## Title

Assessing the Efficacy of Outdoor Education On Campers' Perceptions of Environmental Stewardship, Civic Engagement, and College and Career Pathways



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# Assessing the Efficacy of Outdoor Education On Campers' Perceptions of Environmental Stewardship, Civic Engagement, and College and Career Pathways

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Education

by

Amy Frame

ABSTRACT OF THE DISSERTATION

Assessing the Efficacy of Outdoor Education on Campers' Perception of Environmental Stewardship, Civic Engagement, and College and Career Pathways

By Amy Frame

Doctor of Education in Education

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Professor Rashmita S. Mistry, Chair

Given global threats to the continued functioning of ecosystem services that sustain us all, educators would be wise to embrace the task of redefining our individual and collective orientations to the natural world. Since the inception of the modern environmental education movement in the 1970's, outdoor education at residential camps has distinguished itself as one of the most promising pedagogies for inspiring environmental stewardship behaviors (American Institutes for Research, 2005; Hattie, Marsh, Neill, & Richards, 1997; Larson, Castleberry, & Green, 2010). Specific outdoor education program components have been shown to lead to immediate feelings of connectedness with nature, social connectedness, and self-efficacy (Garst, Browne, & Bialeschki, 2011a; McKenzie, 2003; Priest & Gass, 2005). This empirical study explored the relationships among campers' demographics, attitudes related to their camp experiences, and self-reported behavioral intentions toward environmental stewardship, civic engagement, and academic motivation. This study provides data that can be used by educators to improve programs and expand opportunities for meaningful outdoor education to all school-aged children.

The mixed-method design consisted of two phases of data collection (Creswell, 2014). First, I administered pre- and post-camp surveys of 795 campers aged 8-17 who attend week-

long sessions at two camps in California. Next, I conducted 44 retrospective interviews of camp alumni. By interviewing alumni who attended camp as children and are now in their 20's, 30's and 40's, I gained insight into the relationships among campers' characteristics, camp programming, and eventual adult behaviors and into how memories of camp change over time.

Data from both camps showed continuity between camper surveys and alumni interviews in the program components offered and their possible relationships to proximal and distal outcomes. At both sites, pre to post surveys showed statistically significant increases in connectedness with nature and social connectedness, despite the different curricular emphases at each camp. At one site, critical dialogue by trained counselors increased social connectedness. Such conversations revealed systemic issues such as poverty and racism, which often inspired college-aged volunteer counselors to pursue careers working with children or otherwise addressing inequities. Camp's ability to increase empathy among diverse participants may be useful in helping people see the protection of nature as an integral part of improving peoples' well-being. Although surveys indicated increases in environmental stewardship intentions, interviews showed that these were often minor personal acts of reduced consumption rather than the systemic participation or leadership in systems-level work required to overcome environmental injustices that keep us all from our true, biophilic natures as human beings.

The dissertation of Amy Frame is approved.

Christina Christie

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2017

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# Vita

Amy Frame is a life-long lover of nature, coffee, and research – in that order. She has taught, mentored, and led at public, charter, and independent schools in diverse Los Angeles neighborhoods for the past 20 years. She earned her B.A. in History and Art History at the University of California, Los Angeles (1999) and her M.Ed. at Harvard's Graduate School of Education in Instructional Leadership (2010). Over the years, she has helped thousands of teenagers and scores of teachers experience California's deserts, beaches, and mountains. Through her work on this Ed.D. in Educational Leadership and her Leaders in Sustainability Graduate Certificate from UCLA's Institute on the Environment and Sustainability (2017), she hopes to inspire educators and policy makers to ensure that all students have access to healthy ecosystems, both at camp and in their own communities.

# Chapter 1: Introduction

## The Failure of Environmental Education

Despite its long stated goal "to create new patterns of behavior of individuals, groups, and society as a whole towards the environment" (Tbilisi Declaration, 1977, p. 26), in the past 40 years, environmental education has not led to behavioral change substantial enough to stave off increasing degradation of ecosystem services or loss of planetary biodiversity (Rockstrom, 2009). Working alongside American schools, environmental educators have developed an economy where only 2.6% of workers focus on green goods, services, technologies, or practices (U.S. Bureau of Labor Statistics, 2013). The green workforce has failed to keep pace with America's racial diversity, with fully 84% of those working in Science, Technology, Engineering, and Math (STEM) fields identifying as white or Asian (Stevenson, 2013). Additionally, the leaders and members of mainstream environmental groups continue to be white, upper-middle class, and older (Audubon Society, 2015). While environmental concern has become part of mainstream culture, our consumption of resources and the resulting environmental impacts have actually grown per capita since the modern environmental movement began. Solving environmental problems requires both cultural change and technical expertise. Because we must rely on states to enact educational policies to train the next generation of environmental stewards, in this study I focused on the environmental education context of California, a state known for its forward-thinking environmental initiatives.

Although promising on the surface, the California Department of Education's recently adopted *Blueprint for Environmental Literacy* (2015) fails to define what specific knowledge, skills, or understandings are expected of students, and leaves out behavioral change as an intended outcome of environmental education. Without clear articulations of aspirational

learning objectives and how they will be assessed, educators often default to teaching simpler cognitive knowledge and skills, which are also easiest and cheapest to measure. The *Blueprint's* recommendation to assess environmental literacy largely through standards-based tests undermines the affective, experiential, and critical nature of environmental education for real behavior change (Gruenewald, 2004). Currently, educational leaders have few viable metrics to connect environmental education programs in which their students participate to outcomes required by the state's Local Control Funding Formula and Accountability Plans, and therefore few ways to justify their funding as part of school budgets (California Department of Education, 2015). Environmental education providers do not yet have a consistent and reliable way to measure their impacts, to evaluate the efficacy of individual program components for different populations, or to refine their teaching practices based on data. The goal of this study was to bridge the work of practitioners and researchers. Specifically, this study explored *outdoor* environmental education, one of the pedagogies shown most likely to environmental stewardship behaviors (D'Amato & Krasny, 2011; Larson et al., 2010) while simultaneously increasing student's subjective well-being, an important goal in itself (Mayer & Frantz, 2004).

**The Promise of Outdoor Education**

Outdoor education, as a critical pedagogy, has the potential to transform the lives of students and improve our capacity as a society to live more sustainably. Through this study I hoped to clarify the processes by which outdoor education programs attempt to achieve these objectives and other related student outcomes. Outdoor education at residential camps is remarkably similar across sites in the United States and has remained highly stable for decades (Smith, Steel, & Gidlow, 2010). Typically, school-aged children are led by paid and volunteer adults and near-peer aged counselors in groups of about ten students through a series of outdoor

nature-based and team building activities. Campers sleep in cabins and eat together in a dining hall for approximately a week in a remote, semi-primitive setting without access to electronics.

Environmental educators have long debated about the appropriateness of attempting to change students' behaviors to meet the perceived needs of other species (Heimlich, 2010; Stevenson, Peterson, Bondell, Moore, & Carrier, 2014). One major argument my study makes is that regardless of whether one takes an anthropocentric view – that the purpose of education is to develop an individual's capacities, or a biocentric view – that human "needs" can only be understood as part of an interdependent web of life, outdoor education is a promising pedagogy. This study explored the benefits to students that resulted from participation in outdoor education offered through residential camps. These included proximal psycho-social benefits of connectedness with nature, social connectedness, and self-efficacy and the distal benefits to nature and society of increased interest in environmental stewardship, civic engagement, and academic motivation. Secondly, this study aimed to fill an important need by helping outdoor education practitioners better understand the perceived impacts of their program components as camp alumni age into their 20's, 30's and 40's, to enable them to improve their instruction for future campers (Scrutton & Beames, 2015). Ultimately, this research may be used to bolster support for increased outdoor education opportunities for California's K-12 students, of whom only 8% of 5$^{th}$ and 6$^{th}$ graders (the largest age group to attend camp) currently have the opportunity to attend camp (American Institutes for Research, 2005). I simultaneously address individual developmental needs, the state's mandates to improve school climate and student engagement, and humankind's biological imperative to create a generation of students who can meet academic content standards and transcend their disciplinary boundaries to solve our toughest ecological challenges (California Department of Education, 2015; Gruenewald, 2004).

