

The Role of Field Study in Humanistic and Interdisciplinary Environmental Education

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This paper argues that field courses can improve college students' interest and engagement not only in the environmental sciences, but also in the environmental humanities—including environmental history, philosophy, and literature. We base this argument on five years of experience teaching an environmental studies field course through the Wildlands Studies Program in the Sierra Nevada of California, USA. In the paper we draw from field notes, discussions with students, correspondence with other instructors, and a survey sent to all of our former students. We conclude that three factors—the field immersion experience, the small group dynamic, and the curriculum design—all contributed to an increase in our students' interest and engagement in the environmental humanities.

Keywords: Environmental Education, Field Study, Humanities, Philosophy, Literature

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Environmental educators have long recognized that venturing out of the classroom and into the field promotes engaged learning in college-level courses in environmental science disciplines such as geology, ecology, and meteorology (Elkins & Elkins, 2007; Fuller et al., 2006). The reason for this is simple: in order to learn about the environment one must go outside and study it first-hand (Dillon et al., 2006). It may not seem quite so obvious how an outdoor field experience could improve environmental studies courses in humanistic disciplines—such as history, philosophy, and literature—that do not rely on direct observations of nature as their source of information. Yet instructors who teach courses in the environmental humanities have found that an outdoor field experience can boost student interest and engagement (Gordon, 1999; 2003). Why does a field study experience seem to have this effect on this population of college students? And how can instructors build on this effect to promote innovative, interdisciplinary environmental education?

This paper describes the results of a research project that investigated these questions in the context of an environmental studies field course offered through the Wildlands Studies Program at the University of California, Santa Barbara.¹ The course, entitled *Wilderness and Society: The California High Sierra Project*, took place during five summer sessions, between 2002 and 2007, in the Sierra Nevada of eastern California. The authors of this essay developed and taught the course together. In this study we draw from four sources of information: field notes, informal discussions with students during the course, a survey administered to students after the course, and correspondence with other Wildlands Studies instructors regarding their pedagogical experiences.

This project began with an observation. In their pre-course application essays, most of our students expressed a desire to learn about the natural sciences and acquire technical environmental science research skills. For several of our students, these were their primary objectives. Yet, by the end of the course, many of these same students identified discussions of environmental history, philosophy, and literature as their favorite aspects of the curriculum. These students did not lose interest in the natural sciences, but their interest and engagement in the humanities did increase dramatically—more than for any other area of study. This was the case even though we sought to maintain an interdisciplinary tone in our teaching, and although the course syllabus placed equal emphasis on topics from the natural sciences, social sciences, and humanities (see Table 1).

Table 1
Reading and Discussion Topics in the Course Syllabus

Module 1: High Sierra Natural History	Module 2: Wilderness History & Geography	Module 3: Current Conservation Problems
Geology	Geography of Public Lands	People & Population
Climate	The Idea of Wilderness	Fire Management
Mountain Weather	Wilderness Mythology	Water Conservation
Biotic Zonation	Wilderness History & Politics	Wildlife Management
Alpine Ecology	Wilderness Legislation	Climate Change
	Wilderness Criticized	Final Project Presentations
	The Future of Wilderness	

In this paper we argue that our students' newfound appreciation for the environmental humanities resulted from three key factors. First, the field immersion experience fostered a sense of simplicity and opportunities for self-reflection. Second, the experience of working in a small group, with its interpersonal dynamics and empathetic learning benefits, encouraged students to participate in open debates and discussions that are essential for humanistic education. Third, the experience of being exposed to an interdisciplinary, place-based curriculum encouraged students to move beyond compartmentalized learning (Christensen & Crimmel, 2008). They began to engage in the sort of holistic thinking that is necessary for humanistic scholarship and that is required to understand complex environmental problems.

Throughout this paper we use the term *environmental humanities* to refer to nonscientific areas of environmental scholarship such as environmental history, philosophy, literature, ethics, art practice, and cultural geography. We use the word *interdisciplinary* to connote a curriculum design or pedagogical approach that incorporates insights from the natural sciences, social sciences, and humanities. Finally, when we refer to "the field" as an educational setting, we include any possible location in which to conduct organized, curriculum-based learning outside of the traditional classroom context. Although this paper focuses on a wilderness field course, the field setting could also encompass urban landscapes or other built environments.

