the sense of place being the north cascades, but kind of that experience, of being outdoors and learning my place as a human in the ecosystem.

In addition, and despite their description of the same kinds of feelings towards the outdoors both before and after their course, all but two of the summer of 2005 subjects responded affirmatively to a question asking if they felt *differently* about nature and the outdoors after their course. This could point to the intensity of subjects' emotions immediately upon their return or to the phrasing of the question, which may have imposed a false dichotomy by simply asking subjects whether they felt differently about nature and the outdoors upon their return.

All of the summer of 2005 subjects reported feeling a closer connection with nature upon their return. In describing their closer connection with nature, immediately after their return, three of the summer of 2005 subjects reported feeling more a part of nature than they did previously, with a greater understanding of their role as a human being on the earth or a connection to their sense of responsibility to protect the earth. Janet said,

You just feel close when you're out there and you're surrounded by it day in and day out. You feel like you're really a part of the environment. You're using principles that allow you to have no impact on where you are and you really become close to it . . . When we'd get to the top of a mountain and just be looking out, it's one of those things that makes you feel so small and at the same time so huge to be a part of it all.

In terms of their connection with nature, all of the alumnae but Abby said that they developed a closer connection with nature during the course. Daniel described how he found a connection with the earth through,

this dramatic change from growing up in suburbia, disconnected from a sense of place, and really living right there and being aware of our connections with the local environment. . . it just makes you aware of those ecosystems because they're not paved over, they're not restricted to little corners of sidewalk.

Later, describing this as the most important lesson he learned on his NOLS course, Daniel said, "I always thought of the environment as being something separate or other, as opposed to me just being part of it." Others did not describe the connection as specifically, but agreed that they felt more connected.

The sole alumni, Abby, who did not specifically report a closer connection to the outdoors as a result of her course, had gone on a NOLS course as a fourteen year old, as opposed to all of the others who were eighteen or older for their first course.

Regardless, Abby did recount an increase in her respect, awareness and appreciation for nature and the outdoors. It therefore appears that every subject experienced some change in the realm of their relationship with nature and the outdoors because of their NOLS course or courses.

In a third interview, two to three months after the first post-trip interview, summer of 2005 students reaffirmed the increased appreciation with which their NOLS course provided them. The word *appreciation* seemed to hold multiple meanings for the subjects. Some students appeared to have gained an increased, novel or renewed sense of the value of nature. For example, Nate said, "If you don't have regular contact with something you tend to forget about it to a certain extent. So, it kind of reminded me of why it's so important." Jackie commented that, "Whether or not we were standing here

right now, this would still be the same, it would all still be here even if we weren't here." She went on to express an increase in her level of environmental concern, saying that the knowledge that places exist like those that she had camped at increases her desire to protect those areas. One subject gained an appreciation for the complexity of nature, while yet another commented on his renewed awareness of the fragility of nature.

Similarly, all the alumnae but Alan (who went on a three month expedition immediately prior to his NOLS course) described discovering a greater awareness and/or appreciation for nature as a result of their course. Jake explained, "It further developed my respect, and most certainly developed my fear. . . . And without question, and primarily, it massively increased my enjoyment and appreciation." Like two subjects in the summer of 2005 subject group, Richard, an alumnus, recognized that he felt a strong connection prior to his course, and therefore felt an amplification of his previous feelings. Richard said,

I don't think it changed it. It's just like *falling in love*; you start off and you might really like it a lot, and that's kind of the way I went into the NOLS course, and when I came out I was totally in love. So, it's just kind of a question of degrees, and an appreciation for things wild.

Many of the alumnae simply stated that the course deepened their appreciation for nature or the outdoors.

Based on responses from subjects in both groups, it appears that their NOLS courses strengthened the level of intimacy in their relationship with nature and the outdoors. Both subject groups described increased respect, deepened appreciation and a

greater feeling of connection to nature and the outdoors as resulting from their NOLS course. More specifically, all of the summer of 2005 subjects said that they developed a closer connection with the outdoors during their NOLS course, as did all but one of the alumnae group. Themes of feeling at home or finding refuge in the wilderness as well as that of finding a new appreciation for the simplicity of life or happiness ran through many of the summer of 2005 subjects' responses given in their second interview, immediately upon returning home from their courses. Those themes were not as prevalent in the responses of the alumnae or in the final interview with the summer of 2005 subjects, perhaps because of their distance from their courses. It could be that other feelings replaced those of home, refuge and simplicity for the alumnae in thinking back on their course, or that they never had those feelings at all. I suspect that this difference between the two groups arose more from the alumnae long-term perspective rather than from the uniqueness of the summer of 2005 subjects' relationship with nature and the outdoors as gained through their course.

Influence on Behavior and Life Goals of Nature and the Outdoors:

Several subjects from both groups reported an influence from their NOLS course on their life goals. Again, for many of the summer of 2005 subjects, the primary effect appears to be one of amplification of previous feelings, in that they found renewed motivation towards achieving certain goals. Some alumnae were able to attribute certain

life choices to their NOLS course, but were less able to specify the effect of time spent outdoors and in nature prior to their course as well as the effect of circumstances that took place after their course.

Many summer of 2005 students reported in the pre-course interview that time in nature led to a greater comfort level outdoors and a desire to spend more time outdoors and even work outdoors. Several reported time in nature as influencing their career goals and college majors. For example, Abe said,

I want to go into business but I'm more concerned about doing something that's good for the environment, *business that's good for the environment*. . . . If I grew up in the city, I wouldn't have any exposure to that. I'd feel disconnected. I guess that's the main thing, my experiences have provided me with a connection.

Henry, a minister, found that the closeness with God he found in his time outdoors led him towards wanting to bring that experience to others through guiding them outdoors. Janet, who just graduated from high school and was working at a kayak shop for the summer, reported "I plan to go to Pacific University and coach, but really, what I want to do with my life is be an outdoor guide for a program like NOLS or Outward Bound." Paul explained, "Right now I'm thinking about making my major into environmental studies, so that's obviously influenced it, doing all the trips and stuff, because it's showed me that I do enjoy it and would like to do something along those lines." Several others spent the summer working outdoors at camps or on lakes.

After their course, Abe and Paul returned to the effect of the outdoors on their life goals. Abe said, "I realized that I want to do something with the environment, with

my career; I want to work with the environment.” When asked if this was a change from how he felt before, Abe said, that his outlook was not different, but reinforced. In his follow-up interview, Paul expressed a desire to become a guide so that he could teach others all that he had learned. He also said that the course had increased his interest in majoring in environmental studies, which would require some effort on his part, as his college does not offer environmental studies as a major.

In the alumnae group, two of the alumnae said that their course had been the motivating factor in their move to the west coast, as they decided that they needed to live closer to mountains. Two others said that they chose careers in the environmental field largely due to their NOLS courses, as will be discussed in more detail in the section on behavior. These reported effects demonstrate the profound influence of their NOLS courses on the relationship of these four particular subjects with nature and the outdoors.

Many of the subjects reported changes in life goals or at least in recreational practices because of their NOLS course. For many summer of 2005 subjects, the course served as a reaffirmation of previous drives to work in the environmental field or pursue environmental studies. Several alumnae credit NOLS as laying the foundation for their environmental careers and with pointing them towards outdoor recreation as a way of life.

Contributing Factors

After their course, all of the summer of 2005 subjects attributed their altered perception of nature to the time spent outdoors; many commented on the solitude and the

scenery. Alumnae credited their changes to the time spent outdoors, the instructors and the knowledge they gained on their courses. In looking at the statements from both subject groups side by side, one finds resonance between the themes, with a wider variation in themes from the alumnae group.

Comments from the summer of 2005 subject group follow below. Cameron said of his changes, "I think what led to it (increased appreciation) was marveling at the mountains and beautiful flora that I experienced on my NOLS trip. . . . And now I see those things around me in the city and I try to seek them out as well." Jackie attributed her increased appreciation to, "Just kind of the solitude of it, that it was just us there." Only Abe also attributed his changed perception of the outdoors to discussions that took place on the course, which he said were initiated by both instructors and students on the course. However, Abe was not referring to a general appreciation for the outdoors, but rather specifically to the reinforcement he experienced on his course for his view that, "Everything is ours, just as much as it is the animals' and we have a responsibility for it and we can enjoy it too. But it is every bit as much ours. That kind of viewpoint on nature for me was reinforced."

Alumnae statements covered a broader range of themes, including Joe's comments on the influence of their isolation and submission to the power of nature,

We were totally immersed in the wilderness for 28 days, so we had to deal with everything just the 13 of us. Whether it was a storm that came in or getting lost, or anything that came up, we had to deal with it.

Anthony, connected his shifts in perception more directly to his instructors, I think the instructors presented a variety of courses, not only mountaineering skills but also geology, an appreciation of environment, and then of course teaching us how to have the lowest impact possible on our environment. I think all of those things together helped to shape my understanding. And also to see that behavior modeled in the leaders.

Ben did not mention the instructors, but said “just being more knowledgeable about the outdoors in general,” led to his deepened appreciation.

In summation, subjects in the summer of 2005 group attributed their increased connection to and appreciation for nature and the outdoors to the duration of time they spent outdoors in an isolated setting with spectacular scenery. The alumnae cited a spectrum of factors, including increased knowledge and the influence of other people. It is important to note that the agent of change discussed in this section refers only to changes in the subjects’ perception of nature and the outdoors. That is to say that changes to other aspects of their lives such as behavior and perceptions of self-efficacy appear to have occurred for other reasons aside from simply time spent outdoors.

Environmentally Responsible/Positive Behaviors

This section focuses on subjects’ self-reported environmentally positive behaviors, how they learned those behaviors and why they do them. In addition, this section includes data on subjects’ perception of the influence of their NOLS course on their environmentally positive behavior and what aspect of the course led to any changes

in their behavior in this realm. I asked alumnae about the effect of their course on their EPB, but not about the specifics of their EPB prior to their course, and therefore their responses are not included in the first several parts of this section.

Overview

Based on their responses, it appears that a limited range of environmentally positive behaviors (EPB) existed within the summer of 2005 subject group prior to their course. In their third interview, months after their course, all but one of the summer of 2005 subjects reported increases in their EPB, with one describing dramatic increases. The alumnae appeared to have a generally high level of EPB at the time of the interview, years after their NOLS courses, with about half of the subjects working or dedicating significant time and energy to volunteering in the environmental field. More than half of the alumnae felt that their NOLS course created some change in their EPB, with four saying it either led directly to or served as a catalyst for more significant commitment to EPB.

Environmentally Positive Behavior: Summer of 2005 Subjects, Pre-Course

Prior to their course, all of the summer of 2005 subjects appeared to engage in similar behavior (described below in more detail), with the largest differences appearing in motivation and attitudes towards EPB and environmental issues. Much of the subjects' EPB consisted of park and other area cleanups, recycling, the consideration of environment in making purchasing decisions and speaking with friends about

environmental issues. At this point in their lives, with seven of the nine subjects still in college, Abe, Paul and Janet (all in college) expressed interest in devoting their lives to careers in the environmental field. Henry, who owns a ranch, was transforming his ranch to use fewer chemicals. The other half of the subjects described concern and interest in environmental issues, but did not appear to place those concerns as their top priority. In the pre-course interview, nearly all of the summer of 2005 group attributed their environmental awareness and EPB to their parents, with the three who did not attribute their EPB to their parents describing the highest levels of pre-course EPB.

When asked if they considered themselves to be environmentally active prior to their course, summer of 2005 subjects ranged from Abe at the high end who responded, "In my daily life, very much so," to Nate's flat out "no" at the low end. Further questions revealed that Abe did indeed appear to engage in a greater range of EPB than most of the rest of the group in that he considers and acts upon environmental concerns in many of his daily decisions, participates in a student environmental group and said, "I do my part and I'd like to eventually do something bigger, on a bigger scale. What I do now is on a small scale. But that's why I'm going to school, so I can learn how to make changes on a bigger scale." Nate, on the other hand, differed from the majority of the group in that he engaged in EPB but said,

I've never really felt the need to really be that active . . . around here everything that's going to be allowed to be developed has been developed. I mean, my dad's house is right on a reservation and there's no chance of that getting developed at

all. There's nothing going on around us to get that involved in, so I've never really been faced with glaring environmental issues.

Later Nate said, "If there's something that's staring me in the face, then I'm more than happy to go and do it. But if not, I'm not into it enough to go out and find stuff to do."

About half of the subjects mentioned educating friends as a way in which they display EPB, particularly when describing their actions around an issue of importance to them. Janet said, "I think that I'm environmentally active in the way that I bring it (environmental issues) to people's attention, and *not so much going out and doing things* to actively preserve it." Jackie attempts to educate people on a larger scale about drilling in the Arctic, a subject on which she wrote her college senior thesis. Jackie said,

I'll chat with people about it if the subject comes up. It's something I like to debate because I feel I know enough about it to show them that they're wrong. I presented it at UNH on a panel with other students and I hope to be presenting it again at the communication association conference in November.