**Research Design**

In order to understand the efficacy of outdoor education programs on student outcomes, this study addressed the following research questions:

1. How does participation in an outdoor education experience relate to changes in campers' behavioral intentions toward environmental stewardship, civic engagement, and their level of academic motivation, as assessed prior to and after participating in the camp?
2. Related to this, what specific components of the outdoor education program relate to campers' reports of environmental stewardship, civic engagement, and academic motivation?
3. To what extent, if any, are changes in campers' reports of environmental stewardship, civic engagement, and academic motivation as a result of participating in an outdoor education program moderated by their sense of connectedness with nature, social connectedness, or self-efficacy?
4. To what extent, if any, are changes in campers' reports of environmental stewardship, civic engagement, and academic motivation as a result of participating in an outdoor education program moderated by campers' age, gender, socioeconomic status, race/ethnicity, or previous camping experience?
5. How do camp alumni retrospectively reflect on how their participation in an outdoor education program influenced their orientation toward environmental stewardship, civic engagement, and academic motivation?

This mixed-methods study (Creswell, 2014) sampled two populations to compare short and long term camp outcomes. Campers will be drawn from two outdoor residential schools in California, each of which offers a variety of three to seven-day camp sessions to children aged 9-17. Both camps are in pine-forested mountains located outside of major metropolitan areas. At

Site 1 (“College Camp”) campers from various schools aged 10-14 signed up to attend themed summer camp sessions. The curriculum focused on community building and college readiness and was taught by volunteer university student mentors. At Site 2 (“Outdoor School”) campers in 5th and 6th grades attended with their classmates during the school year as part of their required curriculum. Here, the staff focused on providing direct experiences with nature, ecological knowledge taught by naturalists, and sustainable lifestyle choices. These two particular sites were selected to include students of a similar age but a variety of ethnic and socioeconomic backgrounds and because they offered a range of program components. The sample allowed me to investigate the effects of instructional strategies on a large pool of diverse California students.

During phase one, pre- and post-camp surveys were administered to approximately 795 campers on their first and last days of camp. For baseline data, students answered multiple choice questions about how they normally feel about themselves and their future motivations. To understand possible effects of specific program components, campers answered multiple choice questions to describe the activities they participated in, their immediate feelings about these experiences, and their future motivations after attending camp. I used correlational analyses to explore any significant relationships between participant characteristics, program components, camper’s feelings, and their future intentions; the primary dependent variable was the change in attitudes between pre- and post- camp surveys.

During phase two, “alumni” from each camp participated in in-depth retrospective interviews to determine the effects of camp over time. 44 adults were interviewed, including participants from each of the past four decades since the *Tbilisi Declaration* (UNESCO, 1977) was signed, initiating the modern environmental education movement. Interview questions were created to probe any significant findings that emerge from the quantitative analysis. Transcripts

were analyzed both deductively for the constructs in my model, and inductively, to seek additional effects of camping and alternative explanations for the effects of outdoor education over time. This design fills a major gap in the literature regarding distal effects of outdoor education (Smith, Steel, & Gidlow, 2010).

**Impact of Research**

My hope is that findings from this study will contribute to our understanding of the impacts of outdoor education on long term environmental stewardship behaviors, which is a key goal of environmental education. The findings may also provide practitioners with data highlighting the ability of outdoor education programs to foster civic engagement and academic motivation among participating campers. The survey instrument and its results may be incorporated into outdoor education program evaluation and public education accountability and programming decisions, expanding access to high quality outdoor education to a wider range of more diverse students. Under California's relatively new Local Control Funding Formula, a model to which other states are looking for guidance under new federal regulations, education agencies have increased levels of funding to allocate to disadvantaged students for evidence-based practices; this study may provide such evidence (California Department of Education, 2015). Ultimately, I hope this study will bolster our collective resolve to make sure that students' time is spent on what really matters – producing citizens who have the capacity and willingness to pull our society back from the brink of insurmountable ecological destruction.

# Chapter 2: Literature Review

## Introduction

This research project sought to directly address the failure of the environmental education field to meet its own explicitly stated goal of changing behavior toward the environment. Despite 40 years of work by environmental educators, human actions have actually accelerated the degradation of ecosystems and the services they provide humans and other species. Among the many goals of K-12 public education, increasing the likelihood of our survival by graduating college and career ready students motivated to alter individual and collective lifestyle choices must rank among the most important.

This literature review provides context for how the current study bridges the ideological divide between emancipatory and instrumentalist approaches to environmental education by testing a model that integrates sometimes apparently competing individual, social, and ecological outcomes of outdoor education. Among pedagogies vying for children's time and public funding, residential outdoor camp programs are uniquely situated to positively impact campers' eventual behaviors regarding environmental stewardship, civic engagement, and academic motivation. Camp programs may accomplish this by fostering connectedness with nature, social connectedness, and self-efficacy. The current study contributes a deeper understanding of the interaction between specific instructional program components, camper demographics, and the changes camp alumni perceive over time in describing the significance of their childhood camp experiences. The survey instrument and data from this research can be used by educators and policy makers to support increased access to high quality outdoor education experiences for all students.

**Contested Goals for Environmental Education**

Technically, there is widespread international agreement on the purposes of environmental education. The *Tbilisi Declaration*, adopted by the United Nation's first intergovernmental panel on environmental education, has provided an enduring framework for the field. As declared by 265 delegates from 66 countries, it explicitly outlines the intended outcomes of environmental education (UNESCO, 1977, p. 26):

> Goal 1: to foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas;
>
> Goal 2: to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
>
> Goal 3: to create new patterns of behavior of individuals, groups, and society as a whole towards the environment.

These fundamental goals have served as the basis for most subsequent frameworks, standards, and studies, with minor variations (Hollweg, et al., 2011; NAAEE, 1999). See Appendix A: Environmental Education Outcome Frameworks for a comparison. Most educational programs and research studies, however, have focused on goals one and two only – awareness, knowledge, values, and attitudes, at the expense of goal three – behavior change (Heimlich, 2010; J. E. Heimlich, Mony, & Yocco, 2013). My study seeks to overcome philosophical and technical obstacles to achieving behavior change through educational experiences in nature.

The appropriateness of changing students' behavior has been the subject of longstanding and at times debilitating debate between two opposing educational philosophies (Stevenson, 2013). Proponents of *instrumental* approaches accept setting pre-determined educational behavioral outcomes, such as increasing recycling or decreasing carbon emissions. Instrumentalists consider it acceptable for students to be the agents of the intended outcome: ecological health (Heimlich, 2010). Those favoring *emancipatory* education prefer to teach

students processes for self-actualization and political advocacy. For example, the North American Association for Environmental Education describes itself as a network of people "people who believe in teaching people *how* to think about the environment, not *what* to think," let alone what to do (2008). In emancipatory approaches, students' transformed human capacities are the immediate goals, with ecological health as a possible secondary benefit. Using approaches from critical pedagogy, some educators "seek to engage participants in an active dialogue to establish their own objectives and plans for action" (D'Amato, 2011, p. 237).

Environmental education has in part failed to create behavior change because in its attempt to be accepted into general education practice, it has not embraced its identity as a critical pedagogy. According to education reformer Steven Wolk, "if there is anything that should be ripe for critical inquiry inside our schools, it is the 'American way of life' and its effect on the environment. School should be the primary place we engage children in collective critique of how we live" (2007, p. 653-654). Ecopsychology is a branch of psychology distinguished by its critique of Western society's individualism as the root of anthropocentric worldviews which unhealthily disconnect people from the natural world. Its practitioners claim that the modern development of the individual as the basic object of attention poses a problem for the environment and that environmentalism itself is a fundamental challenge to the dominant capitalist paradigm governing our lifestyles and impoverishing our inner lives (Snell, Simmonds, and Webster, 2011). Related empirical studies found that narcissism (individual self-centeredness) and exploitatativeness are personality factors associated with Western cultural values and lower self-reported pro-environmental behaviors (Frantz, Mayer, Norton, & Rock, 2005). Given the contested, normative nature of defining "the good life," it is no wonder that environmental educators have had difficulty finding their appropriate role as partners in K-12

education. Even progressive-leaning California has shied away from holding educators accountable for actual behavior change.

