

2006

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Lindley, Betsy R. (2006) "The Influence of a Wilderness Experience Program on Students' Attitudes toward Wilderness," *Research in Outdoor Education*: Vol. 8, Article 13.

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THE INFLUENCE OF A WILDERNESS EXPERIENCE PROGRAM ON STUDENTS' ATTITUDES TOWARD WILDERNESS

Betsy R. Lindley, Utah Valley State College

Background

As federal land managers are facing decreasing budgets and increasing visitation, the need for wilderness education continues to increase. Land managers use their funds and staffs in the most efficient ways, which often means there are fewer rangers in the backcountry to enforce regulation or participate in direct education. Other entities, such as Wilderness Education Programs (WEPs), are logical alternatives for visitor education. WEPs are businesses that take paying customers into wildlands to develop their human potential through personal growth, therapy, leadership, and/or organizational development (Friese, Hendee, & Kinzinger, 1998).

There are many organizations that utilize federal wildlands as programming areas (Friese et al., 1998), and in doing so they provide many visitors' first or formative wilderness experiences. Managers, scholars, and users of wilderness recognize the importance of wilderness education as a management tool (Gunderson, Barns, Hendricks, & McAvoy, 2000; Passineau, 1990; Roggenbuck & Manfredro, 1990). Ewert and McAvoy (2000) state "participation in activities based in wilderness and wilderness-like settings can have profound effects on both groups and individuals" (p. 13). Hanna (1995) suggests that WEPs not only teach minimum impact and outdoor living skills, but also engage their students in classes and discussions related to history and philosophy of wilderness and local environmental issues. She found WEPs that emphasized those subjects could influence students' knowledge of the natural environment and how strongly they felt about its preservation.

Many students return to wildlands after their WEP and will apply what they have learned during the program. This makes it essential that WEPs teach students how to live and travel in the wilderness with minimum impact upon the land. Roggenbuck and Manfredro (1990) state, "Managers believe that education does reduce impacts and conflicts in wilderness, but few formal evaluations of its effectiveness have been completed. Wilderness education has not been used to its fullest potential" (p. 103). Gunderson et al. (2000) suggest that the overall goal of wilderness education should be to influence "knowledge, attitudes, beliefs, and behaviors" that will ensure the preservation of wildlands for current and future generations (p. 258).

Paul Petzoldt, the founder of the National Outdoor Leadership School (NOLS), recognized that WEP organizations have a responsibility to educate their students to be good stewards of wilderness. The mission of NOLS is to be the leading source and teacher of wilderness skills and leadership that serve people and the environment (NOLS, 2005). One of the four areas of the NOLS core curriculum is environmental studies. Gookin (2002) states the following in regard to the environmental studies area of the NOLS curriculum, "A NOLS student is expected to go home with the basic knowledge, leadership skills, conservation ethic, and can-do attitude to be a more responsible steward and citizen" (p. 4). The NOLS organization is a model for many WEPs. This emphasis on wilderness education and its transference to students' lives after the

LINDLEY

course makes NOLS a good choice for the examination of how participation in a WEP influences the attitudes towards wilderness of its students.

The purpose of the study was to examine how a WEP influenced students' attitudes towards wilderness and to understand what part of the experience students perceived led to changes in their attitudes toward wilderness protection and preservation. Developing a better understanding of how education influences environmental beliefs, attitudes, and behaviors is important in the wilderness education and resource management fields as they seek the best methods to preserve wildland resources.