A few of the subjects included appreciating nature as a part of their EPB. Abe said, "I think just by appreciating nature, that's a part of respecting it too." Although Janet listed several specific EPB, her initial response to the question of whether she engaged in EPB began, "I would like to take more of a political role in helping to preserve nature, but most of my action right now is just enjoying it."

Prior to their course, very few of the summer of 2005 subjects engaged in any political activity surrounding environmental issues. Two, Jackie and Cameron,

participated in email campaigns with organizations like MoveOn.org. Others said that they were not involved in political action of any sort, with two subjects expressing interest in further involvement and others expressing no interest in or an active disdain for politics.

Subjects in the summer of 2005 group said that they engaged in their chosen EPB because it makes them feel good, out of fear, to preserve areas for recreation or for humans in general or because the behaviors are easy. Henry, who is in his forties, as opposed to the other subjects who are in their late teens and early twenties, acted out of concern for the health of his family. Some summer of 2005 subjects described a relationship between their time spent outdoors prior to the course and an increased concern for the environment. In her first interview, Amy said, "Well, I know that I want to protect the places I've been to. For me nature is like a refuge away from everything else that's crazy in the world."

Before leaving for their course, only two of the summer of 2005 students connected time spent outdoors to their environmentally responsible behaviors, as opposed to connecting their outdoor recreation to environmental *concern*. Jackie explained that time spent in wilderness coupled with an environmental studies class prompted her towards increased efforts to recycle in a town that doesn't provide that service and Abe said, "I try to do my part in taking care of this land: recycling, buying responsibly, shopping smart, choosing where you shop, studying the earth. It (time spent in nature)

increases my respect, awareness, my stewardship of the land.” Interestingly, Jackie and Abe were the two summer of 2005 subjects that appeared to have the highest level of EPB prior to leaving for their course.

In summation, prior to their course, the summer of 2005 subjects described a range of EPB, from simply enjoying nature and participating in clean ups at the low end to educating the public, taking minor political action and shaping consumption habits around environmental concerns at the higher end. They engaged in these EPB for varied reasons with little crossover, although several subjects mentioned that time spent outdoors motivated them towards the EPB described above.

Influence of NOLS on Environmentally Positive Behavior: Summer of 2005, Immediately Post Course

Immediately after their NOLS course, most of the summer of 2005 subjects expressed a desire to change their EPB to some degree, particularly around their level of consumption. Two students, Nate and Cameron, expressed dramatic change in regards to EPB and their levels of consumption. Another half of the group said that they wanted to simplify their lives in some form and reduce their consumption, while just one student did not expect to alter or increase his EPB after his NOLS course in comparison to his behavior prior to the course.

Immediately after their course, Cameron and Nate saw an increased awareness that they expected to lead to changes in multiple areas of their lives in regards to their

EPB. In particular, both seemed particularly attuned to their use of resources. Cameron explained,

I've already noticed some changes, just, I'm more aware of little things like how much toothpaste I put on my toothbrush. You don't need very much. Or, how much I leave the lights on. . . . I kinda learned something that I didn't realize: You know how the recycle symbol, how it has three points? I didn't realize that there were two other points, besides just recycling, and those are reduce and reuse. That's the kind of thing in my head as well; I've been looking at containers in my fridge and thinking about how I could reuse them, instead of throwing them away.

Nate said,

It seems like I'm definitely constantly thinking about how much garbage I'm producing and things like that. . . . I kind of want to conserve more, in general. It made me feel like a lot of stuff was less important than I was making it out to be in my life. . . just being conscious of what you buy, who you buy it from, being conscious even of just little things like packaging, or not buying from people like McDonalds.

Several summer of 2005 subjects predicted changes to their EPB and their consumption levels in particular, but did not sound as dramatically impacted in this realm as Nate and Cameron. Abe said,

I really don't need much at all. I don't need anything really. I like the idea for striving for living as simply as possible. There's something so cool about being able to survive for 28 days from nothing but what you carry on your back.

Several subjects expressed a desire to alter habits in one aspect of their life, such as water use or transportation. Amy predicted she would alter her transportation habits, in that she expected to drive less. Janet described an increased desire to recycle, carpool, walk and bike. These are all activities Janet said that she had been engaging in previously, but after the course she said, "I come from a very environmentally aware family, but I think now I see more of a reason to (engage in EPB)."

Other subjects expressed a desire to simplify, yet did not specifically translate that desire into a reduction in their consumption patterns. Jackie, who with Abe described one of the highest levels of EPB prior to her course, did not expect to see change in many of her behaviors, although she expressed a desire to simplify her life, "I think I want to make things simpler," she said. "The first thing I did when I got home was go through all of my stuff and try and get rid of the clutter and get rid of the things I didn't need anymore, and donate them." Amy explained, "You look around, and think, 'Is that necessary, because I lived without it for a month.' Like the dishwasher - sure it's nice, but it's not necessary at all." Amy said that she did not predict any changes to her EPB save for the transportation changes described previously. However, in her follow-up interview several months later, Amy said that she had reduced her use of electricity and described herself as more environmentally conscious.

Immediately after his course, only Mason expected no or very little change in his EPB, primarily because he felt he already made little environmental impact in his daily life or already engaged in all the EPB he could. Mason was not amongst the highest in the group in terms of described EPB.

In regards to political involvement, although several subjects said they had received encouragement to contact people in positions of power, only one subject, Abe, said that he thought he had an increased desire for further involvement in political action around *environmental issues after his course*.

Thus, immediately upon their return, all but one of the subjects expected to see changes in their consumption patterns and use of resources including energy and fuel, with Cameron and Nate predicting the most significant changes.

Reported Changes in Environmentally Positive Behaviors

Months after their course, more than half of the summer of 2005 subjects described changes in their EPB, although Cameron was the only subject who described considerable changes that he attributed to his course. Others described more minor changes or changes that they did not attribute fully to their course. Only Mason, who had predicted no changes, confirmed that he *had not altered his EPB at all*. Subjects attributed these changes to discussions on the course initiated by other students and instructors, to the experience of spending an extended period outdoors, away from other people, and to the little they were able to subsist on during their course. Nearly all of the subjects said that they still thought about their NOLS course daily or every other day.

Cameron, who made the greatest changes, altered his transportation and consumption patterns and became involved in an environmental student group. He said,

I bike almost exclusively to get around, rather than use the bus or the car . . . I'm eating a lot more organic food and stuff that reminds me of what I ate on the trip,

just for snacks and stuff. . . . I go to Whole Foods and I get a lot of those sesame sticks and trail mix and stuff like that, and my friends kind of make fun of me for that, just kind of poke fun at me about my organic food and stuff.

Cameron also said,

I've become more involved with one of the PIRGS, WISPIRG, and I've just been volunteering for them off and on in my spare time. I've become involved in their 'new energy future' campaign, and I've just been going to the meetings for the new energy future campaign and I've done a little bit of volunteering and campaigning and making posters and things like that.

Cameron had not been engaged in these activities prior to his course. When asked whether he thought his recent involvement was related to his NOLS course, Cameron responded, "Yeah, I think it definitely was. I saw their sign at some student organization fair, and I immediately thought of my NOLS trip when I saw their sign and what they were doing." *He connected the group with his trip because,*

They (WISPIRG) are striving to improve our energy efficiency and things like that, which are things we talked about on my NOLS trip. And they're trying to get Wisconsin's utility to use more renewable energy sources, and they wanted to get buildings to be more energy efficient, and those were things that paralleled what we talked about on my NOLS trip.

One other summer of 2005 subject, Abe also described an increased involvement in environmental issues beyond the scope of his daily behaviors. Abe said,

Right now, I'm in a local food movement. I'm actually working on a business plan to start a local food distribution company. So, I'm working pretty close with farms around here and sustainable agriculture. I've gotten big into that, I've been to some conferences. So that's one thing that I've been doing. I've been writing letters to the editor. . . . I've never been politically active so I'm kind of getting into that.

Abe attributed much of this activism to his environmental studies courses, but said that his NOLS course reinforced his intention to pursue an environmentally related career. When asked what part of his course reinforced his intentions, Abe responded, "My connection with the land, I feel indebted to it, I need to respect, I need to love the land."

In addition, Abe described connections between his college course work and his NOLS trip. Abe, who is the only summer of 2005 subject who did not go to the Wind River Wilderness in Wyoming, but rather went to Alaska, said,

I'm in an environmental studies class right now, and we were just recently talking about ANWR, and now I have a personal connection to Alaska. We had a discussion about the drilling, about the effects of it, and it struck a chord and I kind of got emotional. So I think I have become pretty connected, more connected with Alaska specifically, and just nature in general.

Other subjects described changes to behavior and consumption in fewer areas of their lives than Cameron and Nate had described, as those subjects had predicted upon their immediate return. Many described similar changes to Amy, who said, "I'm

definitely a lot more environmentally conscious. Well, I use electricity probably a lot less than I used to, you know, my computer's off whenever I'm not in my room or even sometimes when I'm in my room." Amy attributed her changes to the fact that,

The only energy that we used for a month was the energy that our bodies used. . . . Then, well you have the entire oil issue. . . . On one of our last days, we talked about the effects of if they were going to go out in Wyoming and drill for oil, the effect that would have on herds migrating through, and how it would interrupt those. . . It made me realize that I should minimize my energy as much as possible so that there's more to go around and maybe set an example for my friends.

Amy also overcame her hatred for politics in order to make a call to her senator around a budget proposal that included a provision to allow drilling in the Artic National Wildlife Refuge. Like Abe, Amy found that what she learned on her course related to information she was learning in a college ecology course at the time of the third interview, *although she did not attribute the reinforcement of information she learned on the NOLS course via the ecology course as contributing to her EPB.*

While Amy's motivation stemmed from a desire to preserve land for fauna, other subjects presented a more anthropocentric view. Henry said his increased attention to water conservation came from, "My awareness of the diminished resources that we have. I want other people to be able to experience that - experience all the things in our environment" Henry said that the course led to that increased awareness due to, "Their teaching (the instructors), and listening to their teaching about how it's (water's)

diminishing, and other resources too.” Like many other subjects, Henry also attributed his behavioral changes to, “seeing how little I could survive on - that I didn’t need all those things.”

Several subjects seemed to have experienced a decrease in motivation as they moved farther from their course in time. Nate, in particular, who had predicted major changes in his EPB, explained his actual shifts as insignificant, with the exception of a change in diet. He said, “I gave up fast food, which is completely due to the people on the course. I guess that’s probably the biggest thing - that and giving up pork.” He said his motivation came from conversations on his course with other students.

One subject, Janet, described some changes to her EPB as resulting from her new college lifestyle, but said that her course provided her with a higher level of consciousness around her new and prior EPB.

Several months after returning from their NOLS course, most summer of 2004 subjects underwent some changes to their EPB, with only one, Cameron, experiencing a dramatic change in many aspects of his life. Most of the changes centered on consumption, be it of electricity, water, or material possessions. Two subjects became more involved in political or community activism, while another subject made a call to a politician for the first time. Subjects attributed the changes to a desire to preserve open space for wildlife and other people as well as to the experience of reduced consumption while on their course.

Alumnae Level of Environmentally Positive Behaviors

The EPB within the alumnae group is most accurately compared with the summer of 2005 subject group after their NOLS courses, as all of the alumnae had experienced a NOLS course at the time of the interview. Only one of the alumnae group, one of the youngest, attributed his learning of EPB to his parents, as compared to six of the nine summer of 2005 subjects, who did the same. The remaining alumnae attributed their environmental awareness and EPB to the media, living on the west coast, their NOLS courses, friends, school and co-workers. I suspect that the difference might come from generational differences, being further in time from living with parents, as well as the fact of the alumnae having a greater wealth of life experiences to draw upon for their EPB than the summer of 2005 subjects.

The level of current EPB within the alumnae subject group ranged from Jill and Daniel at the high end and Manuel and Alan at the lower end of the group. Jill works for the Port of Seattle's environment department, attends graduate school to study environmental law and said that environmental concern influences much of her behavior. Manuel lives in Costa Rica and works as a program manager for an international NGO and said,

I feel like what I do to protect the environment is very much limited to recycling, and when I go backpacking making sure I have as low an impact as possible on

the environment. I don't feel that I'm actively doing things to protect our wilderness areas or our natural habitats.

Manuel felt that his surroundings constrained his ability to engage in EPB.