In California, where the current study takes place, a recently adopted *Blueprint for Environmental Literacy* basically restates *Tbilisi*, saying "students will become environmentally literate, developing the knowledge, skills, and understanding of environmental principles to analyze environmental issues and make informed decisions" (California Department of Education, 2015, p. 11). The authors assert that "an environmentally literate person has the capacity to act individually and with others to support ecologically sound, economically prosperous, and equitable communities for present and future generations" (p. 11). Hedging their bets, the authors mentioned action, but limited the outcome at having the *capacity* to do so, rather than actually doing it. Such goals attempt to respect students' agency while also impressing upon readers the urgency with which our shared ecology, economy, and community depend on informed, inspired, and bold action by students and teachers alike. Still, according to the heuristic developed by Jickling and Wals (2013), California's reference to an "economically prosperous" community echoes work from the Education for Sustainability (EfS) movement, whose agenda is more transmissive and authoritative than transformative or participatory. Instead of confronting the social and ecological inequities of capitalism, the EfS movement relies on government supported, top down curriculum that fails to develop learners' autonomy or critical thinking. It remains to be seen how California's approach will manifest in educational practice.

**Study Goals and Conceptual Framework**

This study's unique contribution is its integration of both emancipatory and instrumentalist outcomes into a single logic model (see Appendix B). I evaluated the impacts of environmental education instructional program components on individual students' sense of

connectedness with nature, social connectedness, and self-efficacy because such proximal outputs of a "well-rounded education" (*Every Student Succeeds Act,* 2015) confer mental and physical health benefits on students and can be considered ends in themselves. I examined the behavioral intentions of students, in terms of environmental stewardship, civic engagement, and academic motivation. Although my primary focus was on pro-environmental behaviors, I explored the second two distal outcomes because of their relevance to the goals of mainstream public K-12 educational institutions through which most students experience environmental education. In the context of children and adolescents' outdoor education at week-long residential camps, I hypothesized that immediate student well-being is both emancipatory and instrumental, serving to develop individuals' human potential as well as increase pro-environmental behaviors.

## The Promise of Outdoor Education

**Outdoor Education Program Components.** Outdoor education strategies at residential camps have remained remarkably consistent over the past 80 years (Garst, Browne, & Bialeschki, 2011; Smith, 1972). Instructional program components have likely perpetuated enduring traditions because camp settings and facilities lend themselves to a fairly narrow range of activities and because training programs for outdoor educators are concentrated at a few well-established institutions (Priest & Gass, 2005). Although sparse, extant studies do highlight the efficacy of activities central to the camp experience. In a study similar to mine, McKenzie (2003) used retrospective interviews from adult campers to probe the relationship between positive course outcomes as measured by a survey and specific course components, finding that the physical setting, physical challenges, and the quality of the small group experience were variables most associated with positive outcomes. In their meta-analysis of peer-reviewed journal articles, Stern, Powell, & Hill (2014) determined characteristics that promote positive outcomes

include direct experiences in the outdoors, collaborative group discussions, role modeling by course leaders, preparation or follow up activities.

**Outdoor Education Outcomes.** Research shows that outdoor education is an promising pedagogy for increasing positive affect for nature, a key predictor of eventual stewardship behaviors (Bamberg & Moser, 2007). A study of 739 children age 6-13 showed an overwhelming preference for physical activities at camp and pointed to outdoor education as a significant pedagogy for changing behavior (Stevenson, et. al, 2013). Using the Middle School Environmental Literacy Survey in a pre- post- test study with a control group, the authors discovered approaches which significantly impacted knowledge, skills and behavior. Time outdoors was the most important factor predicting pro-environmental affect, and it was especially effective for Black and Latino students. Classroom activities, school type, gender, and socioeconomic status variables showed a limited impact on student affect or behavior.

Additional research suggests that instruction need not focus on environmental content, but that the camp setting and general camp activities themselves may afford enough experience with nature to change students' feelings or actions. A study compared students at camps in wilderness and urban settings, and those with environmental education curricula to those without it (Collado, Staats, & Corraliza, 2013). Interestingly, contact with nature increased students' affinity for nature and willingness to display pro-environmental behavior – but the explicit instruction in environmental education did not have any measurable impact. My study included camp programs with and without environmental content to further investigate this finding.

Valuable qualitative research offers explanations for how nature experiences may work to change environmental attitudes and ultimately behaviors. In an insightful study, D' Amato & Krasny (2011) interviewed 23 outdoor adventure education participants, ages 15-24, one to five

years after multi-week learning wilderness expeditions. The authors paid particular attention to predictors of pro-environmental behavior highlighted by Hines, et al (1987). Emergent themes led researchers to apply Transformative Learning Theory as a model of behavior change. In it, "learners experience a disorienting dilemma, critical self-reflection, social interactions, planning for action, and building competence and self-confidence in new roles and relationships as a result of taking action" (D'Amato and Krasny, 2011, p. 243). Interestingly, some participants expressed a sense of gratitude or owing something to pristine nature for their transcendent experiences, which the authors suggest may have been responsible for their pro-environmental behavior intentions. Other research found that solo time was the most motivating component because it gave participants time to reflect on their lives (McKenzie , 2003), including the consequences of their actions. Taken together, these and related studies indicate that outdoor education functions primarily through direct physical and emotional processes made possible largely through the natural settings in which it takes place.

**Measuring Outdoor Education Outcomes**

Because of our society's pressing need to produce a generation of diverse college graduates with the drive to address serious ecological issues at the local and global levels, it is imperative that public education embrace and fund inspiring, high quality educational experiences. For those educators not yet bought in to environmental stewardship as a valid outcome of K-12 schooling, I also included two mainstream educational outcomes in my study – civic engagement and academic motivation. Evidence suggests that outdoor education can be used instrumentally to achieve all of these three related behavioral intentions.

**Environmental Stewardship.** Environmental stewardship consists of a wide range of actions, from the very private to the very public, most of which are challenging to measure. In

developing their Environmental Action Scale, Alisat and Riemer (2015) first empirically differentiated personal practices from civic actions in their study of 281 adults from six countries. *Personal practices* focused on reducing the ecological impact of private sphere choices such as energy use, transportation, and consumer habits. *Civic actions*, focused on system-level change to society, are subdivided into *participatory* and *leadership* actions. While personal practices were often found to be related to demographic characteristics, civic actions were far more dependent on contextual factors, such as the prevalence of environmental risks or controversies and social connections with those identifying as activists. A contrasting approach from the field of conservation biology was taken by Kaiser, Oerke, & Bogner (2007). Researchers derived a "behavior-based environmental attitude" using a sample of 931 adolescents who reported on their conservation behaviors from the past month. Their scale largely overlapped with and supported previous work using the New Ecological Paradigm scale (Dunlap, Van Liere, Mertig, & Jones, 2000), including its adaptation for children and teens in different cultural contexts (Kopina, 2011) and the Inclusion of Nature in Self (Schultz, 2004) scale. Research has largely focused on the relationships between environmental stewardship actions and attitudes or worldviews and highlights the complex nature of decision-making.