Literature Review

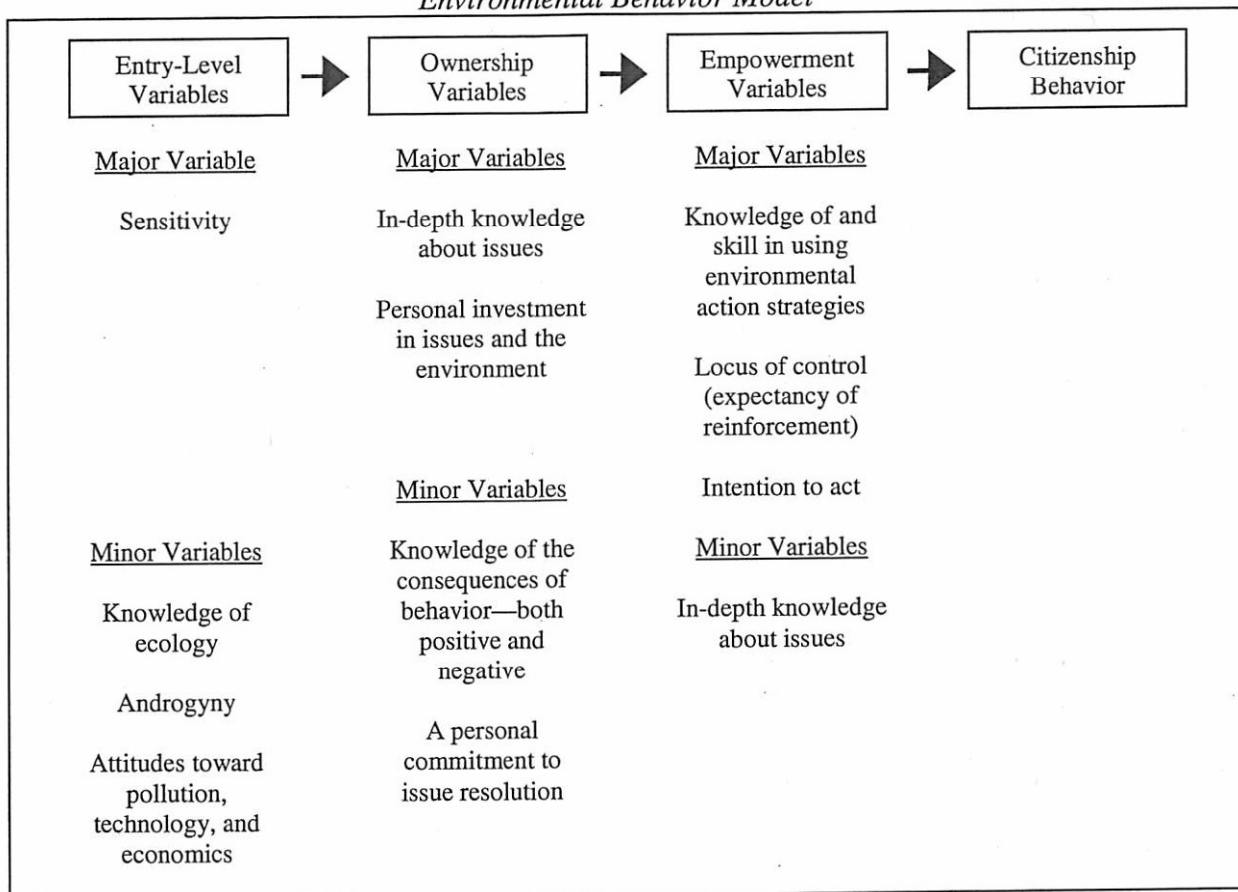
This study used an environmental education framework and applied the principles of environmental education to the specific area of wilderness education. Zelezny (2001) completed a meta analysis of eighteen environmental education interventions and found that those "educational interventions that actively involved participants were more effective in improving environmental behavior than those that did not" (p. 239). Many authors have indicated that education about wilderness and issues that affect wilderness is important (Gunderson, 2001; Gunderson et al., 2000; Roggenbuck & Manfreda, 1990). More important is teaching students how to take action on what they know, and providing experiences in which they understand how to be actively involved in wilderness issues. WEPs that are planned to create knowledgeable wilderness advocates through active experience with, in, and on behalf of wilderness will be the most effective in protecting and preserving wilderness (Gunderson et al., 2000; Hansen, 1990).

The theoretical framework that guided this study was Hungerford and Volk's (1990) Environmental Behavior Model (Figure 1). This model is a result of years of research in environmental education. For the purpose of this research the strategies of environmental education were focused on wilderness education. In this case, citizenship behavior was defined as citizenship behavior towards wilderness. Hungerford and Volk state that entry-level variables seem to be prerequisites or at least variables that will help to enhance a person's decision making once they decide to take action on a particular issue. Ownership variables are those that create a bond between a person and an environmental issue and seem to be very important to responsible environmental behavior. A person who "owns" the issue in some way will be far more likely to act. Finally, empowerment variables give people a sense that they can have a positive effect on the environment. Teaching people how to be effective agents of change is a very important part of creating citizens who exhibit responsible environmental behavior, and according to Hungerford and Volk a component that is often left out of many environmental education programs.