Many of the subjects fell into a middle range of EPB as compared to these four in that they participate in readily available mechanisms for EPB such as recycling and tend to make an effort in at least one other area. Ben, a sales and marketing director, falls into the middle of this particular group in terms of EPB in that he participates in a variety of daily EPB such as recycling, avoiding driving and belonging to several clubs. Ben said that he does not deviate from these behaviors, "Even if it's less convenient, I'll still use public transportation or walk or whatever. It's a part of my lifestyle now." In response to whether he engaged in any political activities, Ben said, "I'm a member of a few clubs, Appalachian Trail clubs, and stuff like that. I don't know if that's very political or not, there's always more you could do." Another subject, Richard, has few EPB in his daily practices, but participates in several environmental organizations. In addition, Richard said he felt his role was,

More as just a personal advocate. I think it's one of the things that, everybody has a purpose in life, and where I have been able to touch people the most has been in turning them on to incredible outdoor experiences. I continue to take trips with some of my old mountain guide buddies into places that few people have ever seen. And I don't think that makes me an environmentalist but it helps sharpen

my appreciation for it. I certainly vote environmental. And I'm raising children, where I try very hard to endear them with a real respect for nature, for mother earth.

Generally speaking, alumnae varied in the specifics of their EPB, but all engaged in some degree of EPB. From all of the subjects' descriptions, it seems that alumnae EPB correlates the most with the summer of 2005 subjects' EPB after returning from their courses, in that the summer of 2005 group described a higher level of EPB upon their return. In itself, this says little about the influence of the NOLS courses, as the alumnae generally have gone through more life experiences than the younger summer of 2005 subjects, and the alumnae have had more experiences after their first NOLS course than the summer of 2005 subjects had had at the time of their third interview.

Influence of NOLS on Alumnae Environmentally Positive Behavior

About half of the subjects in the alumnae group attributed NOLS with lighting a spark of interest or fueling their commitment to the environment while the other half did not mention NOLS as a factor contributing to their environmental awareness. None of the subjects said that NOLS was entirely responsible for their interest in the environment, but some credited NOLS with creating major changes to their EPB or their choice of environmentally focused careers. Many of the alumnae credited NOLS with contributing specifically to their backcountry minimum impact behavior, with several describing a transfer of that behavior to the frontcountry.

For some alumnae, NOLS appeared to serve as a starting point for their passion for the environment. Daniel, who was on the high end of EPB and environmental involvement at the time of the interview said of his EPB and his career choice, "even if they happened later, they were started and inspired by that trip." In describing his decisions in more detail, he said,

Since NOLS, I've completely shifted my entire career. I've gone to school for environmental education, I actively try and vote and engage in the political process to protect the natural environment, to help people develop a sense of place within the environment. I try and live relatively in harmony with the environment.

In pinpointing why NOLS had such a profound effect on his life, Daniel remembers a lesson by a particular instructor which taught him the influence and responsibility people have in preserving land. He also attributes the sense of home that he found on his course. Daniel is now working at an environmental education center, having just completed a master's program there.

Joe and Amit described a decrease in their consumption patterns brought about by their NOLS courses, as did many of the summer of 2005 subjects. Again, like many of the summer of 2005 subjects, Joe attributed his changes to the limited materials he subsisted on for the duration of his course. Amit described a more profound change in his self-perception in which he began seeing himself as a citizen rather than as a consumer. He said,

I was an extraordinarily different person before my NOLS course as compared to after my NOLS course. And I know a lot of people say that, and I don't think its

cliché, I think it's a product of that experience. There are very few things that I still believe – many of my beliefs and my whole world were turned upside down by NOLS, in a positive way. So, I generally attribute most of the behavior that I think is positive I attribute to NOLS in some way.

As way of example, Amit said,

For the first time, I began to think more like a citizen and less like a consumer. . . I began to recognize different paradigms for success. I began to think globally and stop thinking in a narrow self-centered sort of way.

He specifically attributes these changes to the instructors. Amit said it was not just formal lessons, but also, “conversations and watching the way that they behaved, interacted, thought,” that led to his profound changes.

Others, like Richard, described their NOLS experience as contributing to their passion for the environment, which in turn leads to their EPB today, rather than contributing directly via tools and strategies for altered EPB. Richard said,

NOLS plays a unique role in being able to put someone out in the woods, and especially for that long. . . . That imparts the passion, and then the practice in that is something completely different. Like when you come back in and you're living in a home, it forces you to think about what is it that I can do to make less of an impact. But . . . they certainly didn't teach the applicability of what I was learning in the field, how it would work at home, back when I was learning it in 1978.

Jill described specific tools for minimum impact living that she thought did extend to her life in the frontcountry. Jill said,

I think as far as wilderness goes, I think I just sort of took what I learned on NOLS and just replicated all those behaviors, and I still do, when I go backpacking or any outside activity. I think they mostly taught you low impact activities . . . and I think in daily life too, it all sort of translates.

Like the summer of 2005 subjects, nearly all of the alumnae experienced some shift in their EPB because of their course, with some describing more profound changes in character or career. *If such changes take place in the summer of 2005 subject group, as it appears that they may for some subjects, those changes and the contribution of their NOLS course might not be apparent for some time.* Alumnae Daniel and Amit described the most significant changes to their EPB because of their NOLS course. One difference between Daniel and Amit, who both underwent significant life changes as a result of their NOLS course, and the rest of the alumnae group, is that they were two of only three alumnae did not have prior outdoor experience in the form of several multi-day outings.

Influence of NOLS on Summer of 2005 Subjects' Environmentally Positive Behavior

Subjects in the summer of 2005 group described the influence of multiple factors on their EPB, including time spent in the wilderness, the limited material goods

they survived on for the duration of their course, as well as the lessons and influence of peers and instructors. Their comments below provide insight into the particular aspects of the course to which they attribute their changes in EPB.

Jackie and Henry both attributed their desires to change their behavior to time spent in "pristine wilderness." Jackie said, "A lot of it was just being out in the wilderness and just getting to feel really close with it. It really impacts you in a way that it makes you want to respect it and care for it." Henry echoed her remarks saying that the biggest influence on his current thinking was, "Probably just being in the wilderness and seeing the beauty of all there is. And seeing it still in its pristine, like it's supposed to be."

Others attributed their changes to the few material goods they were able to survive on for the duration of their course. Nate attributed his increased awareness to the fact that on his course, "You're living in an environment where you have to be like 'oh, am I wasting this?' You know, you're keeping tabs on all of your belongings. You're constantly aware of basically everything." He was amazed that, "We're eating out of the same plastic bags for a week. And we're sharing all of our food. But we're still ending up with 10 or 15 pounds of garbage every week, and that's a lot."

Cameron and Nate both also cited the influence of their peers and discussions that took place on the course. In regards to various EPB, Nate said, "A lot of people there were already doing it and they would talk to me about it and the benefits of it. And it really isn't a big deal. And conserving something like that, it is a big deal." Cameron reported the influence of many learning experiences over the course of his trip, particularly as presented by the example and lessons of his instructors. Cameron said,

We had a couple of classes: Leave no Trace. And, in addition to talking about how we can apply those principles in the field, on the trip, we also talked about how we could apply those principles back at home . . . and it was also something we often talked about.

He concluded, "I think there's a lot of things I could do differently, and I think I will do those things differently."

Minimum impact lessons seem to have influenced EPB for all summer of 2005 subjects at least in the wilderness and all but one of the summer of 2005 subjects made some degree of transfer of what they had learned of *minimum impact ideology* from the wilderness setting to their lives at home. Many echoed Nate's thinking, who in the interview that took place immediately after his course said,

I think I kind of needed the desire to use less packaging, to be conscious of what food you eat, and where your food came from. It's kind of weird to think that choosing your tent site carries over into packaging and stuff, but I think it really does.

Most of the summer of 2005 subjects and about half of the alumnae said that the course increased their desire and ability to engage in outdoor activities. Moreover, every single participant in both subject groups agreed that enjoying outdoor activity is connected to environmentally responsible behavior, at least for them, *if not for others*. Many of the participants felt strongly about this relationship, and most felt that it does in fact apply to everyone.

A blend of influences contributed to summer of 2005 subjects' changes in EPB. Common themes related to the influence of the NOLS course included instructor taught lessons, time spent in "pristine wilderness", the extended period of time spent living on so little, and the influence of peers.

Subjective Norms

Subjective norms refer to social influence and are important to this study due to their role in Ajzen's (1988) behavior model, the Theory of Planned Behavior, which is discussed in more detail in the literature review (Chapter 2). The model states that attitudes towards a behavior, perceived behavioral control and subjective norms combine to create intention. All of the summer of 2005 subjects had some close friends or family members with what the subject considered environmentally positive behaviors and half the subjects felt that *most* of their friends and their families engage in EPB.

Nate and Cameron both consider their parents to engage in many EPB, but *were the only two summer of 2005 subjects who said that the majority of their friends do not*. Interestingly, Nate and Cameron are the two summer of 2005 subjects who were initially most motivated to change their levels of EPB and were the two who described being the most influenced by conversations with peers and instructors on the course. Cameron explained that "Most of my friends are disgusted by Hybrids, they would much rather have a gas-guzzling Suburban. That kind of frustrates me."

Abe and Jackie, two of the summer of 2005 subjects with higher levels of EPB than many of the other summer of 2005 subjects, both considered their family,

including their parents, and a good portion of their friends to hold less EPB than they do. The vast majority of the remainder of the summer of 2005 subjects felt that at least their parents had high levels of EPB. However, Jackie's fiancé and Abe's sister share the subjects' values and encourage the subjects' EPB.

All of the summer of 2005 subjects thought their friends and family at home would support their changes in behavior, including Cameron and Nate, who both had a majority of friends with few or little EPB.

Half of the summer of 2005 subjects felt that their course mates had less EPB at home than they did. The remainder thought their course-mates had equal EPB to them, a range of EPB or could not answer the question. Nate is the only subject that reported much learning from his course mates.

The entire alumnae group described a mix of friends and family that shared their EPB and environmental values. All of the group had some support from friends or family, but only one subject, Jake, said that he felt the vast majority of his friends shared his EPB and environmental values. Jake's family, however, does not share his behaviors. Other subjects in the alumnae group named a specific family member with similar beliefs, but again listed others close to them that do not share their beliefs and behaviors.

One subject in the alumnae group who underwent a profound change in EPB due to his NOLS course described the way in which his relationships from NOLS carried over into the rest of his life, despite the fact that he keeps in touch with some, but not all of his course mates. Amit, a member of the alumnae group said,

Well I think to some extent I internalized my relationships and my experiences in a way that made them valuable to me. It can be from two different ends. One is that you recognize that people make a living, have a lifestyle in which they take time to enjoy those sort of *pristine places or those environments*, and because you think of those people highly, you want to make sure they can still go on doing what they do, and to make sure other people can enjoy and have the same experiences that you were able to have. And I think from a people's perspective, you internalize relationships and what those meant to you. And part of what you share with those people is an appreciation for the outdoors, and I don't need those people to be around to hold that as important.

It is unclear to what degree subjective norms play a role in subjects' EPB, however, some interesting points arise in this realm. The two summer of 2005 subjects with the greatest motivation to increase their EPB as a result of their NOLS course, Nate and Cameron, are the two subjects who reported the least support from friends at home around their EPB. This points us in the direction of NOLS providing a new subjective norm, at least for the duration of the course, if not beyond, as described by the alumnus, Amit. The two summer of 2005 subjects who reported the highest level of EPB prior to their NOLS course, Abe and Jackie, did not have support from their parents in their EPB, but did have support from at least one person very close to them. The implications here are not for NOLS, but more for generations that are learning environmentally responsible behaviors from their parents. Perhaps learning this behavior from one's parents is not as strong as or can be strengthened by finding the motivation and behaviors on one's own.

Perceptions of Impact of Life at Home

All of the summer of 2005 subjects and two of the alumnae subject group did appear to undergo some shift in their perceptions of the impact of their lives at home as a result of their NOLS course. Subjects attributed the shift in perception primarily to the minimal impact they were able to achieve (or avoid) on their course.

Summer of 2005 subject, Abe, said in his second interview, "Knowing how little the impact we had by living out there, now I realize how much more of an impact we have back home." Of her life at home, Janet said, "There are a lot of things to do that aren't environmentally sound. I'm just more aware of all of those things. Driving a car, not recycling. . . When you're out there you realize how much everything's tied together."

Several summer of 2005 subjects commented on a new or strengthened sense of the importance of small actions and on their ability to have a positive impact. Nate said, "I think I feel like the little things matter more than I did before the course."

Most of the subjects in the alumnae group did not think that the course changed their perception of the impact of their lives at home. One of the two exceptions who overtly expressed a change in their perception of the impact of their life at home, Jill, described an experience much like what many of the 2005 subject group depicted. She said,

It makes you more conscious of what you're doing at home. Because when you're backpacking, it's amazing how you live out there. You create this little bag of

garbage that can sit in a Ziploc bag, and then you get rid of that per week on a ration exchange. And then you go home and you're like, geez, look at how much garbage we produce here! How can that be? . . . So I definitely think that your feelings change about how you act at home once you've gone through an experience like that.