My work also built upon two related major meta-analytical studies on predicting Responsible Environmental Behavior, given a set of psycho-social variables. Both studies clearly point to intent as the most predictive factor of the many they examined. Almost 30 years ago, the first major meta-analysis of empirical research proposed a complex cognitive model of behavior change that built off of the Theory of Planned Behavior (Azjen, 1997) and the Norm Activation Model (Hines, Hungerford, & Tomera, 1987). Noting that abilities alone are not sufficient to lead to action, this seminal study added personality factors such as locus of control, attitudes, personal

responsibility, action skills, and situational factors. The replication and extension of this study conducted about ten years ago by Bamberg & Moser (2007) used meta-analytic structural equation modeling and confirmed that pro-environmental behavioral *intention* mediates the impact of all other psycho-social variables on pro-environmental behavior, explaining 27% of the variance. While methodologically rigorous, this body of work from the field of cognitive psychology has been of limited practical use to educators over the past four decades because on the one hand, it relies on behaviorist assumptions about the predictability of causation and on the other, presents models so complex that they cannot reasonably guide the revision of curriculum.

Another limitation in this field is that the vast majority of studies rely on self-reported data on stewardship behaviors rather than direct observation of behaviors themselves. A recent meta-analysis by Kormos and Gifford (2014) examined a sample of 6260 individuals and households. They conducted a search for studies in which the same pro-environmental behavior was measured by both self-reports and more objective measures, including device measurements (such as electricity meters), trained observers (who visited homes), and peer ratings (such as by spouses). They found that the effect size for the validity of self-reported behaviors, while conventionally large, is functionally small. Despite a correlation of .46, the authors caution that 79% of the variance in association between self-reports and objective measures remain unexplained. The highly heterogeneous findings ($r$ = .06 to $r$ = .85) included in their study suggested the need for cautious interpretation, given that self-reports are ostensibly of the exact same behaviors as the objective measures. Among the six reports where it was possible to make determinations, the self-reports were an average of 9% higher than objective measures. Taken together, this research implies that self-reported intentions for stewardship behaviors may be used as an imperfect but reasonable proxy for actual stewardship actions.

**Civic Engagement.** Civic engagement is a willingness to contribute to the good of one's community through activities such as volunteer service, political involvement, or careers in civil service. Often motivated by a sense of collective responsibility or a desire for social change in response to injustices, young people may participate in or lead a wide range of less well-recognized forms of civic engagement as well, such as choosing careers they perceive as contributing to their communities (Suárez-Orozco, Hernández, & Casanova, 2015). While a valuable end in itself, improving civic engagement outcomes may indirectly be related to environmental stewardship as well. Camp experiences build a strong sense of community and camaraderie, often incorporating young adult volunteers counselors as role models of civic engagement for younger students and allowing campers to demonstrate their worth to the camp community through completing important tasks or taking on leadership roles (Garst et al., 2011). Many school systems have embraced community service as graduation requirements, showing a willingness to encourage school-aged students to participate in potentially politically charged "real word" actions. Civic engagement in environmental issues is just one of many causes to which students might devote their efforts, and some research suggests that education for civic engagement may positively influence willingness to engage in stewardship behaviors. In a study of 2361 Finnish adolescents, structural equation modeling showed that predictors of pro-environmental behavior (including self-efficacy, discussed below) were enhanced by pro-social experiences and in-school agency (Uitto, Boeve-de Pauw, & Saloranta, 2015). Responding to data on teens' preferences for human-focused issues, such pro-social experiences increased students' sense of agency without even addressing ecological issues.

Related research found that having a more cosmopolitan orientation predicts pro-environmental behaviors (Leung, Koh, & Tam, 2015). Participants who expressed a collective

moral responsibility to extend human rights were also found to engage in more frequent conservation behaviors. It may be that conscious civic behaviors help people focus on systemic causes of problems, raising critical consciousness about political and economic structures that disadvantage some populations – and species – at the expense of others (Alisat & Riemer, 2015). In general, civic engagement activities may increase peoples' sense of empowerment, especially important for youth and younger children typically have fewer opportunities for agency (Dunlap et al., 2000; Kopina, 2011; Uitto et al., 2015). In the microcosm of the camp community, students may develop an ethic of service or giving back to their fellow campers that transfers to life "down the mountain" when camp is over.

**Academic Motivation.** Some research suggests that environmental education, in general (Lieberman, 2013) and outdoor education in particular (American Institutes for Research, 2005) promotes academic motivation in children. Academic motivation can be considered composed of self-regulation and intrinsic value (Learner & Kruger, 1997). Self-regulation is a metacognitive process in which a learner self-evaluates during learning. Intrinsic value includes a preference for challenging work and curiosity about schoolwork. Attachment to parents and teachers, a form of social connectedness (discussed below) were found to have a significant relationships to academic motivation, accounting for 26% of the variance in intrinsic value and 18% of the variance in self-regulation in a hierarchical multiple regression analysis (Learner & Kruger, 1997). Camp experiences may function in various ways to increase academic motivation. Compelling direct experiences with nature may motivate students to learn more about ecology (Powell, Stern, Krohn, & Ardoin, 2011). The bonds which form as a result of novel shared experiences among students or between students and adults may transfer to the classroom setting

(Smith et al., 2010). My study was designed to provide insight into the relationship between academic motivation and other variables.

**Variables Affecting Outdoor Education Outcomes**

I hypothesized that the outcomes of environmental stewardship, civic engagement, and academic motivation were impacted by students' subjective levels of experiencing three important attitudes: connectedness with nature, social connectedness, and self-efficacy. Each of these three states of mind can be seen as emancipatory, in that they contribute to the growth and well-being of campers, regardless of their ultimate impacts on other outcomes.

**Connectedness with Nature.** Connectedness with nature is an important end in itself, as important as other socio-emotional learning already embraced by mainstream K-12 education. This concept is closely connected with the evolutionary biologist E.O. Wilson's biophilia hypothesis: that people have an innate affinity for nature and benefit physically and psychologically from connecting with it (1984). It is also known to be an important predictor and potential cause of pro-environmental behaviors (Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009). A founding father of contemporary environmentalism, Aldo Leopold, contended that "we abuse the land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect" (1949). Ample research indicates that many different concepts of nature connection converge and do in fact represent a single psychological phenomenon that is measurable as "attitude toward nature" (Brugger, Kaiser, & Roczen, 2011; Franz, et al., 2009). The relatively new field of ecopsychology "highlights the possibility that people gain purpose and meaning in life by feeling an experiential sense of belonging to the natural world" (Snell, Simmonds, and Webster, 2011).

Outdoor education provides experiences in nature that may foster empathy toward the natural world (Frantz et al., 2005). Studies have shown that between people, as relationship closeness increases, so do empathy and willingness to help (Frantz et al., 2005). Outdoor education is uniquely positioned to provide connectedness with nature because it takes participants physically and mentally closer to our evolutionary roots than any other aspect of K-12 education today. Certain program features such as solo time, physical challenges stemming from wilderness settings, and direct experiences with animals or plants are likely to have strong correlations with feelings of connectedness (McKenzie, 2003; Scrutton & Beames, 2015).

In a sense, nature is seen as providing a "psychological ecosystem service," in which time spent outdoors improves our functioning as people (Bratman, Hamilton, & Daily, 2012). Connectedness with nature appears to have physiological and mental health benefits that can be measured in a clinical setting and are beneficial to students regardless of their impacts on environmental behaviors (Bratman et al., 2012; Kuo, 2015). In Stress Reduction Theory studies, participants' heart rate, muscle tension, and blood pressure were measured for their recovery times after exposure to stressful stimuli. Those viewing nature scenes and walking in forests recovered more quickly than those viewing or walking through urbanized environments. Attention Restoration Theory states that replenishment of our direct attentional capacities is the primary mechanism underlying positive effects of exposure to nature. Traditional psychological constructs of working memory, impulse inhibition, and concentration all require directed attention. In this theory, the Kaplans (2004) postulate that four essential components of landscapes activate under-used neural mechanisms: extent (immersion), being away (escaping habit), fascination (aesthetics or curiosity), and compatibility (between intentions and landscape experience). Time in locations exhibiting these qualities enhances attention and allows us to

concentrate with peace of mind. Outdoor education at residential camps provides landscapes conducive to health benefits.