Research seems to indicate that for WEPs to be effective in influencing students' attitudes towards wilderness the programs must have a plan to teach more than just basic facts about the environment or wilderness. Environmental curriculum should be based on research into effective environmental education. Curriculum should be designed to include those topics which are included in Hungerford and Volk's Model under entry level, ownership, and empowerment variables. WEPs should teach students about specific issues facing wilderness, such as finding a balance between preservation and access issues, and tie this in with the specific location in which they are traveling, such as how access issues affect how the groups travel in certain areas. These

topics would fall under Hungerford and Volk's Ownership Variables that include in-depth knowledge of issues and personal investment in issues and the environment. In addition, those instructors who want to truly prepare their students to be wilderness advocates must discuss with their students strategies and skills that they can implement once they return home and where to get more information on being proactive for wilderness.

FIGURE 1
Hungerford and Volk (1990)
Environmental Behavior Model



Wilderness Education

The aim of wilderness educational programs is to affect a person's beliefs, attitudes, and values about wilderness, so when given a choice to act a person will behave in a way that is consistent with what has been taught (Gunderson et al., 2000; Gunderson & McAvoy, 2003). Bachert (1990) states that "wilderness education is education in the wilderness, implying a place; education about the wilderness, implying a topic; and education for wilderness, implying a reason" (p. 166). Thus a wilderness educational program will try to influence the way people view the place, the topic and the reason for wilderness education.

LINDLEY

There are a number of studies that have focused on wilderness education programs and wilderness impact. McAvoy and Hamborg (1984) studied the influence of different methods of contact on visitor knowledge. It has also been shown that visitors receiving an educational program score higher on minimum impact knowledge tests than those who do not receive the program (Anderson, 1981). A study done in the Boundary Waters Canoe Area Wilderness showed a significant increase in environmental knowledge, attitudes, and behavioral intentions in wilderness visitors who participated in a visitors educational program (Jones & McAvoy, 1987; Schomaker, 1990). Interviews and observations have shown that self-reported behavior in wilderness is generally consistent with actual behavior (Jones & McAvoy, 1987; Robertson, 1986). Wilderness Education falls along a continuum ranging from brochures that may be mailed out and signs at the trailhead to videos seen before receiving a permit to contact with rangers to the intensive long wilderness trip with an emphasis on Leave No Trace (LNT), which is an organization that promotes wilderness ethics and responsible outdoor recreation. WEPs fall at the far end of this continuum and reach a small proportion of those who visit wilderness.

If wilderness education is going to be a major component of wilderness management and preservation, as many land managers and researchers believe (Gunderson et al., 2000), then research must show what types of wilderness education are most effective in this mission. Hanna (1995) completed a study comparing the wilderness related environmental outcomes of two Outward Bound adventure education experiences and two Audubon Society ecology education experiences. Both groups showed significant gain in the area of wilderness issue attitudes. Hanna suggests that this shows both programs helped to create more ecocentric wilderness attitudes in their students. The Outward Bound group did show the greatest gains and Hanna suggests one reason for this could be the importance that the Outward Bound instructors placed on discussing and understanding wilderness issues. In her conclusions related to wilderness education programs Hanna suggests that "physical and affective adventure education programs can have substantial impacts on participants. [She] attributes the outcome, in part, to the great interest the patrol leader showed in issues affecting the area the group explored" (p. 30). She also suggests that a better grounding in basic ecology of the region would strengthen the ecocentric gains and give students a better base of understanding related to acting on behalf of wilderness.

Some interesting conclusions can be drawn from the Hanna (1995) study. The first relates to organizational goals. Audubon's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. While Outward Bound's mission is to enhance individual character, promote self-discovery and challenge students to cultivate self-reliance, leadership, fitness, compassion, and service through exceptional wilderness education ("About Outward Bound"). Does an organization's mission and implementation of that mission affect the students' experiences? Most organizations would hope so. In this light it is not surprising that the Audubon students may be more aware and willing to act on behalf of wilderness than their Outward Bound counterparts. Another major influence on students is their instructors. Instructors play a major role in the experience of WEP students, and instructor attitudes and priorities can have a large impact on their students' experiences. Hanna (1995) proposes that one possible reason why the Outward Bound students showed an increase in ecocentric attitudes was the passion and priority the instructor gave to this topic. This is a difficult premise to measure, however the influence of a

program's mission, and instructor priorities within that mission, could be a major influence on the effectiveness of the wilderness education portion of a program.