Review of Literature

Numerous authors have argued that the humanities should play a more central role in interdisciplinary environmental education. Soetaert (1996) and Stables (1996) claim that art and literary theory can foster improved environmental education and encourage environmental literacy more generally. Ashley (2000) argues that environmental education should include ethics because real-life decisions always involve moral agency and social trade-offs. Colwell (1997) and Foster (1999) have described how humanistic education helps students transcend dichotomous thinking about nature and culture, while St. Maurice (1996) advocates for an approach to environmental education that incorporates cultural studies of ideas about nature. Slattery (2001) and Stewart (2008) emphasize the importance of environmental history in outdoor education. And Tomsen and Disinger (1998) have offered a methodology for evaluating the capacity of such courses to actually change students' worldviews. In this paper, we argue that field courses offer opportunities to increase student interest and engagement in the environmental humanities, and to further integrate the humanities into interdisciplinary environmental education. But before we describe our methods and results, we must first explain how the High Sierra Project fits into the scope of environmental studies field courses taken by college students in the United States.

Environmental Field Courses and the High Sierra Project

College-level environmental field courses generally fall into three main categories. First, outdoor adventure programs, such as Outward Bound and the National Outdoor Leadership School (NOLS), act as independent entities outside of traditional college and university academic structures (Ferreira, 1998; Friese, Hendee, & Kinziger, 1998; Gordon, 1999; Hanna, 1995; Miles, 1986/1987; Tanner, 2001). Outdoor adventure programs usually focus on wilderness survival and recreation skills, but many also incorporate humanistic teaching into some aspect of their course curricula (Grumbine, 1988; Miles, 1986/1987). Such courses, however, do not typically articulate specific academic goals regarding student interest and engagement in the environmental humanities (Crompton & Sellar, 1981; Gillett, Thomas, & McLaughlin, 1991; Haluza-Delay, 2001; Leeming, Dwyer, Porter, & Cobern, 1993; Palmberg & Kuru, 2000; Shepard & Speelman, 1985–86).

The second type of college-level field course includes science classes offered through traditional university environmental and natural science departments (Bowler, Hartig, & Kaiser, 1999; Brown & De Lacerda, 1986; Emmons, 1997; Knapp & Barrie, 2001; Lisowski & Disinger, 1991). Field trips may comprise the entire course, or they may serve as one component of a class that also includes on-campus discussions, lectures, and

labs. Although such courses may aim to cultivate environmental awareness, most focus on scientific concepts and methodologies within a particular subject area. (Crompton & Sellar, 1981; Shepard & Speelman, 1985–86; Gillett et al., 1991; Leeming et al., 1993; Palmberg & Kuru, 2000; Haluza-Delay, 2001, University of California Natural Reserve System, 2006). These courses do not normally incorporate a humanistic perspective (University of California Natural Reserve System, 2006). The natural science-oriented focus of these traditional field courses reflects a more general feature of academic environmental studies. Interdisciplinarity has become a fashionable term, but most environmental studies field courses offered through traditional university departments still provide traditional, disciplinary perspectives (Brewer, 1999; Cole, 2007; Francis, Banner, & Rasmussen, 1993).

The High Sierra Project falls into the third major category of college-level environmental studies field courses: interdisciplinary hybrid courses that combine elements of both adventure programs and traditional academic science courses. Such courses frequently are offered through semi-autonomous field schools affiliated with university extension programs. The High Sierra Project is administered by the Wildlands Studies Program of California State University, Monterey Bay. Other similar programs include the Sierra Institute, offered through Humboldt State University, and the Wild Rockies Field Institute, which is affiliated with the University of Montana. Because such courses usually do not carry specific departmental affiliation, they provide excellent opportunities for interdisciplinary teaching as well as original research on field-based environmental education.