The most researched affective tool in this field is the Connectedness with Nature scale, which takes into account subjects' feelings and worldviews. The scale was designed to operationalize and test the proposition that empathy is a major driver of connectedness and conservation behaviors. In a series of rigorous studies, both the state and trait versions of the Connectedness with Nature Scale were empirically tested against other scales and for a variety of outcomes (F. S. Mayer et al., 2009). The authors found that the positive effects of exposure to nature on emotions and attention were mediated by a feeling of connectedness, as measured by their 13-question scale. People most connected with nature also showed a biocentric worldview and a greater ability to reflect on life issues after nature exposure. A related study showed that those most connected with nature tended to have personalities or worldviews that were less exploitative, narcissistic, and focused on material consumption (Frantz et al., 2005). Enjoying the great outdoors may have important consequences for campers as individuals and as a group.

**Social Connectedness**. Forming and strengthening relationships with peers and adults is one of the most often reported benefits of attending camp; this study explored how such relationships may have influenced future actions (Garst et al., 2011a; Smith et al., 2010). Some program components lend themselves to group bonding, such as being away from usual social settings, reduction in normal material status markers, and group challenges or team building which draw on individual strengths different from school settings (Garst et al., 2011; Smith et al., 2010). Outdoor education builds "collective efficacy" as small groups overcome physical challenges (Sibthorp & Jostad, 2014). A recent study of California pre-teens using pre-posttest and control groups suggests that social connectedness may result from increased processing of

nonverbal cues because the relatively primitive wilderness settings reduced youths' screen time compared to their use at home during the school week (Uhls et al., 2014).

Using the "Community Sense of Coherence" model, Elfassi, et. al (2016) found that youth with a sense of belonging to a safe, familiar community had more coping strategies and greater resilience to deal with stressful situations. It appears that social connectedness is closely tied with self-efficacy (discussed below). Social connectedness can also be measured by "attachment," a known predictor of mental health outcomes. Researchers found that adolescents with greater peer attachment or sense of school connectedness display more pro-social behaviors such as perspective-taking and empathy (Oldfield, Humphrey, & Hebron, 2016). My study explored the possibility that such empathy extended beyond the camp setting to later civic engagement actions or to the non-human world and through environmental stewardship.

**Self-Efficacy.** Research and anecdote support the ability of outdoor education programs to build self-efficacy, the belief that one can accomplish something. Specifically, from Bandura's social learning theory (1977), self-efficacy is defined as the certainty of an individual's belief under risk that s/he can successfully accomplish a task that tests ability. Self-efficacy expectations vary by *magnitude* – the degree of certainty of success, *strength* – the persistence over time of expecting success despite failures, and *generality* – the degree of transfer to tasks that are different from the current performance (especially important in outdoor education). An individual's self-efficacy is based on four sources: past accomplishments, vicarious experiences, verbal encouragement, and physiological arousal (Paxton & McAvoy, 1998). Self-efficacy is closely related to the concept of locus of control by Weiner (1972), who found an internal locus of control to be associated with pride, confidence, competence, and satisfaction, compared to an

external locus of control. The development of high self-efficacy can be seen as an end itself because it contributes to adolescents' mental health (Mutz & Muller, 2016).

Outdoor education develops self-efficacy when students face the natural and immediate consequences of their choices, both positive and negative. Taking risks to overcome challenges, reflecting on failures and successes, and surviving novel conditions contribute to feelings of self-efficacy (Garst et al., 2011; McKenzie, 2003). Self-efficacy has also been shown to predict pro-environmental behaviors, possibly because it helps people move past the idea that their small contributions make no difference to the global crises (Heimlich & Ardoin, 2008). Outdoor education provides most students with a chance to face and overcome multiple physical, social, and psychological challenges per day in a supportive and reflective learning environment. Self-efficacy leads to positive feelings about one's self, and may be instrumental in fostering students' willingness to engage in environmental stewardship, civic engagement, and the academic motivation necessary to become "college and career ready" in today's world.

## Significance of Study

**Research: Filling the Gaps**. This research was designed to provide valuable, detailed information regarding how outdoor education programs impact their campers with quantitative and qualitative information connected to specific outdoor education program components and the effects of these program components on important subgroups of campers.

Perhaps most importantly, I described some perceived distal effects of outdoor education on campers' lives in relation to three socially important educational outcomes of environmental stewardship, civic engagement, and academic motivation. Many people are interested in discovering the correct "dose" of nature exposure required for benefits to occur (Scrutton & Beames, 2015). While pre- and post-test studies have been able to capture changes that take

place in a short period of time, there is a suggestion that an outdoor education course's value appreciates over time (Hattie et al., 1997). For example, in a study of 49 California 4th and 5th graders, many students electronically journaling through blogs during camp sessions discussed overcoming challenges, while blog posts four to seven weeks after the trips described newfound independence and self-reliance (Ardoin, DiGiano, O'Connor, & Holthius, 2015). There is a need to avoid basing conclusions on post-trip euphoria (Scrutton & Beames, 2015) and instead capture eventual attitudinal and behavioral outcomes that manifest months or years after camping (D'Amato & Krasny, 2011).

**Practice: Providing Meaningful Metrics for Education Reform.** This study piloted and refined a survey instrument that can be used by outdoor education providers or school systems to measure the impacts of outdoor education. Data from this instrument can help outdoor education providers to improve program outcomes and findings from this research can be used to advocate for increased incorporation of outdoor education into K-12 public educational opportunities for all students.

# Chapter 3: Research Methods

## Research Questions

To understand the efficacy of outdoor education programs on student outcomes, the proposed research sought to address the following closely related research questions:

1. How does participation in an outdoor education experience relate to changes in campers' behavioral intentions toward environmental stewardship, civic engagement, and their level of academic motivation, as assessed prior to and after participating in the camp?
2. Related to this, what specific components of the outdoor education program relate to campers' reports of environmental stewardship, civic engagement, and academic motivation?
3. To what extent, if any, are changes in campers' reports of environmental stewardship, civic engagement, and academic motivation as a result of participating in an outdoor education program moderated by their sense of connectedness with nature, social connectedness, or self-efficacy?
4. To what extent, if any, are changes in campers' reports of environmental stewardship, civic engagement, and academic motivation as a result of participating in an outdoor education program moderated by campers' age, gender, socioeconomic status, race/ethnicity, or previous camping experience?
5. How do camp alumni retrospectively reflect on how their participation in an outdoor education program influenced their orientation toward environmental stewardship, civic engagement, and academic motivation?

## Research Design

Through this mixed methods study I hoped to provide evidence that could assist outdoor and environmental education practitioners in communicating the benefits of their programs to mainstream educational audiences (Creswell, 2014). During Phase1, I collected quantitative data from pre- and post-camp surveys of 795 campers, aged 8-17 (Table 1). During Phase 2, I interviewed 44 camp "alumni" aged 18-84 (Table 2). One obstacle to the expansion of outdoor education opportunities to more students is the perception by many of its own practitioners that its benefits are immeasurable. For example, pamphlets for both sites in this study use the word "magic" when describing what happens at their camps. Using a program evaluation approach, this study aimed to help outdoor educators more clearly see and measure relationships between program *inputs* – students and their demographic characteristics, *activities* – the camps' program components, *outputs* – affective states, and *outcomes* – behavioral intentions (Alkin, 2011). By employing a pre-test post-test comparison of campers' survey responses in addition to in-depth retrospective interviews about camp experiences, I gained insight into changes in participants' perceived feelings and behavioral intentions as a function of participating in camp programs.

## Research Sites

This study examined two outdoor education residential sites which provide overnight trips of four to seven days. Each site was chosen because it serves California's ethnically diverse students, ages 8-17, including a high proportion of students from low income urban areas. At both sites campers sleep in cabins of around ten students, supervised by high school or college-aged counselors. Campers and counselors eat meals in a dining hall and circulate through the day engaging in a variety of outdoor experiential learning activities led by naturalists or specialists. Both sites have been running relatively consistent camp programs since the advent of the modern

environmental education movement in the 1970's, providing a substantial alumni pool from which to draw for retrospective interviews.