Haluza-Delay (2001) states that "an often assumed benefit of WEPs is that, by experiencing an environment in which the natural world dominates, trip participants will begin to care about the natural world" (p. 43). In post trip interviews, with a group of high school students who participated in a twelve-day wilderness program, he found that, for those students, nature was something that was "out there," apart from their everyday lives. Even though several of the students thought the experience was one of the best they had had that year, they saw very little connection between the wilderness in which they spent twelve days and the natural world around them in their everyday lives. One student said, "it's already impacted, [so whatever you do] doesn't make much of a difference . . . there's nothing really you can do" (p. 45). These teens felt that nature is only out there in the wilderness, and since the environment they live in is already heavily developed and changed by humans, it is useless to be concerned with environmental issues. This is not good news for those wilderness educators who believe that by running WEPs they are educating students who will go back to their lives and live in an ecocentric manner. Haluza-Delay concludes that WEPs need to emphasize the connection between the wilderness and what actions students can take when they return home to live in a way that protects wilderness and the environment.

Hammitt, Friemund, Watson, Brod, and Monz (1995) conducted a study of changes in responsible environmental behavior with students at the National Outdoor Leadership School. The 288 students surveyed participated in a 28 day wilderness backpacking course in the Wind River Mountains in Wyoming. Minimum impact principles are emphasized in relation to camping and travel skills, and students were engaged in discussions on how minimum impact principles could be applied to their lives at home. The students completed surveys in a combination of before, after, and six months after their course, regarding their behaviors on items that represented responsible environmental behavior. Hammitt et al. found that although the students reported relatively high pro-environmental behaviors before their course, they still showed a significant increase in their environmental behaviors after their course. However, there was not a matching increase in students' behavioral intentions. The researchers attribute this to idealistic views of the students both before and after their course. Hammitt et al. believe the results of this research show that when a WEP emphasizes transference of minimum impact ideology on the course to the lives of their students after the course, students can show an increase in responsible environmental behavior after they return home.

Wilderness Attitudes

Manning and Valliere (1996) conducted a study to explore the wilderness values and environmental ethics of Wilderness users. They examined ethics and values in terms of how they affect wilderness management. Their findings pertinent to this research are that wilderness values and environmental ethics can be determined and measured. Manning and Valliere also found that visitors value wilderness for many different reasons, rating as important both individual values, such as recreation, and social values, such as ecological protection. An implication for land managers, as a result of their study, is that ecological impacts on the land should be minimized because that is a major value for wilderness users. Wilderness education can assist in this goal.

LINDLEY

Attitude strength is a concept that is relevant to the discussion of wilderness attitudes. Krosnick and Petty (1995) suggest that attitudes can be stable and important or they can be flexible and of little consequence. Attitude strength is defined as “the extent to which attitudes manifest the qualities of durability and impactfulness” (p. 3). When attitude change is addressed, it is those attitude changes that are accompanied by a high level of cognitive processing of issue relevant information that lead to a stronger and lasting change. Issue relevant thinking is the key component to attitude change, and some ways to increase relevant thinking can take the form of time to think about the message, increased message repetition, and leading people to believe that they will have to justify and explain their attitudes to others (Petty & Wegener, 1998).

The ability of attitudes to predict behavior is of interest in this study. Factors that increase the ability of attitudes to predict behavior include: attitudes formed under high personal relevance, high amounts of issue relevant knowledge, and attitudes formed from direct personal experience (Petty & Wegener, 1998). This information seems to suggest that WEPs could influence attitude change in students. Wilderness may have high personal relevance, instructors can create an environment where there is lots of issue relevant knowledge, and the nature of a WEP results in direct personal experience with wilderness.

This study is an important next step that will lead to a better understanding of how WEPs influence students' attitudes toward wilderness and what parts of their experience they perceive led to those changes. This information will allow WEPs who are interested in programming that influences student attitudes toward wilderness to better craft student experiences to achieve desired outcomes.