In the High Sierra Project we sought to provide our students with a deep understanding of the High Sierra region from natural science, social science, and humanistic perspectives. The course was divided into three sequential academic modules: (a) Sierra Nevada natural history, (b) the cultural history of wilderness preservation, and (c) current conservation problems facing the region. Each of these modules corresponded to a week-long backpacking trip. Students usually spent their mornings on the trail, early afternoons reading or conducting ecological research, and late afternoons participating in seminar-style discussions. Students conducted individual research on topics of their choice, and at the end of the course they presented their final projects to the group.

Methods

In our students' pre-course application essays, several expressed a desire to learn about the natural sciences and acquire technical research skills. In the end of course evaluations and individual meetings, however, many students identified discussions and readings in the environmental

humanities as their favorite aspects of the course curriculum. This observation elicited our curiosity and prompted us to investigate further. We reviewed field notes and written evaluations for each of the five years we taught the course. Then we contacted other Wildlands Studies Program instructors to ask if they had made any similar observations in their own courses. Their responses corroborated our observations, and at that point we decided to formalize our investigation. We developed a survey comprised of eight open-ended response questions that required about 20 minutes to complete (see Table 2). We sent the survey to all 44 of our former students by e-mail. After several attempts to contact past course participants, we achieved a response rate of 72% ($n = 32$).

Table 2

Student Questionnaire

Question #1: In addition to the High Sierra Project, have you taken any other environmental studies field courses or courses with field components? If so, please briefly describe the courses you have taken, including their relative emphasis on natural sciences, social sciences, and humanities.

Question #2: What aspects of the High Sierra Project curriculum attracted you to the course? What were you hoping to gain—personally, academically, and intellectually—from your participation?

Question #3: The High Sierra Project course curriculum is divided into three sections: (1) natural history and environmental science, (2) ideas about nature and wilderness, and (3) case studies of current conservation issues. Which aspects of this curriculum did you find most interesting and/or useful? Why?

Question #4: Many students and educators agree that venturing out into the field is important for learning about environmental topics in the natural and social sciences. Do you think that a field setting also helps students learn about environmental topics in the humanities? Why or why not?

Question #5: If you answered yes to the previous question, what specifically do think about being in the field helps students learn about topics in the environmental humanities? Please give detailed examples from your own High Sierra Project experience.

Question #6: The High Sierra Project curriculum includes a mix of natural science, social science, and humanities. Do you think that there is any benefit to studying both natural science and humanities in a single field course? Why or why not?

Question #7: Do you think there is any benefit to studying social science and humanities in a single field course? Why or why not?

Question #8: If you would like to share any additional insights on the roles of the sciences and humanities in field-based environmental education, please do so here.

Before analyzing the surveys, we removed the students' names in order to preserve anonymity. Both of the authors read the responses, and conducted a qualitative analysis that included coding the data for keywords and themes. We then compared our individual results to check for consistency, and aggregated the responses in a matrix that included both the questions and the commonalities that emerged. The survey responses varied, but we discovered several important themes. We then identified approximately 25 key quotations that we felt best represented the overarching themes. In the next section, we provide some summary statistics to convey our students' overall responses regarding their interest and engagement in the environmental humanities. This is not a quantitative study, and due to the small sample size we do not make any claims regarding generalizability. Instead, we draw primarily from the rich qualitative data contained in our students' open-ended written responses to the survey questions. This qualitative data serves as the focus of our analysis, and provides the basis for the paper's conclusions and recommendations.

Results

High Sierra Project students ranged in age from 18 to 27 years old. Although 80% of the students lived in California or had resided in the state at some point, they attended a total of 14 colleges and universities distributed throughout every major region of the United States. About two-thirds of our students had participated in other field study courses before the High Sierra Project. Our survey asked these students to respond to the following questions regarding their motivations for taking the course: "What aspects of the High Sierra Project curriculum initially attracted you to the course? What were you hoping to gain personally, academically, and intellectually from your participation?" Students chose to enroll in our course for a variety of reasons. The most commonly cited motivations included fostering personal health and wellness, meeting new people, exploring the region, and wanting to spend time outside.