**Site 1: College Camp** This summer program series serves approximately 1200 students from a major metropolitan region during seven sessions. Having been in operation for more than 80 years, the program focuses on providing opportunities for university students to serve as mentors to underprivileged youth, for youth to become volunteers, and for volunteers to become leaders. Each of its summer sessions explored a different community interest, such as college preparation, healthy lifestyles, or African American identity. Students participated in activities including hiking and climbing a tower built on site for that purpose. Camp's operations were recently evaluated for their ecological impacts on water, energy, and waste – but sustainability is not part of the formal curriculum. The site was chosen for its enduring success in attracting volunteers and campers, its robust alumni network and its cultural stability over multiple decades. The current campers surveyed were all ages 8-17 and all of their families qualify for the federal free and reduced lunch program. Special programs for older campers aged 15-17 focused on wilderness backpacking, rock climbing, and providing community service at camp through facilities upgrades and maintenance and through mentoring of younger campers.

**Site 2: Outdoor School.** This school year program serves approximately 7,500 students from 95 different metropolitan, suburban, and rural schools at three residential camp locations. This study's surveys and interviews focused on the work at two of them, renamed Location A and Location B. Having been in operation for almost 40, the program at all locations is centrally managed and focused on developing participants' understanding of science and personal connection with nature. Each of its sessions has the same major program components: nature hikes with ecology content, town hall meetings to debate an environmental management issue, a

dance, songs, and organic gardening. The campers surveyed, aged 8-14 in 5th and 6th grades, included students from a range of socio-economic statuses and school types – public, magnet, and private.

## Procedures

### Phase 1: Current Camper Surveys

***Sample Recruitment.*** Participants were eligible for participation by virtue of their enrollment in outdoor education camp programs conducted by the study sites. The total sample size for campers was 795 ($n$ = 116 for Site 1 and $n$ = 679 for Site 2; Table 1). Sample sizes vary due to unanswered survey questions by many campers. This is likely large enough to overcome the low statistical power resulting from low sample sizes that Scrutton and Beams (2015) critique in their meta-analysis of outdoor education research to date. At College Camp, students from one of the seven sessions were surveyed. Camp staff indicated that this was a typical group of students in age, background, and previous camping experience. While there was a thematic focus on fitness and nutrition, this altered the framing of activities, but did not alter the program itself. For Outdoor School, students from seven different sessions during a five-week period were eligible. This time period was chosen upon the advice of staff who said it provided a generally representative sample of the range of student demographics and school characteristics.

***Data Collection.*** Data collection at College Camp occurred in August 2016, and at Outdoor School from October to November 2016. In keeping with the body of work in the field, the primary data collection method was be pre- and post- camp surveys (Scrutton & Beames, 2015). Paper and pencil surveys were administered as part of the instructional program by camp staff members. In order to reduce pressure students may have felt to respond or answer positively, counselors for each unit within the camp did not administer surveys to their own

Table 1

*Sites 1 and 2: Survey Participant Demographics*

| Demographic Variable | Site 1<br>n = 116 | Site 2<br>n = 769 | Total<br>n = 795 |
|---|---|---|---|
| **Gender** | | | |
| Female | 49 | 260 | 309 |
| Male | 35 | 232 | 267 |
| Total Valid | 84 | 492 | **576** |
| Missing | 32 | 187 | 219 |
| **Age** | | | |
| 8-11 | 15 | 460 | 475 |
| 12-14 | 58 | 33 | 91 |
| 15-17 | 12 | | 12 |
| Total Valid | 85 | 493 | **578** |
| Missing | 31 | 186 | 217 |
| **Camping Experience** | | | |
| 0 Times | 24 | 148 | 172 |
| 1-2 Times | 31 | 125 | 156 |
| 3+ Times | 28 | 218 | 246 |
| Total Valid | 83 | 491 | **574** |
| Missing | 33 | 188 | 221 |
| **Race or Ethnicity** | | | |
| Asian | 14 | 164 | 178 |
| Black | 22 | 10 | 32 |
| Latino | 29 | 46 | 75 |
| White | 4 | 66 | 70 |
| Multi | 11 | 117 | 128 |
| Other | 6 | 84 | 90 |
| Total Valid | 86 | 487 | **573** |
| Missing | 30 | 192 | 222 |
| **Socioeconomic Status** | | | |
| Low | 116 | 262 | 378 |
| Medium | | 180 | 180 |
| High | | 55 | 55 |
| Total Valid | 116 | 497 | **613** |
| Missing | 0 | 182 | 182 |

students. Approximately 20 minutes were designated on the first and last days of camp to complete the questionnaires at dining tables. All students were given a survey, but students who did not wish to participate placed blank surveys into the envelope provided on each table. Approximately 10% of the pre surveys and 7% of the post surveys were blank. Parents were informed in writing and in person by the camp staff of the nature and purpose of the information to be collected and assured that their children would have access to full participation in the camp's program, regardless of their participation in the study. No issues regarding informed consent were reported at any site.

### Phase 2: Interviews

***Sample Recruitment.*** The initial priority for interview participants was people who attended as campers during their youth, and secondarily to seek diversity in gender, race or ethnicity, and age (see Table 2). For College Camp, the camp's alumni coordinator distributed study information to about 5,000 people via email. Of these, 115 completed the Survey Monkey poll with contact and demographic information. The 30 that were eventually interviewed were selected to maximize demographic diversity of participants. For example, almost all the Black and Latino males who responded were interviewed, whereas many white and Asian females who responded were not interviewed, since data reached a saturation point after about 25 interviews. At Outdoor School, an alumni network did not exist so I used the snowball method to find participants. The camp's staff and board invited former campers, staff, and educators who have attended the camp program continuously. In turn, I asked those who replied to invite their contacts to the study. Although it was likely somewhat more representative of the staff over the years, this sample was not representative of the typical campers, as it consisted of 93% females and 79% white respondents. Repeated requests for more diverse contacts were not successful.

***Data Collection.*** The interviews took place on the phone from October 2016 to January 2017. During these interviews of approximately 30 minutes, I asked respondents to recount specific camp-related events to tap into their "episodic memories" rather than their generalized and possibly romanticized notions about childhood experiences (Creswell, 2014). Participants reflected years after their camp experiences, well out of the "euphoria effect" which may cloud perceptions immediately after camping (Scrutton & Beames, 2015).

Table 2

*Interview Participant Demographics*

| Demographics | Site 1 n = 30 | Site 2 n = 14 | Total n = 44 |
|---|---|---|---|
| **Gender** | | | |
| Female | 17 | 13 | 30 |
| Male | 13 | 1 | 14 |
| **Age** | | | |
| 18-29 | 12 | 2 | 14 |
| 30-39 | 8 | 7 | 15 |
| 40-49 | 5 | 3 | 8 |
| 51+ | 5 | 2 | 7 |
| **Camp Roles** | | | |
| Camper | 7 | 5 | 12 |
| Counselor | 25 | 6 | 31 |
| Naturalist/Specialist | 7 | 6 | 13 |
| Camp Staff/Board | 10 | 4 | 14 |
| Educator Chaperone | 0 | 2 | 2 |
| Average Years Involved | 4.87 | 9.43 | 6.32 |
| **Race or Ethnicity** | | | |
| Asian | 9 | 2 | 11 |
| Black | 2 | 1 | 3 |
| Latino | 9 | 0 | 9 |
| White | 12 | 11 | 23 |
| Multi | 6 | 0 | 6 |
| Other | 0 | 0 | 0 |
| **Site Location** | | | |
| A | | 6 | |
| B | | 10 | |

## Measures

**Field Tests.** Measure development was informed by quantitative and qualitative field testing. I tested draft survey questions with a sample of 334 socioeconomically disadvantaged public school students ages 10-17 after from September 2015 to March 2016. Students answered pre- and/or post-camp surveys online using Survey Monkey with one week before or after their camp experiences. Students were prompted to ask teachers and administrators in the room for help with questions they did not understand, and as a result of conversations with these educators, the language in five survey items was revised for clarity for English learners. Because both pre- and post-camp scores had high frequencies of the highest scores, revealing a possible ceiling effect, I increased the number of response choices in each scale from four to five.