Four of the ten alumnae remembered having a conversation on their course surrounding the environmental impact of their lives at home. The remaining six did not remember such a conversation or said that they had no such conversation. Three of the subjects who recalled a class on the impact of their lives at home said that those classes were meaningful to them. Ben said, "It's easy to think about things, but once you start talking about them with other people it makes them a little bit more prominent I guess."

Alan, one of the subjects who did remember an impact conversation, said that he drew other lessons from those conversations. He said, "What went with me was the leadership stuff and transferring over the choices that we make and the responsibility we have to make appropriate choices, whether those are environmental or those are lifestyle choices was not defined or implied."

Five of the summer of 2005 subjects recalled conversations on their course in which they discussed the impact of their lives at home, although Abe and Jackie were disappointed by the limited duration and depth of those conversations and Nate was surprised by how little the topic came up. Two students described the context of the conversations as instructor-led *Leave No Trace* lessons in which the instructors brought up a transfer of those skills to the front country. The subjects who expressed the greatest

motivation to transform their EPB upon their return from their course, Nate and Cameron, said that conversations in which they discussed the impacts of their lives at home were highly influential on their thinking.

The majority of the summer of 2005 subject group felt that they had a greater understanding of the impact of their life at home as a result of the course, whereas only two of the alumnae group felt the same way. Those who did describe a change in their perception of the impact of their lives at home gave comparable reasons behind their new understanding. Most saw a sharp contrast between their lives and home and the slight impact they made on the areas they traveled in while producing a minimal amount of waste for an extended period. Conversations around the impact of subjects' lives at home were meaningful to some subjects.

Perceptions of Self-Efficacy

This section covers topics related to subjects' self-perceived ability to and intentions towards effecting environmental change or behaving in an environmentally responsible manner. The particular topics discussed, including sense of empowerment, responsibility, knowledge and skills are drawn from the various behavior models discussed in the literature review (Chapter 2).

Knowledge

All of the summer of 2005 subjects described a positive relationship between their NOLS course and their environmental knowledge. This knowledge ranged from

increased familiarity with backcountry living and Leave No Trace practices to a greater understanding of the ecology of the places they visited. A few subjects connected this increase in knowledge to an expanded ability to create environmental change, primarily through increased motivation that accompanies their heightened awareness, but for some in that they had gained knowledge that allowed them to intelligently discuss issues and know who to contact in order to make their voices heard.

The majority of the alumnae credited NOLS with contributing to their knowledge either directly or via increasing their sense of responsibility for seeking out information. Several of the alumnae and one of the summer of 2005 subjects said that NOLS had taught them a duty for educating themselves on issues and that ignorance is not an excuse for misbehavior in any realm. Although Abe was the only one of the summer of 2005 students who made a similar sort of comment surrounding what NOLS had taught him, this sort of insight into the effect of NOLS on their lives may come for other summer of 2005 subjects with time. This implies that more of the summer of 2005 subjects might come to this conclusion if they were interviewed several years from now.

Although prior to the course, some of the summer of 2005 subjects felt that they had more of the knowledge they needed to behave as environmentally responsible citizens than their friends or other people they knew had; only Cameron felt he had all the knowledge he needed. On the other hand, most of the alumnae felt they had the knowledge needed to behave as environmentally responsible citizens. Most alumnae credited NOLS with some contribution to that knowledge or to their drive for knowledge.

Prior to their course, most summer of 2005 subjects felt that they needed more or that they wanted more knowledge that could contribute to their EPB. Several echoed Jackie's sentiments, who said,

There are a lot of things I know now that I didn't know before, which have definitely changed the way I behave, but I really would love to know more. Like what else can I be doing? Are there things that I'm doing now that are detrimental to the environment? I know there are other things that I need to learn that will affect the way I live.

Several of the pre-course, summer of 2005 subjects expressed a slight variation on the theme described above, like Mason, who said, "I don't have the knowledge in my hand, all of it, probably. But it's probably quite easily at my fingertips." It appears that Mason knows the information exists, but he does not feel particularly driven towards seeking out that information. I did not ask subjects if they felt that they had a responsibility to seek out the knowledge that would enable them to behave as environmentally responsible citizens.

Immediately after their course, all of the summer of 2005 subjects reported feeling more knowledgeable about the environment. Many included their improved knowledge of Leave No Trace in their explanation of their increased knowledge; others described a greater understanding of the ecology or geology of the area they had visited. Several connected their augmented knowledge to an ability to affect environmental change.

Summer of 2005 subjects ranged in the specificity with which they described the connection between their increased knowledge and their ability to positively affect the environment, with some subjects simply saying that the increase in knowledge provided an increase in motivation and others connecting *particular information* they learned to action they wished to take. On the more ambiguous end, Janet said, "I just think it makes me more aware. If I can identify what's going on I can identify with it now because of the experience I have." Amy described her new knowledge as, "It'll be more like a motivation to do something about it."

On the more explicit side, Mason connected his new understanding of succession in forests to an increased ability to create change through political activism. After explaining a lesson one of his instructors taught on the cycle of succession, Mason said he learned, "why old growth is so essential, because it takes so long for this cycle to play out. I hadn't really appreciated it." He continued to say,

I definitely feel more knowledgeable and fired up about it. Because you don't want to write letters when you're just like, 'Deer are being killed, or something, but I don't really know, I feel it's important.' You want to write letters when you know what's going on, and I definitely feel more able to do that.

Abe similarly felt that he had new knowledge around a particular topic that he could take action on, "Now they can hunt wolf from airplanes, and . . . they mentioned ways that we can change that, you know, send letters to the government. Areas like that, I feel like I can make change."

Abe also described a change in his desire for and ability to gain knowledge. This resonates with that which many of the alumnae described in relation to their NOLS course. He said,

Out there, I was kind of in an environment where learning was encouraged and it was sponsored. One example was learning how to tie a knot, or doing something like that. It wasn't those opportunities to learn where it was stuck in your face; you kind of had to seek 'em out. . . . At the end of the course I look back and I realize that if I wouldn't have taken up all the opportunities to learn how to do that kind of stuff I would never have gotten as much out of it as I can. That applies to my life now, I even realized that yesterday when we were tying the boat up, our boat to the dock and I was asking my dad how to tie a certain knot. So I guess my desire to learn has definitely increased.

With some degree of variation, all of the alumnae reported feeling as though they have the knowledge they need to behave as an environmentally responsible citizen at the time of their interview. Most of the subjects gave some credit to NOLS for contributing to their knowledge or to their motivation to acquire knowledge.

Joe explained how his course had helped him see the complexity of issues. He said that this new understanding came about from several discussions they had on their course,

One was on the timber industry and talking about deforestation. The guy who was leading the discussion did a good job of playing devil's advocate every time the discussion got going in one direction too far. A lot of the times we were quick to

jump on the 'we're destroying habitat,' and he was quick to remind us that 'well, people rely on this for jobs, and we build our homes out of wood, and we need paper' and things like that. I think it was a lot of balance, which was good.

Several subjects in the alumnae group reported that their course had taught them the need to seek out knowledge. One of those alumni, Alan, said,

It showed me that in order to be environmentally responsible; you have to be educated about the issues. Kind of what I learned was that it's not just going to be spoon fed to you.... So if you want to know what kind of environmental issues are out there and what's going on, you need to seek that out. A prime example is ANWR, the government isn't going to come out and tell you that they're going to drill 120,000 square miles of land, they're just going to tell you 'we're going to save you 50 million dollars!'

Along those lines, Jake said,

That's kind of a NOLS thing, that you have an ethic that you are responsible for knowing. Ignorance is not an excuse. Whether you're taking a mountaineering trip up the side of Mt. Rainier, or buying a gas guzzling SUV. The fact that you don't know that it contributes to global warming is no excuse.

In summation, all of the summer of 2005 and many of the alumnae said that *their NOLS course increased their knowledge of environmental issues*. While prior to their course some of the summer of 2005 subjects said that they should know more than they did about environmental issues, but had not taken it upon themselves to seek out the information, several alumnae and one summer of 2005 subject described NOLS as

placing the responsibility of finding information upon their shoulders. Recognition of the ethic that NOLS inspired in this realm may come later for some of the summer of 2005 subjects, as their final interview took place only several months after their return, whereas alumnae had several years to reflect upon the ways in which their course changed their life.

Empowerment

All of the summer of 2005 subjects and half of the alumnae group reported an increase in their sense of empowerment due to their course, be it due to the experience of success when posed with challenging tasks on their course or due to newfound leadership and people skills. The challenges included both physical challenges, such as climbing a mountain or surviving a lightening storm, and those experiential learning experiences like cooking in the backcountry or repairing a ripped tent. Half of the summer of 2005 subjects connected the sense of empowerment to an increased ability to lead or participate in outdoor expeditions, but all of them also felt empowered in their day-to-day life. Similarly, of the five alumnae that reported feeling a greater sense of empowerment because of their course, about half of them specifically discussed their expanded outdoor abilities, yet nearly all of them also discussed the influence on their daily lives. Subjects described the change as a sense of being more willing to challenge themselves, to overcome adversity and to take a leadership role. In addition, seven of the nine summer of 2005 subjects reported a greater sense of self-confidence and/or competence after their course, for many of the same reasons as described above.

Before their course, only two of the summer of 2005 subjects said they felt empowered to create environmental change, half felt that they could be if they joined an organization or made some other change in their life, and the remaining two subjects simply said they did not feel that they had the power to create environmental change.

Jackie and Abe, who appeared to have the highest level of environmentally positive behavior within the group before leaving for their summer of 2005 course, are the only two subjects in that group whom in the pre-course interview reported feeling empowered to make environmental change.

Many of those five subjects that did not yet feel empowered cited lack of time as a barrier and Mason cited lack of direction as a barrier, despite the fact that they thought they could be empowered if they joined an organization. Paul and Amy felt that if they joined a group they would increase their abilities to make change. Paul said that the barrier between him and joining an organization was, "lack of awareness of it, or lack of them around my area. Around here there's not that many at all."

Nate and Janet attributed their lack of power to their position in life and their inability to influence politics. Janet said,

I don't think that on the grand scale it's very easy to really make a big difference until you've had a formal education or more experience through college education or other areas. I'm only 18 and right now it's difficult to have a voice.

Clearly, there was a difference in perception between Abe and Jackie as compared to the remainder of the subjects. Abe and Jackie believed that their small actions make a difference, whereas the other subjects did not seem to share that certainty.

Regardless, all of the summer of 2005 subjects engaged in some level of EPB prior to their course, although Jackie and Abe did appear to engage in the greatest amount and to display the highest level of awareness.

Immediately after their course, all but Nate said that they felt more empowered, with Nate saying that he did not feel more empowered, but rather felt a greater sense of responsibility. The remaining subjects all felt that they had gained an increased sense of empowerment through increased leadership and people skills; the experience of trying and succeeding at new tasks; and through completing all the physical challenges included with the expedition. Jackie explained,

I think because a lot of it was experiential learning and was like do it yourself - here's the tent repair kit, fix your tent. And you know, figure out how to cook your dinners and all of that. And when you figure it out by yourself, and you make this great dinner and your tent-mates are like, 'Oh, this is a great dinner,' it's a great feeling, so wanting to have that feeling in the front country, and just transferring it right over.

Janet said,

You have to rely on yourself. You're carrying everything you need, so it makes you feel really strong, you know when you're climbing up a 45 grade mountain and you get to the top and you feel like you've conquered the world when you're up there. Incredible.

Abe explained the ways in which he felt more empowered as, "With my abilities and knowing how I can work with people, that I can affect more change." He went on to say,

We had leaders of the day, and I was chosen to be the leader. And this was an opportunity for me to, to allow me the ability to kind of play around with different leadership positions. So I do feel empowered in that way.

Months later, when asked specifically about changes to their sense of empowerment since the course, all of the subjects said they felt more empowered as a result of their course. Five of the nine made specific reference to feeling more empowered to lead or participate in outdoor expeditions. However, many of those five connected that sense of empowerment in the outdoors to the rest of their lives. Jackie said, "I just feel more willing to be challenged." Cameron said,

I definitely gained skills on my trip, like technical skills of hiking and rock climbing, stuff like that. But I also feel empowered in my self-confidence and just in my ability to overcome nearly anything. After having to overcome long 13-hour hiking days, and lightning storms and all that, I feel like I can overcome the equivalent of a lightning storm in a college student's life.

Others did not specify an increased sense of empowerment in the outdoors, but rather talked about other aspects of their lives. Amy said, "I called my senator for that vote yesterday, the budget vote, and told him to vote against it. I would have never done that before. And I still hate politics. But I felt like it was worth it." Paul said, "It made me want to take more chances, and more putting myself out there and being willing to learn things and take control, and be the leader of things."