Most of our students also stated that they signed up for the High Sierra Project because they wanted to learn more about the natural sciences. Several students wrote that they were particularly interested in acquiring methodological skills in ecology, geology, hydrology, and meteorology that might lead to future academic or professional opportunities. Our students had relatively little interest in learning about the environment from a humanistic perspective, and they were largely unaware of the concept or value of interdisciplinary environmental education. Of the respondents, 56% said that when they signed up for the course they were most interested in learning about the physical environment. Only 8% said they were most interested in learning about the environmental humanities.

In the words of one typical respondent, the course seemed to offer an opportunity “to gain a better understanding of California ecology and natural history in a hands-on kind of way.”

After the course, we asked the students to respond to the following question regarding their field-study experiences: “High Sierra Project course curriculum is divided into three sections: (a) natural history and environmental science; (b) ideas about nature and wilderness; and (c) case studies of current conservation issues. Which portion or aspects of this curriculum did you find most interesting and/or useful? Why?” Upon completing the course, 50% of the students said that they were most interested in the environmental humanities. Only 16% said that they were most interested in the natural sciences. For example, one student noted:

The [humanistic] section was by far the most intellectually satisfying.... This is the most important section, because it deals with the philosophical basis for our actions. This section started me on my path toward understanding man’s place in nature and will definitely influence my actions for the rest of my life.

All of the students who responded to the survey agreed that studying in the field stimulated their interest in, and helped them learn about, the environmental humanities.

Our students also found significant value in the course’s interdisciplinary approach to environmental studies. Of the respondents, 94% felt that an explicit integration of natural sciences and humanities helped them gain a richer understanding of the Sierra Nevada as a region. According to one student, studying environmental history, philosophy, and literature offered “new ways to think about the natural sciences.” Another student commented that although studying natural science in the field can help a student learn facts about nature, “you must also question how it is that you see those facts and relationships to gain more of a complete understanding.” Students were surprised, for example, to learn about the history of a tract in the Inyo National Forest that appeared “natural” but had experienced a long history of intensive management, including logging and fire suppression. We followed our discussion of the area’s history with a vegetation sampling exercise in which we examined the floristic composition of primary growth versus secondary growth forests.

Our survey revealed similar benefits regarding the integration of the social sciences and humanities. Of the survey respondents, 97% found an integration of social sciences and the humanities useful. Several respondents felt that a combination of social science and humanistic approaches helped make the course curriculum more “practical” by showing how

cultural attitudes, values, and beliefs can affect policy and management decisions that have tangible consequences for the environment. One student noted that a humanistic approach provides “ideas to think about in an abstract way and social science gives you a construct in which to apply these thoughts.” Another student found that integrating humanistic and social science perspectives established a “foundation of thought for how we carry out our economic, political, and social agendas.” Several students also wrote that integrating the natural sciences, social sciences, and humanities helped to bring students from a variety of disparate educational backgrounds into a cohesive and productive dialogue.

These results support the work of researchers such as Foster (1999), Saint Maurice (1996), and Gordon (1999), who have argued that combining humanistic and natural science approaches helps students unmask the nature/culture dichotomies prevalent in so much of natural science and Western environmental philosophy. One of our students affirmed this idea when she noted that “there is a deep connection between man and nature that can only be felt by spending time in nature.” Informal discussions conducted in the field revealed that several of our students had begun to move away from their previous views of the landscape as something that simply exists and of wilderness as an objective state of nature. In one memorable episode, a discussion of low-impact camping techniques developed into a vigorous debate about how the cultural history of ideas about wilderness had shaped current concepts of “leave no trace” outdoor ethics. Our students told us that their wilderness camping experiences had encouraged them to question the tenets of contemporary environmental ethics, including “leave no trace,” in ways they had not anticipated.

A systematic analysis of the open-ended written responses led us to conclude that three factors had fostered our students’ increased levels of interest and engagement in the environmental humanities. The first of these was the field immersion experience. Many authors have recognized the transformative potential of living and studying in the field (Christensen & Crimmel, 2008). The Wildlands Studies instructors with whom we corresponded each described the power of the field experience differently, but they all agreed that it seemed to foster scientific curiosity, as well as personal development and creativity. According to one longtime instructor, “the personal growth aspect of being in the backcountry inevitably, unavoidably, introduces human perspective into the learning process in a way that classrooms don’t.”