As part of my regular employment at that time, I qualitatively coded 88 essays from 16-17-year-old public school students who wrote about the development of their personal land ethics for a class assignment after a recent camping trip. While this informal method, prone to social desirability bias, is not appropriate for formal research, it did substantiate the importance of specific outdoor education program components in students' stewardship orientations. Two survey item additions were made as a result of overwhelming student response – the inclusion of experiences with non-living parts of nature (such as wind or water) and the inclusion of inspiration from the beauty or power of nature as a form of connectedness with nature.

### Phase 1: Current Camper Surveys

See Appendix C for the Questionnaires and Appendix D for the Survey Crosswalk.

***Inputs - Camper Characteristics.*** During the pre-camp survey, campers identified their first name, last initial, birth month and year, gender (including an option for "other/please describe,") and race/ethnicity. Categories for race/ethnicity were identical with California

Department of Education's accountability system to allow for disaggregation of data by subgroups relevant to educators who wish to incorporate outdoor education into school plans and budgets. However, some of these categories had to be collapsed later for analysis because of small sample sizes. Campers were asked to indicate how many times they have been camping before (*0, 1, 2,3, 4 or more*) to explore the influence of cumulative exposure to the outdoors.

***Activities - Outdoor Education Program Components.*** During the post-camp survey only, campers were asked to provide information on their experiences engaging in common camp activities (Garst et al., 2011a; Hattie et al., 1997; Scrutton & Beames, 2015). Statements addressed activities including experiential learning (6 items, such as *"I had a memorable experience with a living thing like a plant or animal"),* skills (4 items, such as *"I did a scientific investigation or experiment"),* and knowledge (2 items, such as "*I learned about environmentally friendly actions or ideas*"). Students responded to the question "*How much do you agree with each of these statements about what you did at camp*?" by answering with a Likert type scale (*1 = totally disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree*). These same items were later re-grouped into slightly different categories in order to highlight for analysis the importance of socio-emotional learning activities that emerged from interviews.

***Proximal Outcomes – Student Attitudes.*** Pre- and post- camp assessments of connectedness with nature, social connectedness, and self-efficacy varied slightly in the stem. During the pre-camp survey, students were asked *"How much do you agree with each of these statements about <u>how you normally feel</u>?"* and in the post-camp survey, *"How much do you agree with each of these statements about <u>how you felt at camp</u>?"* by answering with a Likert type scale (*1 = totally disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree*).

*Connectedness with nature.* The items for connectedness with nature were drawn from a large body of research that validated the Connectedness With Nature (Mayer & Frantz, 2004) as well as my own field test studies. From the former, I drew the item "*I feel connected to the web of life,"* as it used student-friendly language. From a qualitative analysis of student essays at a field test site, I added, "*I felt inspired by the beauty or power of nature*," as some version of this sentiment was by far the most common way students (*n* =87) expressed their connection with nature resulting from outdoor education experiences. In the four item scales the pretest had α =.46 at Site 1 and α = .51 for Site 2. For the posttest, α =. 82 at Site 1 and α = .76 at Site 2.

*Social connectedness.* This consisted of the relationships among campers and between campers and adults. One item was drawn from the Social Connectedness Scale by Lee, Draper, & Lee (2001), "*I fit in well in new situations*." Other items, while aligned with the literature, were rephrased to be more student-friendly, including "*I feel respected and appreciated by the adults at school*" and "*I feel connected with other students at school"* for the pre-camp survey and "*I felt connected with the other student campers at camp*" in the post-camp survey. The four item scales were round reliable for the pretest with α =.79 at Site 1 and α = .76 for Site 2. For the posttest, α =. 79 at Site 1 and α = .77 at Site 2.

*Self-efficacy.* This was measured using items from the Genera.l Self-Efficacy Scale (Luszczynska, Scholz, & Schwarzer, 2005), which has been validated for use across cultures and with children. Items included "*I am confident I could deal well with unexpected situations*," and an item modified to exclude idiomatic language, "*It is easy for me to accomplish my goals*." The five item scales were round reliable for the pretest with α =.85 at Site 1 and α = .70 for Site 2. For the posttest, α =. 84 at Site 1 and α = .81 at Site 2.

***Distal Outcomes – Behavioral Intentions.*** Behavioral intentions were assessed by asking students the same questions pre- and post- camping experience beginning with the stem, "*How much do you agree with each of the following statements?"* Campers used Likert-scales (*1 = totally disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree*).

*Environmental stewardship.* This construct was measured using three items, one from the Environmental Responsibility Index (Powell, Stern, Krohn, & Ardoin, 2011b), "*I am interested in learning how to protect the environment*," and two I developed specifically related to behavioral intention, a key predictor of actual behaviors (J. E. Heimlich et al., 2013). Worded to address actions even young students may be able to participate in without adult support, these included, "*I will take actions to protect the environment*" and "*I will speak up to family or friends about protecting the environment."* The three item scales were round reliable for the pretest with α = .72 at Site 1 and α = .74 for Site 2. For the posttest, α =. 83 at Site 1 and α = .80 at Site 2.

*Civic engagement.* This construct was measured with a three item scale drawn entirely from the Environmental Responsibility Index (Powell et al., 2011b). These included, "*I am interested in working to make my community a better place*," and "*I can make change in my community*." Increasingly, those in charge of outdoor education camps, including leaders involved in my study, are interested in forging connections between what students experience at camp and in their communities, with the hope that positive intentions cultivated at camp will be transferred to students' actions back in their homes, schools, and communities. The four item scales were round reliable for the pretest with α =. 72 at Site 1 and α = .74 for Site 2. For the posttest, α =. 83 at Site 1 and α = .80 at Site 2.

*Academic motivation.* The scale for this construct drew its items from established scales. "*I am interested in learning about new subjects at school*" came from an Attitudes Toward

School survey (Powell et al., 2011b). "*I will graduate from high school*" and "*I will graduate from college*" came from the Morgan-Jinks Student Efficacy Scale (Jinks & Morgan, 1999). Because it decreased the reliability of the scale (pretest at $\alpha = .54$ and posttest at $\alpha = .58$), the item "*I am interested in learning about new subjects at school*" was removed, and the scale was re-titled Academic Aspiration. The two item scales were round reliable for the pretest with $\alpha = .88$ at Site 1 and $\alpha = .81$ for Site 2. For the posttest, $\alpha =. 85$ at Site 1 and $\alpha = .86$ at Site 2.

**Phase 2: Alumni Interviews**

The purpose of alumni interviews was to determine how camp alumni perceived the impacts of their camp experience at varying time intervals from their childhood camp experiences, if applicable, and at various life stages, as adults in their 20's, 30's and 40's. (See Appendix E for the Interview Protocol.) The protocol began with general questions such as "*What were some of your most significant experiences at camp?"* followed by "*Why where these experiences significant to you?"* To address longer term impacts, participants were asked, "*What effects do you think your camp experiences have had on you or your life?"* and "*How, if at all, have your memories, feelings, or thoughts about camp changed over time?"*

**Data Analysis**

Survey data was entered by hand into Excel, transformed, and analyzed using SPSS. My primary dependent variables were the changes in self-reported environmental stewardship, community service, and academic aspiration. The original intention was to combine survey responses across sites, but after preliminary analyses, the two sites were separated. First, sample sizes for each site were very different from one another. I did not find statistical methods for overcoming this disparity and avoid having the Outdoor School's data ($n = 769$) overshadow College Camp's data ($n = 116$). Although the study sites were generally comparable in terms of

their physical locations and operational structures, I determined that there were also significant enough differences in programming and populations to warrant separate treatment. While students at College Camp were all socioeconomically disadvantaged youth who chose to come to camp over the summer, students at Outdoor School included almost all students within a grade level at schools which varied widely in affluence. College Camp delivered its community-building program through highly trained and motivated college students at a prestigious university, while Outdoor School's academically-focused programs were led by marginally trained high school students and recent college graduates with physical science degrees. Analyzing survey data separately for each site provided two distinct case studies for considering the relationships among variables at both camps and reflecting on each program's perceived efficacy.