Methods

Setting and Participants

This study focused on students enrolled in courses at the The National Outdoor Leadership School (NOLS). NOLS was founded in 1965 by Paul Petzoldt (“National Outdoor Leadership School History”, 2003). Petzoldt was an accomplished mountaineer and had been working for the Colorado Outward Bound School. He saw a need for trained wilderness leaders who would be able to travel safely in a wilderness environment and who would care for and protect the wilderness. Petzoldt’s vision was that by training people how to spend time in the wilderness in ways that would protect the wilderness, NOLS graduates would teach others the wilderness skills and ethics that they had learned during their NOLS experience. The NOLS mission still reflects this vision. The NOLS core curriculum consists of safety and judgment, leadership and teamwork, outdoor skills, and environmental studies. The emphasis on environmental studies is something that sets NOLS apart from other WEPs and makes NOLS a good program to examine in this study. NOLS emphasizes not only Leave No Trace ethics but also learning about the environment that the students travel through and how to transfer what they have learned to their lives after NOLS. The classic NOLS course for which the curriculum is created is a 28 day backpacking trip. The courses chosen to include in this study are all based on the 28 day backpacking course. The few courses NOLS runs that are less than 28 days receive an abbreviated curriculum; this makes the 28 day courses chosen the best to examine how an extended WEP influences students’ attitudes toward wilderness.

LINDLEY

The participants in this study were 86 students enrolled in 11 twenty-eight day wilderness courses run out of the NOLS Rocky Mountain Branch in Lander, Wyoming. The 86 students were all invited to participate in this study. The response rate for this survey was 53% with 44 out of 83 students returning the survey. Student participant ages ranged from 16-27 with the vast majority of students in the 17-20 year old range. The respondents were 56% female and 44% male. Students came from all over the United States to participate in these NOLS courses.

Data Collection

Participants involved in the study completed their NOLS courses in the Summer of 2004. In November 2004 participating students were mailed the questionnaire asking about how their course had impacted their attitudes toward wilderness. The questionnaire was designed to collect information related to how students' views of wilderness were influenced by their course and the course components that most influenced those views. The mailings were sent out in the manner described by Dillman (2000) using the Tailored Design Method. A questionnaire was sent to each student along with a personalized cover letter and a NOLS sticker. One week following the initial mailing a postcard reminder was sent to all participants. A month after the initial mailing a new, complete copy of the questionnaire was sent to participants who had not returned their materials. A week after the second complete mailing an email was sent to those participants who still had not returned their materials.

The questionnaire was designed to help better understand how a WEP can influence student attitudes toward wilderness and to distinguish what aspects of a WEP experience may lead to those changes. The questionnaire was evaluated by a panel of researchers in wilderness education and by the staff at NOLS. These experts made suggestions for improvement of the instrument both to content and presentation. Suggested improvements by both groups were incorporated into the questionnaire.

Data Analysis

The responses to the open ended questions were content analyzed. The content analysis searched the text for recurring words, themes, and patterns (Patton, 2002). Patterns are descriptive findings, and themes are usually more categorical or topical. The first step of analysis was to create a coding scheme or system of classification. This was done by reading through the answers to the open ended questions and labeling them into topics. This process was continued until no new topics were found. Patton's four criteria to test for completeness of the categories were used with the data. These included: a) the set should have internal and external plausibility; the categories should appear to be consistent and complete; b) the set should be inclusive of the information that exists; c) the set should have inter-coder reliability; d) the set should be credible to those who provided the information analyzed.

The data was analyzed by reading and rereading the data to search for themes and categories of responses. Codes were then created that reflected these themes and categories. The data was then examined again and coded. This study used inter-coder reliability and inclusive themes to test for completeness of categories. The second coder was provided all of the qualitative data and chose 20% of each question randomly to code. The second coder was provided the codes that the researcher used to code the data and either used the existing codes, or if he did not find the existing codes adequate, proposed a new code or codes. Inter-coder reliability was 95%.

LINDLEY

Results

The results of this study assist in the understanding of how a WEP can influence students' views of wilderness. Students answered the questionnaire approximately four months after their experience and those who responded indicated that the experience did influence their views of wilderness in considerable ways and that a wide variety of course components lead to those changes.