When asked about confidence, rather than empowerment, half of the summer of 2005 subject group reported feeling a greater sense of confidence than prior to their

course. Amy connected her increased sense of confidence to, "I can go out into the remote wilderness and survive for a month." In addition she said, "Going into a situation where I didn't know anyone, I didn't know what was going to happen, and I came out of it having a lot of fun, learning a lot and meeting some good people." Others described confidence gained through leadership, navigation skills and other technical skills as described above when asked about their sense of empowerment.

Subjects in the alumnae group responded more specifically to the effect of a NOLS course on their sense of empowerment around environmentally positive behavior. Half of the alumnae reported feeling a greater sense of empowerment around environmentally positive behavior because of their course. Ben said, "Well I guess it goes back to feeling more confident, more knowledgeable about the topic. So you have a better idea how to go about making any sort of change or difference." Jake described several ways in which NOLS empowered him in both outdoor activities and the rest of his life, saying that,

It provided leadership opportunities. It provides a foundation when other things become overwhelming and disappointing, to say, to hell with it, I'm going to go mountaineering this weekend, and I can do it safely. . . . And that's one way it works. And another way is to be able to stand up in front of people and say hey, here's what I believe in and here are the reasons for it, and I believe in these things, and you can see by my actions that I value these things.

One subject, Manuel, said that he did not feel empowered in this area due to his NOLS course,

I think from NOLS I learned how one should or ought to behave in the wilderness to take care of it, but I don't feel that I learned how I could be actively involved in protecting wilderness or anything else. . . . It was an excellent way of learning personal values for when I am in the wilderness, but not really the way of changing policies that exist or of changing the way that others around me might view their interaction with the environment.

Responsibility

To varying degrees, all of the subjects in both groups felt that it was their responsibility to deal with environmental issues. Summer of 2005 subjects were not asked specifically about any changes in their sense of responsibility as a result of the course, although prior to their course, all of them said that they felt a responsibility to behave in an environmentally positive manner to varying degrees. Half of the alumnae group said that their course increased their sense of responsibility, with some attributing the change to their inability to rely on ignorance as an excuse or to a deepening of their understanding of their potential role in conservation. Other responses were less specific and did not provide insight as to why they felt a deepened sense of responsibility. Two of the alumnae said that the sense of responsibility they gained from their course was the most important lesson they had learned from NOLS.

Prior to the course, seven of the nine subjects in the summer of 2005 group echoed Janet's sentiments, "It's everybody's responsibility. This is the place we're leaving for our children. Simple enough. We have to keep it there. It's everybody's responsibility."

Nate, who said that he "absolutely" felt it was his responsibility to deal with environmental issues, expressed his sense of responsibility as more of a responsibility to act in the future or at some point in his life,

There are a lot of people out there who care a lot about it and who devote their whole lives to it, which is something I haven't done. . . . My whole desire is to do it on a grander scale than just me going out and cleaning up the forest, which is something we used to do when we were kids.

Only two of the nine summer of 2005 subjects expressed some reservations as to their responsibility. One of them, Mason, said, "It (accepting responsibility) may be hard on my lifestyle, difficult to handle. I think in some way that I accept that I have some responsibility, but I'm not really taking that responsibility at the moment."

All of the subjects in the alumnae group said that they felt it was their responsibility to deal with environmental issues. Like the summer of 2005 group, two subjects attached stipulations to their affirmative response to the question, with Alan saying,

Yes and no. It kind of depends. Yes, I think it's my responsibility if it's going to affect me. Which, in the end you could say that everything is going to affect me. If it's a big issue that is going to have a global scale, you can bet I'll be there. If

it's a matter of minor scale and something that really isn't going to affect me, I really don't feel a responsibility to be there.

More than half of the subjects in the alumnae group felt that their NOLS course had changed their sense of responsibility in terms of their environmentally responsible behavior. Jill explained,

They basically teach you the relationship of how you're going to impact the environment. Like, this behavior that you do, this is the negative outcome. So it's just kind of associating. . . if you're going to leave food out and you have a messy campsite, then you're going to attract animals or bears. . . . And I think that relationship can relate back to any action. So it's like, if you're going to have an SUV, you're going to consume more natural resources and you're going to pay more. So I think it's learning to think holistically about what your behavior is going to do to the environment.

Richard gave an extremely concrete example of how his instructor influenced his sense of responsibility,

My instructor was Harold Vanderpool. . . and I can remember following the end of a couple of our discussions, Harold having us look around at the landscape of the North Cascades and asking, why is it that this land is here, and how is it that this land is here? And of course I was thinking it was some fancy geological explanation of why the valleys were shaped and why the different species of trees were there, and his short and sweet answer was, 'this is here because people want it to be here. And as soon as enough people decide they don't want it to be here, it

won't be, and it will become a parking lot or a ski resort or whatever.' He was pointing out that power that society has. He wasn't preaching conservation, but it just made me aware that if we want, we collectively, to keep the land this way that somebody needs to take an active role in making sure that people want it to be there.

Two alumnae said that personal responsibility was the biggest lesson they took with them from their NOLS course. Amit said, "I think I learned to be personally responsible as a citizen. I'm trying to put two things into one basket, but I think I learned to be personally responsible as a citizen, and not just *be*, so to speak."

Alan, one alumna who said that the course did not influence his sense of responsibility said he already had a strongly developed sense of responsibility prior to his course. Others did not explain why they thought the course had not influenced their sense of responsibility. The summer of 2005 subject group, who prior to their course all said that they felt a personal responsibility to behave in an environmentally positive manner, were not asked specifically if their course affected their sense of responsibility for environmental issues.

Skills

All of the summer of 2005 subject group and several of the alumnae group described an increase in their outdoor skills because of their experience with NOLS. Although prior to their course, all of the summer of 2005 subjects said that they felt they had or could find the skills needed for environmental action, many described an increase

in related skills because of their course. The majority of the alumnae subject group felt that they had the skills to take action around environmental issues either in their daily life or in other ways. About half of those subjects thought that NOLS contributed to their skills, with some describing skills directly connected to spending time outdoors and others describing a broader set of skills. Several of the alumnae group also reported an increase in skills in outdoor living, minimum impact and other broader areas as a result of their NOLS courses. For both groups, these related skills included leadership and people skills as well as specific skills like letter writing and the reinforcement of daily environmentally positive behaviors around resource conservation. Some subjects in the alumnae group said that the knowledge they gained of land management organizations provided them with the skills and knowledge they needed for action.

In an answer typical of several of the summer of 2005 subjects, Abe felt that he lacked some skills, although when pressed on what he was lacking he appeared to connect skills with motivation. He commented, "I have the basic skills. Not as much as I'd like." In response to what area he felt he was lacking in, Abe responded, "I guess the consumer part of it. . . . I feel like I still buy into a large part of the consumerism. That's one area that I don't know how to detach from." Upon his return, his consumer behavior is what Abe said he felt largely motivated to change.

When asked about any new skills that they had gained immediately upon their return, all of the summer of 2005 subjects reported an increase in their outdoor skills and many described an increase in Leave No Trace, leadership, first aid and people skills. Clearly, minimum impact skills are directly related to subjects' environmental impact

when traveling in a wilderness setting. With the exception of the first aid skills, these particular skills are both directly and indirectly connected to subjects' environmental impact. For example, Abe connected his increased leadership skills to his ability to positively affect the environment in that,

One thing about leadership that I learned out there is that you kind of have to act what you want. One thing that Gandhi said is be the change you want to see. You have to act like what you want. I think that when I go back to school, I'll tell my friends about what I learned about there. And when we go camping or if we go on some trips, just teach them what I learned, and I think by doing that I'll definitely have some change. I'll definitely start change, you know at least on this scale. And as I get older, the amount of change that I'll be able to make will increase hopefully.

Cameron described an increase in specific skills, beyond Leave No Trace in a wilderness setting, that he could use to positively affect the environment. "I learned some more ways to be more responsible environmentally. . . . I learned some new ways to apply my old conscience." He said that this statement applied to actions in his daily life and in an outdoor setting and that he learned these new applications in his Leave No Trace lessons.

Some of the alumnae said that their course laid a platform or strengthened previous behavior. Joe said,

I think the NOLS course sort of reinforced a lot of the stuff that I was already doing, and just sort of reinforced stuff that I already knew. . . We would just

periodically have discussions about environmental issues or environmental awareness as a whole. We would talk about some of the choices we can make as individuals, about recycling and reducing garbage, or energy costs.

Alumnae Jake and Daniel both said that learning about the management of public land provided them with important skills and knowledge needed for action. Daniel said,

So beforehand, I just wouldn't have known what to do. If someone had told me my water was polluted, would I have called the police? I just had no idea what to do. And now I just have a sense of, 'Oh ok this is where my water's coming from: it's starting from the headwaters of this river by this glacier, and this section is managed by the park service and this section is managed by the city municipality -at least in the democratic process, knowing where to start organizing.

Richard, unique in the alumnae group in that he participated in a NOLS course over 20 years ago, said of his experience,

I guess I never felt like NOLS had a real strong environmental agenda. They didn't teach Leave No Trace, I'm not even sure Leave No Trace was developed back then, actually. But, they taught you just how to operate correctly in the backcountry, not leaving a lot of waste, not leaving a lot of damage where you went and that sort of thing. I don't feel like there was an environmental agenda in a NOLS course. I would like it if they had a stronger one. But I felt like it was more kind of a leadership training, and wilderness skills.

Other alumnae said that they learned their skills after their NOLS course or during school and that NOLS had not contributed to their skill set.

While all of the summer of 2005 subjects and some of the alumnae credited NOLS with increasing their outdoor living skills, many, but not all of the summer of 2005 subjects and less than half of the alumnae said that NOLS increased their skills in terms of their ability to behave in an environmentally positive manner or deal with environmental issues. Those who did say that NOLS increased their skills in term of EPB cited both hard and soft skills; that is to say that subjects learned specific skills such as letter-writing as well as leadership skills that they could apply to environmental activity.

Conclusion

It therefore appears that a NOLS course had an effect on multiple areas of subjects' lives, many of which are interrelated and have the potential to contribute to subjects' environmentally positive behavior. Although many of the changes participants experienced relate only indirectly to their ability to behave in an environmentally positive manner, it seems that many experienced a dramatic change in at least their motivation in this realm.

Chapter Five: Conclusion and Discussion

This section will examine the intersections between the findings and the content discussed in the introduction and literature review.

Summary of Findings

To broadly summarize the findings of this study, as a result of their NOLS course, all subjects described an increase in their connection with nature and the outdoors. All of the summer of 2005 subjects and half of the alumnae reported increases in their environmentally positive behavior (EPB) and their level of empowerment, knowledge of environmental issues and their skills pertaining to outdoor living and EPB. Subjects in the summer of 2005 group attributed changes in their relationship with nature to the duration and location of their courses, whereas subjects in the alumnae group also cited instructors and increased knowledge as factors influencing their relationship with nature and the outdoors. Subjects in both groups felt that changes to their EPB came from multiple factors including the experience of living off so little for so long, of creating such a modest impact as they traveled, and of traveling for an extended period through isolated and beautiful regions. In addition, subjects credited the instructors as well as conversations and lessons around environmental issues, physical sciences, land management agencies and applications of minimum impact at home. Changes to

perceptions of self-efficacy, which occurred for many of the subject in the realms of empowerment, knowledge and skills, came from working through challenges, lessons, and experiential learning experiences respectively.

Relationship with Nature and the Outdoors

Subjects' reported increased connection and intimacy with nature and the outdoors resulting from their NOLS course has potential pertinence to subjects' environmentally positive behavior. Tanner's 1980 retrospective qualitative study in which he asked environmental activists what led them towards a path of environmental citizenry most directly lends some support for such a connection. Both in form and in results, the alumnae portion of this study resembles Tanner's study, with the exception of the fact that I selected the alumnae in this study due to their participation on a NOLS course, rather than due to their current environmental activism. However, of the ten alumnae who participated in the study, two have environmentally focused careers, two are heavily involved in environmental nonprofit work outside of their paying jobs and the remainder engages in a variety of EPB. Just as the vast majority of the alumnae interviewed in this study call the month spent outdoors on their NOLS course a pivotal experience that laid the foundation for future environmentally positive behaviors, Tanner's subjects count time outdoors as a child as the dominant influence in determining their career choice. Tanner, and several subjects in this study, concludes that people must learn to love the outdoors if they are to be motivated to protect it. One other major difference between the subjects of this study and Tanner's subjects is that Tanner's

subjects made their connection with the outdoors at very young ages, whereas some of the may have forged that connection for the first time during their course in their teens or twenties.