The importance of the landscape immersion experience also came out in our students’ survey responses, which often connected the value of humanistic study to a sense of place (Payne, 2006). One of the most urgent environmental issues in California involves the question of how best to

allocate scarce water, much of which originates in the Sierra Nevada, for a variety of social and ecological uses. By taking the class to Mono Lake to discuss the history of the state's water wars and water infrastructure developments, we connected the wildlands of the High Sierra with the cities and towns where many of students grew up. According to one student, this sort of experience gave her a "visceral perspective on issues that very easily lose their bite, their urgency and importance, in the classroom."

The field setting seems to have encouraged not only a sense of place, but also a sense of self. This reflective atmosphere—fueled by students' desire to "test" themselves, find "inspiration" toward a career path, and become more "enlightened"—made the field setting particularly conducive for learning in the environmental humanities. For example, one student noted that, "By the end of the course I got more than I had hoped for; I learned a lot from other team members and I learned a lot about myself." One of our fellow Wildlands Studies instructors also identified personal growth as an important element of the field experience when he commented that studying in the outdoors "integrates the mind and body and helps heal that dichotomy." For some students, this fostered a profound emotive experience (Ballantyne & Packer, 2002). Long days in the backcountry, encountering difficult conditions, working through problems with team members, reading extensively, and participating in focused and sometimes heated conversations brought up a wide variety of emotions and deep personal experiences.

The field immersion experience had another, unexpected benefit: our students also reported finding it easier to focus on course materials while studying in the field. This observation may seem counterintuitive since the field setting seems, at first glance, to provide so many distractions. Yet, for High Sierra Project participants, the backcountry environment provided a sense of simplicity. This break from the frenetic pace of twenty-first century college life gave them an opportunity to focus more on the course materials than they would during a normal semester. One student noted that it was "a lot easier to focus on the topics we discussed because there was nothing else really on your mind." Another student expressed a similar sentiment:

I felt like in our field experience we were very focused: there was a group of us in the backcountry with only a few things to think about ... hiking, eating, more hiking and all our readings and discussions. In a classroom setting the time is short and even if the topic is interesting, it is easy to forget about it and move on to some other thoughts as soon as we leave class. We couldn't leave class while we were in the High Sierra, we were totally immersed.

In the field, students found like-minded peers, a challenging physical environment, and enough time to read, write, and reflect.

The second of the three factors that we believe fostered our students' increased levels of interest and engagement in the environmental humanities was the experience of completing an interdisciplinary, place-based curriculum. Studying in the field can encourage a holistic perspective, typical of the environmental humanities, and discourage intellectual or disciplinary compartmentalization (Gruenewald, 2003). Wilderness areas in the Sierra Nevada provide ample opportunities to explore how natural, social, and cultural processes have shaped the landscape over space and time. In describing why the field setting promotes integrative, interdisciplinary thinking, one student simply wrote that "It makes sense to study all of these things together. They don't occur separately in life so why pretend that they're not connected?" Another student noted that studying in the field promotes a "big picture" perspective, which transcends the concerns of any specific discipline.

Students particularly appreciated activities that highlighted the landscapes we visited. By linking the curriculum to specific sites of exploration and inspiration, students were afforded first-hand experiences of key places, ideas, and debates in the history of the Sierra Nevada. One of our most successful activities, in terms of student feedback, occurred when we had our students read John Muir's classic adventure story, "The Ascent of Mount Ritter," aloud while we all sat in a circle at our camp on Garnett Lake, in the shadow of that massive peak (see Figure 1). After



Figure 1. Students and instructors read John Muir's (1894) adventure story, "The Ascent of Mount Ritter," aloud. Mount Ritter (left) and Banner Peak (right) loom in the background.

finishing the essay, we had a spirited discussion that examined how Muir's late-Victorian cultural context, immigrant experience, scientific knowledge, poetic disposition, and other aspects of his personal journey shaped his writing style and ideas about nature. We then reflected on how personal experiences have shaped our own contemporary views of wilderness. This discussion formed the beginning of a much larger theme that we carried throughout the course: American ideas about wilderness—as expressed in historical documents, literature, and the landscape itself—have changed dramatically over time.