Students were asked, "How has your view of wilderness changed as a result of your NOLS course?" One hundred percent of the respondents indicated that their view of wilderness had changed in a positive way as a result of their NOLS course. A summary of how student views changed can be found in Table 1. Thirty nine percent of students mentioned a closer connection to wilderness or a greater appreciation of wilderness. Students made comments like, "I feel better connected with the wilderness in many different aspects, my personal connection is from a deeply rooted sense of wonder and respect." And, "I have better appreciation for the wilderness we have preserved and the need to keep it that way. The untamed wilderness has lots to offer humans and other living things. I have a strong desire to go back to the real backcountry soon." These statements are representative of what students wrote about their connection to and appreciation of wilderness as a result of their NOLS experience.

TABLE 1
*Categories of How Student Views of Wilderness Changed
as a Result of NOLS experience (N=44)*

| Student Views | Percentage |
|--|------------|
| Created closer connection to and appreciation for wilderness | 39 |
| More interested in protecting and preserving wilderness | 25 |
| Become more aware of the accessibility of wilderness | 18 |
| Deepened and enhanced existing views of wilderness | 16 |
| Understand how human actions impact wilderness | 16 |

Note: Students could indicate more than one way their view of wilderness changed

Wilderness protection and preservation was a theme shared by 25% of students. These students wrote about how their time in the wilderness influenced their thoughts about wilderness protection. One student stated, "My NOLS course is the first and only time I have spent an extended period of time living in a wilderness area. That experience helped me have a greater appreciation for the need to protect natural areas and manage natural resources from a conservationist perspective." From another student came, "I have realized how important it is to me for there to be places that have not been influenced or touched by civilization. I now view the wilderness as something that needs to be preserved so that future generations can learn and benefit from it the way that I have been able to."

Students who had spent time in the wilderness before their course wrote how the course had deepened and expanded their feelings toward wilderness. The following statements are from the responses in this category:

I don't think my view of wilderness has changed as a result of my NOLS course because I had taken similar courses at my high school before I participated in NOLS that were led

LINDLEY

by NOLS graduates and NOLS instructors. So my NOLS course only enhanced a pre-existent love for the wilderness.

Some students referred to the fact that they understood that wilderness is more accessible to them after their course than it was before their time in the wilderness. One student stated, "I realize wilderness is close enough for anyone to enjoy." Finally, other students spoke of the impacts upon wilderness, both when traveling in the wilderness and by actions in their everyday lives. A student wrote, "It is truly a different world, therefore every little thing we do has an impact. The outdoors does nothing to disturb our lives and it gives us an opportunity to enjoy all it has to offer. We have no right to disturb wilderness." Another student said, "I understand my impact on the environment much more than before."

Examining attitudes is beneficial to see what students think about wilderness and how this changes as a result of a month long course. To gain a fuller understanding of what happens during that month students were asked, "What part of your NOLS course most influenced you attitudes and ethics toward wilderness?" These students had significant experiences on their courses, and, according to their own statements, most left their courses with a different set of attitudes and ethics regarding wilderness. The components of the WEP that students reported as most influencing their attitudes toward wilderness are summarized in Table 2.

TABLE 2
*NOLS Course Components that Most Influenced
Students' Attitudes Toward Wilderness (N=44)*

| Course Components | Percentage |
|--|------------|
| Leave No Trace principles and practices and seeing human impacts on wilderness | 32 |
| Experience and Immersion in the wilderness for an extended period | 32 |
| Interaction with other people, both students and instructors | 13 |
| Everything about the course | 10 |
| Environmental classes | 10 |
| Beauty of the wilderness | 7 |
| Simplicity of living in the wilderness | 5 |

Note: Students could indicate more than one course component.