The other support for the relationship between an increased connection with nature and environmentally positive behavior comes from the various behavior models, detailed in the discussion section of this chapter.

Environmental Concern

Participation on a NOLS course appears to have a positive effect on subjects' desire to engage in outdoor activity. All of the subjects connected outdoor activity with environmentally positive behavior. In addition, when asked generally about changes in their self-perception due to the course, about half of the summer of 2005 subject group described an increase in their level of environmental consciousness.

As discussed in the literature review chapter of this study, the association between the enjoyment of outdoor activity and environmental *concern* (as opposed to *behavior*) has received some investigation, yet has not produced analogous results from one study to the next. The 1975 study by Dunlap and Heffernan found that there is a stronger relationship between environmental concern and appreciative activities (such as hiking and photography) than between environmental concern and consumptive activities (including fishing and hunting). In addition, Dunlap and Heffernan found a stronger association between outdoor recreation and a concern for those areas used for recreation than they found for the association between outdoor recreation and other "distant"

environmental concerns. Follow-up studies do not entirely bolster the strength of their findings, as they came to both contradictory and supportive conclusions.

None of the questions in this study focused specifically on environmental concern, but rather on environmentally positive behavior. Thus, while the results of this study cannot be tied directly to Dunlap and Heffernan's (1975) hypotheses, it is interesting to note that the subjects themselves correlate their behavior (and therefore one might deduce an effect involving the *concern* that contributes to those behaviors) and their enjoyment of outdoor activities. In addition, several of the subjects described a desire to protect the areas they like to visit or might one day want to visit, lending support for the hypothesis that outdoor enthusiasts have greater concern for areas used for recreation than they do for other distant concerns. Of course, although NOLS courses consist primarily of what Dunlap and Heffernan would term "appreciative" activities, NOLS students also engage in the "consumptive" activity of fishing.

Changes in Environmentally Positive Behavior: Behavior Models

The majority of subjects described changes, or at least intension to make changes, to their environmentally positive behavior (EPB) because of their course. All of the behavior models discussed in the literature review include an interaction between such variables as knowledge, intention and attitudes, that when combined are expected to have an influence on behavior (Ajzen, 1988; Hines et al., 1987; Hungerford & Volk, 1990). Subjects saw increases in many of these areas, which lends support to the models and to the possibility for further increases in the subjects' EPB. Once again, subjects

attributed their behavior changes to the following factors (in no particular order): living simply and with little impact; traveling through beautiful country far from other humans for an extended period; the model of the instructors; and learning about environmental issues, natural sciences, land management agencies and applications of minimum impact at home. These factors do not correlate directly with the behavior models, although some aspects of the models can be drawn out of the subjects' responses. In addition, subjects reported an increase in many of the characteristics described by the behavior models, but may not have connected them to any change in their EPB.

Hines's 1987 Model of Responsible Environmental Behavior describes a direct correlation between subjects' attitudes towards nature and the outdoors and their environmentally positive behavior, as the model cites the combination of personality factors with knowledge of action strategies, action skills and knowledge of issues in order to create an intention to act. Hines lists attitude towards nature and the outdoors as one of the relevant personality factors. All of the subjects reported positive increases in their relationship with and appreciation and respect for nature as well as their environmental knowledge. Subjects claimed that their increased appreciation and respect for nature provided them with motivation to behave in an environmentally positive manner, while their increased knowledge allowed them to better direct their actions. Fewer of the subjects reported an increase in relevant skills and/or action strategies outside of Leave No Trace as applied in a wilderness setting. However, those subjects that did describe an increase in skills and strategies as a result of their course were also able to lay out specific, new environmentally positive behaviors they intended to carry out or had

already begun carrying out. If NOLS or similar organizations desired to increase the impact of their effect on their students' environmentally positive behaviors, they might focus on augmenting instruction around relevant skills and action strategies for EPB.

Hines et al. (1987) acknowledge the impact of situational factors on a person's EPB, which could assist or obstruct the realization of intention. In part, the varying degrees of EPB self-reported by the subjects can be connected to their living situation. The seven college students have relatively limited control over major purchasing and living decisions, for example, as compared to their non-student counterparts in this study. School facilities are likely to set the boundaries on participants' ability to compost organic waste, reduce their electricity use or use alternative energy. On the other hand, college campuses are often easy places to commute without automobiles (as most of the college students who participated in this study seem to do) and may have comparatively more access to environmental organizations than a workplace would. The living situations of the alumnae are more similar to one another and to the two non-college students in the summer of 2005 subject group, and it is likely that this group has somewhat more control over their EPB, particularly in the realm of purchasing. One third of the summer of 2005 subject group and several members of the alumnae group experienced a major change in their living situation (such as going to college for the first time or moving from the Midwest to the west coast) directly after their course. These changes likely confounded participants' ability to determine the effect of the course on their daily EPB.

Hungerford and Volk (1990) build upon the Hines et al. (1987) model to create another behavior model with pertinence to the results of this study. Hungerford and Volk describe generalizable environmentally responsible behavior as arising from the complex relationship between Entry Level, Ownership and Empowerment variables. The authors list environmental sensitivity as the most crucial Entry Level variable. All subjects appear to have experienced an increase in their environmental sensitivity as resulting from their NOLS course.

Ownership variables are composed primarily of knowledge about and personal investment in environmental issues. As mentioned above, all subjects reported an increase in their knowledge or their sense of responsibility for accruing knowledge because of their course. However, all participants did not report an increase of their knowledge of *environmental* issues. Those who did describe learning about a particular issue appear to have discovered or created a significant personal investment in that issue.

The third variable consists of knowledge of and skills in environmental action strategies, locus of control, and intention to act. As predicted, subjects appear to have gained considerable action strategies around minimum impact behavior in a wilderness setting and fewer action strategies for minimizing their impact outside of that setting. While this study did not specifically ask questions around locus of control, all of the summer of 2005 subjects and half of the alumnae described gains in their sense of empowerment, which some connected to their ability and desire to behave in an environmentally positive manner. A NOLS course appears to have affected the intention

to act in an environmentally positive manner for all of the summer of 2005 subjects and about half of the alumnae subjects. Again, the area for improvement appears to be the knowledge and skills surrounding environmental action strategies.

Ajzen's (1988) Theory of Planned Behavior states that people are likely to act in line with their intentions, which are based upon attitudes towards the behavior, subjective norms and perceived behavioral control. Subjective norms refer to the social support one receives for a behavior. All of the NOLS summer of 2005 students had some degree of support for EPB, or subjective norms that sustain EPB, be it through close friends or family. It is interesting to note that the two subjects who seemed to go through the most dramatic changes of all of the summer of 2005 subjects in terms of their awareness, motivation and self-described behavior towards EPB because of their course had family but not many friends at home that they felt engaged in EPB. Their self described increased motivation towards EPB after the course could lend support for the subjective norms arm of Ajzen's theory, in that the course likely created a supportive peer group for those subjects, Nate and Cameron, albeit a remote one. By the end of the NOLS course in which a group spends an entire month only within one another's presence, that group may begin to share norms, including those around respect and appreciation for nature and potentially including those around EPB.

In terms of the second factor, attitudes towards a behavior, several of the summer of 2005 subjects reported changes in their attitudes towards behaviors, in that some EPB began to look like less of a hardship. This appears to result from both conversation with other students and instructors regarding their daily EPB and the fact of

living so simply on the course without dishwashers, cars and anything other than what they carried on their backs. In addition, while subjects' attitudes toward the environment do not necessarily address their attitude towards a behavior, it is likely that the shift in subjects' attitudes towards nature and the outdoors has the potential to influence their attitudes towards environmentally positive behavior.

The third factor in Ajzen's (1988) theory is perceived behavioral control, which Ajzen cites as a direct link to behavior (rather than to intention to act) when it matches actual control. I did not probe subjects on perceived nor actual behavioral control, yet many of the summer of 2005 subjects did discuss their lack of control due to their age or living situation in a college dormitory. As I did not ask alumnae about their perceived behavioral control, it is impossible to tell what came from their course and what came from life experiences.

Borden and Schettino's 1979 study arrives at a somewhat less complete theory than the models described above provide, but it does illustrate the additive relationship of knowledge and affect in determining commitment towards EPB. In the Borden and Schettino study, subjects with high positive affect towards the environment showed a slightly greater commitment towards EPB than did subjects with high levels of environmental knowledge. Subjects with high levels of both factors did not have disproportionately high levels of EPB. Subjects in the NOLS study describe an increase in both their positive emotions and knowledge towards the environment.

Thus, there appears to be both evidence that subjects increased their intention to behave in an environmentally positive manner as well as evidence that subjects

increased factors that behavior theorists postulate are contributors to environmentally positive behavior. By examining these behavior models, I do not intend to confirm the veracity of those theories or even provide evidence for a correlation between subjects' experiences and those models, but rather to provide a lens through which to examine strengths and weaknesses within NOLS' ability to influence student behavior beyond the duration of the course.

Environmental Generational Amnesia

For those subjects who attributed changes in their environmental ethic as deriving from the duration of their experience in the outdoors and the correlated increase in their appreciation of nature, one finds support for Kahn's (2002) proposed method of easing environmental generational amnesia by introducing young people to pristine wilderness and therefore recalibrating their sense of normal. Although this was not the first foray into the wild for the vast majority of these students, most had not spent such a lengthy period of time without seeing other humans or the impact of other humans. As many subjects did report increases in their EPB and their motivations for EPB, it is possible, that as Kahn suggests, that a view of what is possible in terms of untrammelled nature altered some subjects' vision of the world and increased their motivations for EPB.

Recommendations

Assuming that an organization such as NOLS does indeed wish to facilitate a transfer of environmental ethics from the wilderness to behavior and actions outside of the wilderness, they might attempt to include more methods of transferring learning, as suggested by Michael Gass (1990) in "Transfer of Learning in Adventure Education." Based on course descriptions given by the students and based on the format of the course, it is clear that many of Gass' techniques take place on the majority of NOLS courses. In addition, many of the suggestions below may not match the current format of a NOLS course, although they are compatible with other adventure education programs. However, for those interested in discovering additional tactics, Gass recommends:

- 1) Design conditions for transfer prior to the learning experience (goal setting with students, etc.);
- 2) Create learning environments that parallel future learning environments (approach problem solving in a general manner);
- 3) Provide the opportunity for transfer while on the course;
- 4) Facilitate natural consequences (avoid overpowering or "over caring" for students);
- 5) Provide the means for internalizing learning through verbalization or other reflective processes;
- 6) Include past successful alumnae on the course that can share how they transferred skills;

- 7) Include significant others such as family, peers, counselors or teachers;
- 8) Increase the responsibility for learning with the student (an area in which NOLS clearly excels);
- 9) Develop processing techniques that are based on the students' abilities, link the experiences from present and future learning environments, and (when possible) debrief before and during the learning experience as well as after.
- 10) Provide follow-up opportunities to facilitate the transfer and allow for reflection between learning situations.

Areas in which NOLS achieves great success are the already impressive teaching and practice of Leave No Trace as well as the format and location of their courses. This leaves the lessons and conversations that take place on their course as an area for advances. Most, but not all of the subjects, recalled conversations around transference of minimum impact ideology to their lives at home. For some subjects the conversations or lessons repeated information and patterns of thinking they already knew, but for others, those conversations appeared to have a profound impact. I therefore support Hanna's (1995) recommendation of increased discussion of post-trip environmental and wilderness-related intentions and suggest that as an organization, NOLS assist their instructors in further incorporating a transfer of minimum impact skills to students' day-to-day lives, in order to help those students make the connection between minimum impact in the backcountry and in the front country. While time restraints clearly pose a challenge to incorporating new lessons, it appears that most of the

conversations on the topic, even those described by participants as having an impact on their EPB at home, lasted no more than 15 minutes during the final Leave No Trace lesson of the course. On the other hand, some subjects reported disappointment that the topic was not covered more thoroughly, so perhaps for some groups, even those on NOLS' more "introductory" courses, instructors could attempt to take more time on the topic.

For several of the subjects, increases in knowledge appear to have made a significant impact on their EPB and environmental activism in a manner that moves beyond their daily habits. For some this meant learning about land management and their role in preserving land, for others, the understanding of ecological concepts or specific environmental issues provided them with the intention to act. Therefore, I pose that teachings in these areas are one of NOLS' strengths and that to whatever level is possible, NOLS continue and even enhance their training of and support for instructors in the teaching of environmental issues, ecological concepts and land management.

In addition, the two subjects that appear to have experienced the most profound increase in their motivation towards environmentally positive behavior differed from the rest of the group in the support they received for their EPB from peers at home. Only one of them, Cameron, seems to have maintained his motivation towards EPB, perhaps in part because he joined a campus environmental group upon his return (and thus assumedly gained peers that could support his EPB), while the other, Nate, did not. NOLS might mitigate some of the losses experienced by students like Nate in this area

and possibly others by expanding the networking they encourage amongst all NOLS students and course-mates in particular. Again, NOLS does have alumni networks and a regular news magazine, so room for improvement may be limited.