In their responses, our students wrote that they could understand the works of authors who wrote about the region, such as John Muir, much more effectively after having walked the same trails and climbed the same mountains. For example, one student wrote:

As I read John Muir's 'Ascent of Mount Ritter' I was camping at the base of Mount Ritter, I saw the same towering mountain above that he did and felt something like what he must have felt. I understood where his appreciation for the Sierra Nevada came from and how that influenced his conservation efforts.

Other students said that they found such discussions more relevant than they would have on campus, because in the field they could see the products and processes of human-environment relationships. According to one student, studying in the field can "help you understand the inspiration people in the past have felt from being in nature and how that has influenced human thought and human culture." Another student, thinking about the methods of the great American nature writers, pointed out that, "In terms of environmental topics, the humanities were developed in the field. The inspiration came from nature, not a classroom."

The third factor that appears to have fostered our students' increased levels of interest and engagement in the environmental humanities was the small-group experience. The High Sierra Project enrollment varied from 7 to 13 students. When we followed remote, cross-country backpacking routes we would sometimes go for days without seeing other parties. This sense of isolation required us to develop group management skills, and it often led to the rapid development of new friendships and a sense of camaraderie. Partly as a result of the close personal ties that tend to develop in the field, we were able to foster frank and vigorous debates that often exceeded our expectations as instructors.

The students reported feeling a sense of intimacy and trust that is often associated with the formation of tight-knit student communities in intensive field courses. This small group experience led to what some scholars have called "empathetic learning benefits." Barrett (1997)

described the importance of empathetic learning environments for college-level education, arguing that effective learning occurs in a context of mutual respect, understanding, and empathy among students and their instructors. Other Wildlands Studies instructors described experiences that support Barrett's claims. For example, according to one of our colleagues, the need to address group dynamics is "unavoidable in these sorts of courses, and a humanistic approach benefits from this." During informal discussions in the field, High Sierra Project students indicated that they recognized these challenges and opportunities. They often credited the course's combination of collegiality and academic rigor with establishing a context for solidarity, candid dialogue, and acceptance. This atmosphere of acceptance and reflexivity seems to have allowed our students to grasp important concepts and develop what one described as "personal philosophies" of nature.

Conclusion

Over the course of four years teaching *Wilderness and Society: The California High Sierra Project*, we noticed a surprising trend. Most of our students had signed up for the course with a primary interest in the natural sciences, but during their time in the Sierra they became much more interested and engaged in the environmental humanities. Field study has long been a part of education in the natural sciences, but it was not immediately obvious to us why studying in the field might benefit environmental education in humanistic fields such as history, philosophy, and literature. In this paper we have sought to explain our observations. We identified three key factors that we believe contributed to the observed trend: the field immersion experience, the small-group dynamic, and the curriculum design. And we have argued that it was the combination of these factors that led to increased student interest and engagement in humanistic environmental studies.

For several decades, researchers and teachers have been calling for more interdisciplinary study and a more prominent role for the humanities in interdisciplinary college-level environmental education. In this paper, we have argued that field study courses can help to answer this call by acting as a lynchpin to connect the natural sciences, social sciences, and humanities. In the field, students can see how biophysical processes, social structures, and cultural ideas about nature fit together to shape the land and its inhabitants. Field courses provide opportunities to break down disciplinary academic barriers, and generate increased student interest and engagement in humanistic approaches to environmental studies that may seem overly abstract in a traditional classroom setting. Hybrid field courses, such as the High Sierra Project, that combine aspects of both traditional

academic classes and outdoor adventure programs are particularly well suited to this task. Such courses play an indispensable role, and they should occupy a central place in undergraduate environmental education.

Footnotes

- ¹ In 2008 the Wildlands Studies Program relocated, and it is now offered through the Extended Education division at California State University, Monterey Bay.

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