Impact on the wilderness, both positive through LNT principles and negative by seeing the impacts of careless travelers, was cited by 32% of students. Statements such as, "I understand my impact on the environment much more than before," and, "Seeing trash on the ground in areas where you think people have never been before. It showed me everything that you do (leaving trash in a wooded area) has an impact on someone across the country." Their personal experiences and immersion in the wilderness for an extended period of time was what a number of students attributed to influencing them. "Just being there. I always thought it should be preserved but you don't fully understand until you've seen it . . . until you climb to the top of a mountain and see truly wild animals and 'naturalness' as far as you can see, beautiful settings and bathed in ice cold rivers, until you've lived in it and with it." Another student wrote, "My personal experience was the biggest influence. Each day I could spend time just taking in everything around me—sight, smell, taste, sounds. Life is so unfiltered in the wild and connecting with that was huge." Other students did not pick out anything specific but said

LINDLEY

everything about the course influenced them. One student wrote, "The entire experience; but it wasn't until I took a retrospective look at my experience that I began to appreciate how important the wilderness is."

Another influence on student attitudes and ethics, according to some students, included other people, both students and instructors. Classes that were taught during the course that covered topics including environmental issues and wilderness legislation were noted by other students. The beauty of the wilderness was the greatest influence according to others. A student stated, "What sticks out in my mind is just being struck by how natural (pure? wild?) everything was and not wanting to ruin that balance, just like how you hate to come along and smear your favorite painting." Finally, some students mentioned the power of simplicity. One said, "The simplicity of life out in the backcountry is inspiring. So much can be done with so little and that really opens my eyes a little but more after each wilderness experience. Our society is so focused on material things when the important issues are right below their feet. I want others to realize that."

These responses give evidence of students' changes in attitudes toward wilderness as a result of their WEP. The students' own words seem to indicate that their courses did affect their attitudes toward wilderness.

I am far more concerned about wilderness issues than I ever used to be... I pay attention to political decisions being made that have an effect on the environment. If I see someone polluting unnecessarily, I bring it to their attention and try to persuade them to stop. I also spend more time enjoying the woods that I ever used to.

It is truly a different world, therefore every little thing we do has an impact. The outdoors does nothing to disturb our lives and it gives us an opportunity to enjoy all it has to offer. We have no right to disturb wilderness.

I want to see stronger protections placed on existing wilderness lands and have more land be protected from development so that others can experience the wilderness and reap the ecological benefits that only vast tracts of unspoiled land can provide.

These quotes from students serve to confirm that participation in this program did influence students' attitudes about wilderness.

Discussion and Implications

The participants in this study indicated by their responses to the questionnaire that the NOLS experience did positively influence their attitudes toward wilderness in several different ways. However, NOLS students come to their courses with positive attitudes toward the environment (Hammitt et al., 1995). The students who self select to participate in a NOLS course are much more likely to inherently value wilderness and its importance than the general population. This high level of positive wilderness attitudes before the course may impact how much change can be directly attributed to the NOLS experience. One student states, "Maybe not changed, but deepened. I loved the wilderness before. Now I'm more deeply in love and appreciative of it."

LINDLEY

Hungerford and Volk's (1990) Environmental Behavior Model (Figure 1) suggests that to create citizenship behavior people must move through Entry-Level, Ownership and Empowerment variables. The major Entry-Level variable is sensitivity. Previous research (Hammit et al., 1995) suggests that NOLS students come to their courses with a relatively high level of sensitivity to environmental issues around them. Ownership Variables include an in depth knowledge of issues and personal investment in those issues. Statements from students in this study seem to indicate that their experience did teach them more about issues facing wilderness and that they feel that they have a significant personal investment in the wilderness as a result of their experience. Finally, Empowerment Variables, including knowledge of and skill in using environmental action strategies, locus of control and intention to act. These variables are those that show some students felt empowered to act. One student said, "I am very aware of wilderness issues. I vote and argue on political issues on the side of wilderness." While other students suggested that they would like more concrete ideas and actions that they could use when they returned home. The Environmental Behavior Model provides a framework for understanding how individuals move towards citizenship behavior toward the environment. The information presented appears to follow the flow set out in the model.

Programmatic implications for wilderness education programs include being intentional about teaching about wilderness preservation and the environment. Several students appreciated the locally based classes on wilderness and the environment, but they wanted more about environmental issues on a larger stage. One student wrote,

I felt like learning about the history of wilderness protection and discussing local issues was good, but a more in depth look at broader environmental issues would have been beneficial. Particularly, discussing human actions that have an indirect effect on the environment would better prepare students to make conservation-minded lifestyle decisions at home.