Reflections on this Study

Upon reviewing the data from this study, it became apparent that the wording of some of the questions might have led to fewer positive responses than if I had phrased them differently. For example, when summer of 2005 subjects were asked if the knowledge they gained on their course affected their ability to make environmental change, many may have been thinking only of large scale change. Many subjects gave negative responses to this question and others like this one, and those that answered positively primarily discussed their ability to write intelligent letters to people in power now that they knew more about an issue. If I had phrased the question in a manner that clarified my interest in a broad spectrum of environmentally positive behavior, other environmentally positive behaviors may have come to mind and been included in the subjects' responses.

One other oversight is that I did not ask many of the summer of 2005 subjects in their third interview about whether they were participating in the specific environmentally positive behaviors they had described an intention to carry out immediately after their NOLS course. The responses to this question could have shed additional light on what facilitates or precludes a transfer of minimum impact behavior from the wilderness setting to subjects' lives at home.

Further Research

In order to better understand the difference between a self selected NOLS student and the general population, I recommend that any follow-up studies include a control group with similar demographics to the NOLS students that participates in between one and three interviews. For example, it would be interesting to know the level of EPB of the general population and if they feel a sense of responsibility to deal with environmental issues. One could then examine the differences between NOLS alumnae and the general population.

There does appear to be a connection for some subjects between their recollections of on-course discussions of the impacts of their lives at home and their reported environmentally positive behaviors outside of wilderness settings. However, what is impossible to know from self-reports is whether those conversations (and other pertinent discussions) took place on every course and were forgotten by some of the subjects in this study, or whether most, but not all, courses include discussions, activities or lessons focused on the impacts of students' everyday lives and potential mitigations of those impacts. If the former is the reality, then it could be that those lessons resonate and remain in the memory of a portion of the students already keyed in to environmentally responsible behaviors and a portion of those whom are most open to the information. For those students not ready for the information or unable to learn in the manner that the information is being taught, the lesson might pass them by. Something as straightforward as a long day hiking, an uncomfortable seat or a cold breeze could preclude learning, and

thus absorption or memory of the conversation. On the other hand, some students may not be at a phase of development in which transference of experience holds any meaning for them. The implication is that to understand fully the effects of the specific lessons and discussions of the course, the research design could benefit from the inclusion of some form of pre and post-trip interviews with instructors to determine their intended lessons or teaching goals as well as the final completed lessons and debriefings. Another research design that could eliminate this uncertainty, but that also might significantly skew results, would be the participation of the principle investigator on the course – a design which would allow for “outside” documentation of lessons taught, discussions had, etc.

On the other hand, a single discussion with an instructor or a series of conversations with other students around various topics appears to have been the most influential aspect of the course on the EPB of many subjects. It would be impossible for a single researcher or even the instructors to capture all of those moments or even to know in advance which conversations were to be the influential ones.

An interesting study on a different yet related topic might examine the comparative environmental impacts of a weekend mountaineering or backpacking trip versus a weekend spent in the city or suburbs. Nearly all of the participants reported an increased desire to spend time outdoors. Most of the alumni said that they try to get into the wilderness as much as possible. Considered apart from any environmentally positive intentions or behaviors, does this isolated, but seemingly widespread, effect of a NOLS course result in a greater or lesser environmental impact?

Final Remarks

Cronon (1996) writes that, "Wilderness tends to privilege some parts of nature at the expense of others" (p. 86). Yet the implications of this study are that the experience of wilderness as provided by a NOLS adventure education course in fact increases subjects' environmentally positive behaviors in and outside of the wilderness setting, contrary to Cronon's fears. While many of the subjects of this study focus their passion for the environment on wilderness settings that are separate from the places they live in, nearly all expressed a deepened understanding of the connection between the existence of "wild" places and their actions in their urban, suburban or rural homes as a result of their course. This is not to say that a metaphorical transfer will occur regardless of the program or the student's efforts, but as per the results of this research, we need not worry about the harmful effects of this form of guided romance with wilderness.

Appendices

Appendix A: Questions, Interview 1, Summer of 2005 Subjects

- 1) Do I have the correct information and spelling for your name and hometown?
- 2) What is your occupation?
- 3) What is your age and date of birth?
- 4) What is your race/ethnicity?
- 5) What is/are your parent/s occupations?
- 6) Who do you live with?
- 7) Describe the town you live in.
 - a. About how many people live there?
 - b. Is it urban or rural?
 - c. Would you describe the town as more liberal or conservative? Progressive or traditional?
 - d. Is it a wealthy or a less well off community?
- 8) What previous experiences have you had in nature?
 - a. Where were you?
 - b. Who were you with?
 - c. For how long?
 - d. What do those experiences mean to you?
 - e. Do you feel that they have shaped you in any way?
 - i. How so?
 - f. Have these experiences influenced your decision making or goals?
 - g. Have you learned anything from these experiences?
- 9) How do you define nature?

- a. Do you include city parks? Your backyard? Your houseplants?
Abandoned lots? Yourself? Human constructions like canals?

10) What is the first thing that comes to mind when you hear the word wilderness?

- a. Is it different from your concept of nature?
 - i. How so?

11) Do you consider yourself to be environmentally active?

- a. How so?
- b. If you had to rate yourself on a scale of 0 to 5, with 5 as the most environmentally active and 0 as the least, where would you be?
 - i. Why?
- c. Please describe the ways in which you are environmentally active.
 - i. Any political activities? Daily lifestyle choices?
- d. Where did you learn these practices?
- e. How long have you done them?
- f. Why do you do them?
- g. When do you deviate from those practices?
 - i. What leads you towards those deviations?
 - ii. How do you feel when you deviate?
- h. Are there environmentally beneficial behaviors that you would like to partake in that you currently do not?
 - i. What is preventing you from current action?
 - ii. What might allow/motivate you to change your current behavior?

12) Is there an environmental issue that you feel particularly passionate about?

- a. Can you tell me the story of how you became aware of that issue?
- b. What (if anything) have you done to address that issue?
- c. Do you do as much as you would like to do?
 - i. Is there anything else you wish you could do around that issue?
 - 1. What, if anything, is preventing you from those actions?

- d. Do you feel like you have the power to change environmental issues through your actions? How so/Why not?
 - e. Is it your responsibility to deal with environmental issues? In what ways? Does this apply to your daily lifestyle choices? Beyond? How so?
 - f. Do you feel like you have the knowledge about environmental issues you need to behave as an environmentally responsible citizen?
 - g. Do you feel like you have the skills to take action regarding environmental issues, be it in your daily lifestyle choices or in other ways?
- 13) Do you have friends and/or family members with what you consider to be environmentally positive behaviors?
- a. Do you also participate in those environmentally positive behaviors?
 - b. How do you feel about your family's/friend's behaviors?
- 14) Do you think that enjoying outdoor activity is connected to environmentally responsible behavior?
- a. How so?
- 15) Have you ever participated in a NOLS/OB course prior to the upcoming course?
- 16) Why are you taking this course?
- 17) Do you know anyone who has taken a NOLS/OB course?
- a. What did they tell you about it?
 - b. Did they feel different or changed in any way afterwards?
 - c. If so, how did they describe these changes to you?
- 18) What do you expect to get out of your NOLS/OB trip?
- a. Is there anything else that you hope to get out of it?
- 19) Is there anything else you would like to tell me?
- 20) Thank you for your time. I told you at the beginning of the interview that I would be asking you for permission to use your real name in conjunction with the information from this interview. Do I have your permission to use your real name? With your permission, I will be calling you again in the first week after you return home from your course and speaking with you about your experience.

Appendix B: Questions, Interview 2, Summer of 2005 Subjects

- 1) How was your course?
 - a. Was it a positive experience?
 - b. What was your favorite part of it?
 - c. What was the worst part of it?
- 2) Do you feel differently about the outdoors now versus before your course?
 - a. If yes, how so?
 - b. Why?
- 3) Do you feel like you have a closer connection to nature now?
 - a. In what ways?
 - b. Why?
 - c. Does it spread into your life at home?
 - d. If so, what do you think will happen with that connection over time?
- 4) Do you feel different about yourself now?
 - a. If yes, how so?
 - b. Why?
 - c. Do you feel a greater sense of empowerment than you did before your course?
 - i. In what ways?
 - ii. What led you to feel that way?
 - d. Do you feel more knowledgeable?
 - i. In what ways?
 - ii. About the environment?
 - iii. What led you to feel that way?
 - e. Do you feel more skilled?

- i. In what ways?
 - ii. What led you to feel that way?
- 5) How do you feel about being back home?
 - a. Do you think others are able to understand your experience?
 - b. Do you want to do anything differently in your life at home?
 - i. What?
 - ii. Anything else?
 - iii. What about your course makes you want to do things differently?
 - c. Do you think you'll be able to?
 - i. Why/Why not?
 - ii. Will your friends and family support those changes?
 - d. Did you talk about your life at home on your course?
 - i. In what capacity?
 - ii. Who brought it up?
- 6) Do you feel differently than you did before the course about your capacity to positively affect the environment with your actions?
 - a. In what ways?
 - b. In your daily life?
 - c. How did you learn that?
- 7) Do you feel differently about your ability to negatively impact the environment?
 - a. In what ways?
 - b. Why?
- 8) Did you gain new knowledge about the environment?
 - a. What is it?
 - b. How did you learn it?
 - c. Will it change your ability to affect the environment with your actions?
- 9) Did you gain new tools to positively affect the environment with your actions?
 - a. What are they?
 - b. How did you learn them?

- c. Will it change your ability to affect the environment with your actions?
- 10) Did you have any particular moment of realization or change on your course?
- 11) What is the most important thing you learned on your course?
- a. How did you learn it?
 - b. Why is that the most important?
- 12) How were the instructors?
- a. What were their names?
 - b. What do you think they wanted you to take away from the experience?
- 13) What was the most important thing you learned from your formal lessons?
- a. Do you feel like you can use any of that knowledge back at home?
 - i. What knowledge and how so?
- 14) Do you feel like you can use any of your minimum impact knowledge at home?
- i. What knowledge and how so?
 - ii. Will you have support from your friends and/or family?
- 15) On your course, did you discuss the environmental impact of your life outside of the wilderness?
- a. If so, did those conversations have any influence on your thinking?
- 16) Do you think the other people on your course have more or less environmentally positive behaviors at home than you do?
- 17) Do you feel like you live a high or low impact lifestyle at home?
- a. In what ways?
- 18) Did anything that took place on your course change the way you feel about the impact of your life at home?
- a. What was it?
 - b. What did it change?
 - c. Have you been able to implement that change?
- 19) Are you doing anything differently now than you were before your course?
- a. How so?

- I'd like to ask about some other specific behaviors you might not have mentioned. I am in no way suggesting that you *should* be doing one thing or another. We all have competing interests and needs that influence our decisions and I'm just interested in learning about yours. (Skip behaviors that have already been discussed or *go into greater depth here if appropriate*).
- a. What is your primary mode of transportation?
 - i. What influences that decision?
 - ii. When do you deviate from your norm?
 - iii. Do your behaviors in this realm align with your value system?
 - iv. How do you feel about that?
 - v. Is this an important decision for you?
 - vi. Is there any difference now versus before your course?
- b. What are the most important factors in your purchasing decisions?
 - i. When might you weigh other factors more heavily?
 - ii. Do you feel like you have the options available to purchase in line with your value system?
 - 1. If not, what is lacking?
 - 2. If so, what does that look like?
 - iii. Is there any difference now versus before your course?
- c. Do you recycle paper, glass and/or plastic?
 - i. Is there any difference now versus before your course?
- d. Do you turn off lights/computers/etc. when you leave a room or if they are no longer in use?
 - i. How often?
 - ii. When do you change your practices?
 - iii. Is your behavior in line with your values?
 - iv. Is there any difference now versus before your course?
- e. Are you involved in any political environmental activities?

***If politically involved:**

- i. What type?
- ii. Letter writing? Calling your representatives? Electoral campaigns?
Legislative campaigns?
- iii. Are these activities paid or volunteer?
- iv. Do you feel comfortable with your level of political involvement?
 1. Would you like to do more/less?
 2. What prevents you from further involvement?
- v. When did you become involved at this level?
- vi. What led to your involvement?
- vii. Has there been any change since returning from your course?

***If not politically involved:**

- viii. Have you ever signed a petition, called or written your representative, been involved in a legislative or electoral campaign?
- ix. Would you like to be more involved?
- x. Does anything prevent you from further involvement?

20) Is there anything else you would like to tell me?

21) Do I have your permission to use your real name in conjunction with quotes and information from this interview? (For people who agreed to consider this question on the consent form only).

Appendix C: Questions, Interview 3, Summer of 2005 Subjects

- 1) Did it take long to feel back at home?
 - a. How long?
 - b. What smoothed that transition for you?
 - c. What made the transition harder?
- 2) Do you think much about your course?
 - a. How often?
 - b. What do you reflect upon most?
- 3) Do you feel differently now versus before your course?
 - a. In what ways?
 - b. What has stuck with you?
- 4) Is there anything you do differently now than you did before you left for your course?
 - a. What?
 - b. Why?
- 5) Do you feel like your perception of nature has changed?
 - a. How so?
 - b. What led you to those changes?
- 6) Has your self perception changed since your course?
 - a. In what ways?
 - b. If so, what induced those changes in your self perception?
- 7) Do you feel more empowered to act as an agent of change since your course?
 - a. How so?
 - b. If so, why?
 - c. Is there anything that you feel more motivated to do now?
- 8) Do you feel like your level of environmental activity since your course?

- a. How so?
 - b. What specific behaviors have you changed?
 - c. Have you made changes to your habits in daily life?
 - d. Have there been changes in your political activity?
- 9) What lessons do you remember most from your trip?
- a. Why those lessons?
 - b. How were those lessons taught/learned?
- 10) Do you apply any of the ideas of minimum impact to your life at home?
- a. In what ways?
 - b. Why/why not?
 - c. If so, what made you decide to live in that manner?
 - d. Has there been any change since your course?
- 11) Do you want to tell me anything else?
- 12) Do I have permission to use your real name in conjunction with quotes or information from this interview? (Asked only if the subject agreed to consider this question on their consent form.)

Appendix D: Questions, Sole Interview, Alumnae

- 1) Do I have the correct information and spelling for your name, age, and hometown?
- 2) What is your occupation?
- 3) What is your age and date of birth?
- 4) What is your ethnicity?
- 5) What is/are your parent/s occupations?
- 6) Describe the town you live in/grew up in.
 - a. About how many people live there?
 - b. Is it urban or rural?
 - c. Would you describe the town as more liberal or conservative? Progressive or traditional?
 - d. Is it a wealthy or a less well off community?
- 7) What experiences did you have outdoors before your NOLS course?
 - a. Where were you?
 - b. Who were you with?
 - c. For how long?
 - d. What do those experiences mean to you?
 - e. Do you feel that they shaped you in any way?
 - i. How so?
- 8) How do you define nature?
 - a. Do you include city parks? Your backyard? Your houseplants? Abandoned lots? Yourself? Human constructions like canals?
- 9) What is the first thing that comes to mind when you hear the word wilderness?
 - a. Is it different from your concept of nature?
 - i. How so?

- 10) Do you consider yourself to be environmentally active?
 - a. How so?
 - b. If you had to rate yourself on a scale of 0 to 5, with 5 as the most environmentally active and 0 as the least, where would you be?
 - i. Why?
 - c. Please describe the ways in which you are environmentally active.
 - i. Any political activities? Daily lifestyle choices?
 - d. Where did you learn these practices?
 - e. How long have you done them?
 - f. Why do you do them?
 - g. When do you deviate from those practices?
 - i. What leads you towards those deviations?
 - ii. How do you feel when you deviate?
 - h. Are there environmentally beneficial behaviors that you would like to partake in that you currently do not?
 - i. What is preventing you from current action?
 - ii. What might allow/motivate you to change your current behavior?
- 11) Is there an environmental issue that you feel particularly passionate about?
 - a. Can you tell me the story of how you became aware of that issue?
 - b. What (if anything) have you done to address that issue?
 - c. Do you do as much as you would like to do?
 - i. Is there anything else you wish you could do around that issue?
 1. What, if anything, is preventing you from those actions?
- 12) Questions about self perception and environmentally responsible behavior:
 - a. Do you feel like you have the power to change environmental issues through your actions?
 - i. How so/Why not?
 - ii. Did your NOLS course change your sense of empowerment in this area?

- b. Is it your responsibility to deal with environmental issues?
 - i. In what ways? Does this apply to your daily lifestyle choices?
Beyond? How so?
 - ii. Did your NOLS course change the way you feel in this area?
 - c. Do you feel like you have the knowledge about environmental issues you need to behave as an environmentally responsible citizen?
 - i. Did your NOLS course change the way you feel in this area?
 - d. Do you feel like you have the skills to take action regarding environmental issues, be it in your daily lifestyle choices or in other ways?
 - i. Did your NOLS course change the way you feel in this area?
- 13) Do you feel like you live a high or low impact lifestyle?
- a. How so?
 - b. Do you remember if you discussed the impact of your life outside of the wilderness on your course?
 - c. Did those conversations mean anything to you?
- 14) Did anything that took place on your course change the way you feel about the impact of your life at home?
- a. What was it?
 - b. What did it change?
 - c. Have you been able to implement that change?
- 15) Do you have friends and/or family members with what you consider to be environmentally positive behaviors?
- a. Do you also participate in those environmentally positive behaviors?
 - b. How do you feel about your family's/friend's behaviors?
- 16) Was there any change in your wilderness ethic that you attribute to your NOLS course?
- 17) Was there any change in your day to day environmental ethic that you attribute to your NOLS course?

- 18) Was there a change in your behavior either in the wilderness or in your daily life that you attribute to your NOLS course?
 - a. What specific behaviors have you changed?
 - b. Have you made changes to your habits in daily life?
 - c. Have there been changes in your political activity?
 - d. Do you attribute any of that change to your course?
 - i. In what ways?
- 19) Do you think that enjoying outdoor activity is connected to environmentally responsible behavior?
 - a. How so?
- 20) Do you think much about your course/s?
 - a. What do you reflect upon most?
- 21) Did your course change your perception of nature or the outdoors?
 - a. How so?
 - b. What led you to those changes?
- 22) Do you feel like you have a closer connection to nature now due to your course?
 - a. In what ways?
 - b. Why?
 - c. Does it spread into your life at home?
 - d. If so, what has happened to that connection over time?
- 23) What is the most important thing you learned on your course?
 - a. How did you learn it?
- 24) What do you think your instructors wanted you to take away from the experience?
- 25) Do you apply any of the ideas of minimum impact to your life at home?
 - a. In what ways?
 - b. Why/why not?
 - c. If so, what made you decide to live in that manner?
 - d. Has there been any change since your course?
- 26) Do you want to tell me anything else?

- 27) Do I have permission to use your real name in conjunction with quotes or information from this interview? (Asked only if the subject agreed to consider this question on their consent form.)

Bibliography

- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Chicago: The Dorsey Press.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Borden, R. J., & Schettino, A. P. (1979). Determinants of environmentally responsible behavior. *Journal of Environmental Education*, 10(4), 35-39.
- Bacon, S. (1983). *The conscious use of metaphor*. Denver, Colorado: Colorado Outward Bound School.
- Cason, D., & Gillis, H. L. L. (1993). A meta-analysis of outdoor adventure programming with adolescents. *Journal of Experiential Education*, 4, 25-27.
- Cronon, W. (1996). The trouble with wilderness; or, getting back to the wrong nature. In W. Cronon (Ed.), *Uncommon ground; rethinking the human place in nature* (pp. 69-90). New York: W. W. Norton & Company, Inc.
- Deloria, P. J. (1998). *Playing Indian*. New Haven, CT: Yale University Press.
- Dunlap, R. E., & Heffernan, R. B. (1975). Outdoor recreation and environmental concern: An empirical examination. *Rural Sociology*, 40(1), 18-30.
- Ewert, A. W. (1989). *Outdoor adventure pursuits: Foundations, models, and theories*. Columbus, OH: Publishing Horizons, Inc.
- Gass, M. (1990). Transfer of learning in adventure education. In J. C. a. S. P. Miles (Ed.), *Adventure education* (pp. 199-208). State College, PA: Venture Publishing.
- Gibson, H. W. (1973). The history of organized camping: The early days. In D. R. Hammerman & W. M. Hammerman (Eds.), *Outdoor education: A book of readings*. (pp. 64-70) Minneapolis, MN: Burgess Publishing Company.
- Haluza-DeLay, R. (2001). Nothing here to care about: Participant constructions of "nature" following a 12-day wilderness program. *The Journal of Environmental Education*, 32(4), 43-48.
- Hammerman, D. R., & Hammerman, W. M. (Eds.). (1973). *Outdoor education: A book of readings*. Minneapolis, MN: Burgess Publishing Company.

- Hammerman, W. M. (1980). Overview: Impact on American Education. In William M. Hammerman, (Ed.), *Fifty Years of Resident Outdoor Education: 1930-1980*. (pp. 6-11). Martinsville, IN: American Camping Association.
- Hammit, J. P., Freimund, W., Watson, A., Brod, R., & Monz, C. (1995). *Responsible environmental behavior: Metaphoric transference of minimum-impact ideology*: National Outdoor Leadership School (NOLS).
- Hanna, G. (1995). Wilderness-related environmental outcomes of adventure and ecology education programming. *Journal of Environmental Education*, 27(1), 21-33.
- Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, 67 (1), 43-87.
- Hines, J. M., Hungerford, H., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, 18(Winter '86-'87), 1-8.
- Hungerford, H. R., & Volk, T. L. (1990). Changing learner education through environmental education. *Journal of Environmental Education*, 21, 8-21.
- Jackson, E. (1986). Outdoor recreation participation and attitudes to the environment. *Leisure Studies*, 5, 1-23.
- Kahn, P. H. J. (2002). Children's affiliations with nature: Structure, development, and the problem of environmental generational amnesia. In P. H. J. a. S. R. K. Kahn (Ed.), *Children and nature* (pp. 93-116). Cambridge: Massachusetts Institute of Technology.
- Leeming, F. C., Dwyer, W. O., Porter, B. E., & Cobern, M. K. (1993). Outcome research in environmental education: A critical review. *Journal of Environmental Education*, 24(4), 8-21.
- Miles, J. C. (1990). Wilderness. In J. C. Miles & S. Priest (Eds.), *Adventure education* (pp. 325-328). State College, PA: Venture Publishing.
- Newhouse, N. (1991). Implications of attitude and behavior research for environmental conservation. *Journal of Environmental Education*, 22(1), 26-32.
- National Outdoor Leadership School (2006). *Mission and values*. Retrieved May 31, 2006, from <http://www.nols.edu/about/values.shtml>
- Parkin, D. (1998). Is outdoor education environmental education? *International Journal of Environmental Education and Information*, 17(3), 275-286.

- Perdue, R. R., & Warder, D. S. (1981). Environmental education and attitude change. *Journal of Environmental Education*, 12(3), 25-28.
- Priest, S. (1986). Redefining outdoor education. *Journal of Environmental Education*, 17(3), 13-15.
- Rillo, T. J. (1980). Contributions of Lloyd b. Sharp. In W. M. Hammerman (Ed.), *Fifty years of resident outdoor education: 1930-1980*. (pp. 21-27). Martinsville, IN: American Camping Association.
- Robbins, W. G. (1997). *Landscapes of promise: The Oregon story 1800-1940*. Seattle: University of Washington Press.
- Roth, R. (1980). Impact on Environmental Education. In W. M. Hammerman (Ed.), *Fifty years of resident outdoor education: 1930-1980*. (pp. 87-89). Martinsville, IN: American Camping Association.
- Shepard, C. L., & Speelman, L. R. (1985). Affecting environmental attitudes through outdoor education. *Journal of Environmental Education*, 17(Winter '85-'86), 20-23.
- Simpson, S. (1985). Short-term wilderness experiences and environmental ethics. *Journal of Experiential Education*, 8(3), 25-28.
- Smith, J. (1972). The development of outdoor education in the American educational system. In G. W. Donaldson & O. Goering (Eds.), *Outdoor education* (pp. 15-23). Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Tanner, T. (1980). Significant life experiences: A new research area in environmental education. *Journal of Environmental Education*, 11(4), 20-24.
- Tarrant, M. A., & Green, G. T. (1999). Outdoor recreation and the predictive validity of environmental attitudes. *Leisure Sciences*, 21, 17-30.
- UNESCO-UNEP. (1978). The Tbilisi Declaration: Final report intergovernmental conference on environmental education. *Organized by UNESCO in cooperation with UNEP, Tbilisi, USSR, 14-26 October 1977, Paris, France: UNESCO ED/MD/49.*
- Van Liere, K. D., & Noe, F. P. (1981). Outdoor recreation and environmental attitudes: Further examination of the Dunlap-Heffernan thesis. *Rural Sociology*, 46(3), 505-513.
- Zelezny, L. C. (1999). Educational interventions that improve environmental behaviors: A meta-analysis. *The Journal of Environmental Education*, 31(1), 5-14.