This student was not alone in wanting to know what to do after returning home. This was a theme echoed by several students. Classes on what to do back home can be challenging to work into a curriculum that is very place oriented. Wilderness instructors naturally teach in the now and the what next. Teaching a class on local issues fits right into the curriculum and mindset of most wilderness instructors. Teaching a class or leading a discussion about actions and how to make a difference for wilderness and the environment after returning home requires both prior preparation and prioritizing that type of class based on long term objectives, not just on what needs to be done today.

Instructors are the message and medium in WEPs; often two instructors and a group of participants head into the field, and they may have no contact with anyone outside of their group for several weeks. Students recognized the importance of instructors:

The way we conducted ourselves in the wild had the most impact. Making sure that we always packed everything out and left no trace were very important, but having our instructors explain why really hit all the guidelines home for me.

LINDLEY

This student got past the what to do and, with the instructors' guidance, now understands the why of doing it.

Effective wilderness education as a component of a WEP should begin early in the course and continue for the duration of the course. It should include not only facts about wilderness and the environment, but discussions about human impact on the land and what actions students can engage in their everyday lives that can have a positive impact on and for wilderness and the environment. If a goal of WEPs is to influence students to be involved in the protection and preservation of wilderness, instructors need to emphasize this throughout each and every course and recognize that the environmental curriculum is equally important as all other aspects of the course. The knowledge students' gain from the environmental studies segment of the curriculum could be the longest lasting and have the most long term impact of any element on the course. Students learn many skills, which may include navigation, backpacking, climbing, boating, and others, which they may or may not use after their course. However, if students leave their courses with a connection and appreciation of the land and what it takes to protect and preserve it, this could be a lifelong change that may allow them to be involved with wilderness and environmental issues for an extended period of time. NOLS' mission and emphasis on environmental studies may have influenced student responses to the questions on the basis of social desirability. Every NOLS student has had LNT information presented many times over the length of the course and other classes about the environment and wilderness. A factor that may mitigate this idea of social desirability is that of the time passed since the end of the course and the students had been back at home and away from their course mates for 4 months.

There is some validation for a WEP to influence attitude change and for those attitudes to affect behavior. Three areas that indicate that attitudes may predict behavior include: attitudes formed under high personal relevance, high amounts of issue relevant knowledge, and attitudes formed from direct personal experience (Petty & Wegener, 1998). Students, when asked what part of their course influenced a change in attitudes toward wilderness, indicated that LNT principles and practices were influential. This would fall into the category of issue relevant knowledge. Experience and immersion in the wilderness was also a category that students indicated most influenced their attitudes; this could indicate the wilderness had high personal relevance for the students. All of the student responses would fall into the category of direct personal experience. This may be the most powerful part of WEPs. Without direct personal experience with the wilderness the WEP would not be a WEP. This personal experience coupled with instructors who create a learning environment that allows students to find personal relevance in the wilderness and build a base of knowledge about the wilderness and how to protect and preserve it are in line with the literature reviews on attitude changes. The qualitative data in the current study may lead to the conclusion that NOLS, as an example of a WEP, can and does influence students' attitudes toward wilderness. The NOLS curriculum focuses in the environment and wilderness in a specific curricular manner; other WEPs, which also focus on teaching students about their environment and how they can protect and preserve it may have similar results. However, many WEPs are focused on other curriculum areas and may not influence students' views of the world around them.

There are a number of future research avenues suggested by the results of this study. The nature of studying WEPs (small group sizes) requires that multiple courses be a part of a study to gain

LINDLEY

any number of participants. Instructors are an integral part the WEP experience (Kalisch, 1979; McKenzie, 2003), and the differences in how they run their courses are very hard to control. A project that follows a group of instructors as they instruct multiple courses of the same course type would help control for differences in instructors and would allow for study of course components without having to take into account different instructor teams. However, each WEP course is unique, and the same instructors may have different impacts on different student groups. So even courses with the same instructors and same course types will never be exactly the same and may bear little resemblance to each other.

Many students, when asked about what element or elements of the course most influenced their attitudes toward wilderness, mentioned the entire experience. A research project created to delve into this phenomenon of experience could help to pinpoint the specific elements that influence student attitudes and then could inform practice as to what practical steps instructors can implement on their courses to encourage students in their attitudes toward protection and preservation of wilderness.

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LINDLEY

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