I analyzed qualitative data using Dedoose software. First, I coded for each of the variables in the quantitative models above, paying special attention to explore and expand upon the meanings to participants of the potentially moderating constructs of connectedness with nature, social connectedness, and self-efficacy. After categorizing data in this way, I looked for connections among the variables and categories in attempt to come closer to the elusive goal of understanding causality (Creswell, 2014). I scoured the data again for evidence of discrepant evidence and negative cases (Creswell, 2014). Finally, I coded again for additional outcomes of outdoor education not yet accounted for in my model.

## Chapter 4: Findings - Site 1 – College Camp

### Study Site Description

Site 1, "College Camp," was founded in the 1930's as a university's student charity. Since then it has operated consistently, allowing about five hundred undergraduates to provide week-long camp sessions to more than twelve hundred underserved students each summer. Although the specific camp location has changed slightly over the years due to fires, each site was located in the pine mountains of southern California. The camp is staffed and led by undergraduates who train weekly throughout the spring to take on roles as counselors, activity specialists, and leaders. A small paid staff of three people maintains the nonprofit and alumni network throughout the year. Volunteers recruit campers from the metro area's socioeconomically disadvantaged areas, usually through partner community-based organizations.

The survey sample for this study was drawn from one camp session in August 2016, which was organized into fifteen units of about ten students each. Campers in all but one of these sessions were early adolescents aged 11-14 ($M = 12.68$, $SD = 1.87$), but one session of the older camper program took 15-17-year-olds backpacking on a 28-mile hike to local peaks. These were typical sessions for College Camp. The theme of physical fitness was used to frame activities but not it did not cause staff to deviate substantially from the traditional camp programming.

## Survey Results

### Proximal and Distal Outcomes

My first two research questions asked what, if any, were the perceived proximal and distal outcomes of camp experiences? Of the six outcomes studied, statistically significant pre to post survey changes were found in just two outcomes: social connectedness and connectedness with nature (Tables 3 and 4). Mild to moderate positive correlations were found among five of

the six outcomes (Table 5). The academic aspiration scale suffered from ceiling effects, so scores started and remained high from the pre to post surveys. The two most robust correlations were with social connectedness; it was moderately correlated with shorter term self-efficacy ($r = .63$, $p < .000$) and longer term environmental stewardship ($r = .53$, $p < .000$). Self-efficacy was also correlated with civic engagement intentions ($r = .55$, $p < .000$). Taken together, these data indicate that changes to campers' mindsets do occur at camp, and that there is likely a relationship between the proximal and distal outcomes.

Table 3

*Site 1: Pre- to Post- Survey Means for Distal and Proximal Outcomes - Paired Sample T Test*

| | Outcomes | Pre | | | Post | | |
|---|---|---|---|---|---|---|---|
| | | n | Mean | SD | n | Mean | SD |
| Proximal Outcomes | Connectedness with Nature | 87 | 10.61 | 2.58 | 109 | 11.27 | 2.64 |
| | Social Connectedness | 94 | 15.54 | 2.88 | 106 | 16.32 | 2.86 |
| | Self-Efficacy | 98 | 11.34 | 2.40 | 106 | 11.80 | 2.29 |
| Distal Outcomes | Environmental Stewardship | 96 | 11.01 | 2.42 | 111 | 10.88 | 2.67 |
| | Civic Engagement | 91 | 14.64 | 3.52 | 110 | 15.18 | 3.07 |
| | Academic Aspiration | 96 | 9.28 | 1.29 | 113 | 9.37 | 1.27 |

Table 4

*Site 1: Changes in Pre- to Post- Survey Responses for Distal and Proximal Outcomes - Paired Sample T Test*

| | Outcomes | n | Mean Change | SD | t | df | p |
|---|---|---|---|---|---|---|---|
| Proximal Outcomes | Connectedness with Nature | 86 | **0.57** | 2.37 | 2.23 | 85 | .029* |
| | Social Connectedness | 88 | **0.95** | 3.15 | 2.85 | 87 | .006** |
| | Self-Efficacy | 89 | 0.45 | 2.59 | 1.64 | 88 | .105 |
| Distal Outcomes | Environmental Stewardship | 93 | -0.23 | 2.05 | -1.06 | 92 | .292 |
| | Civic Engagement | 87 | 0.24 | 2.75 | 0.82 | 86 | .416 |
| | Academic Aspiration | 94 | 0.02 | 1.18 | 0.17 | 93 | .862 |

Table 5

*Site 1: Correlations Among Proximal and Distal Outcomes*

| Outcomes | 1 (ES) | 2 (CE) | 3 (AA) | 4 (CN) | 5 (SC) | 6 (SE) |
|---|---|---|---|---|---|---|
| 1. Environmental Stewardship | - | | | | | |
| 2. Civic Engagement | **.485**** | | | | | |
| 3. Academic Aspiration | **.228*** | .181 | | | | |
| 4. Connectedness with Nature | **.309**** | **.399**** | -.008 | | | |
| 5. Social Connectedness | **.525**** | **.520**** | .137 | **.437**** | | |
| 6. Self-Efficacy | **.485**** | **.545**** | .194 | **.423**** | **.628**** | - |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

**Program Components**

My third research question asked to what extent specific camp program components were associated with perceived changes in proximal or distal outcomes. On the post survey, students were asked to state the degree to which they participated in various activities at camp. Although the planned activities were similar for each unit of campers, their counselors played a role in determining the frequency and duration of some activities, such as small group discussions. At Campers reported the highest participation on team building games or challenges, small group conversations, and learning sustainability concepts (Table 6).

This is important because program components were found to be correlated differently with various outcomes (Table 7). For example, team building showed the most correlations with all outcomes except for environmental stewardship. Overall, program components in the socio-emotional learning category were all mild to moderately associated with social connectedness and self-efficacy. Performing a job or leadership role had the strongest correlation of any program component in the study, being associated with social connectedness ($r = .52$, $p < .000$). Given the camp's focus on developing strong mentoring relationships and its ethic of service,

these data are not surprising. In conjunction with interview data presented later, they indicate alignment between the camp's mission and its programming.

These data also indicated that camp may have increased peoples' concern for nature, even without strong intentional programming on the topic. Connectedness with nature was one of only two statistically significant pre to post survey score changes ($M$ = +.57, $p$ = .029; Table 4). Three out of four of the socio-emotional learning components were positively correlated with increased connectedness with nature. Learning sustainability concepts received the third highest participation rating ($M$ = 3.93 out of 5) and relatively high correlations with social connectedness ($r$ =.47, $p$ < .000) and environmental stewardship intentions ($r$ = .27, $p$ = .011). Documents and interviews indicated that camp staff did not focus on environmental awareness; nevertheless, these data show that camp may have influenced campers' immediate orientations to nature.

Table 6

*Site 1: Program Component Participation Means (1-5 Scale)*

| Program Components | n | Mean | SD |
|---|---|---|---|
| **Outdoor Experiential Education** | | | |
| Wilderness Setting | 112 | 3.63 | 1.10 |
| Living Thing | 113 | 3.66 | 1.16 |
| Non-Living Things | 114 | 3.74 | 1.12 |
| Physical Challenge | 111 | 3.82 | 1.04 |
| Solo Time | 110 | 3.13 | 1.31 |
| **Socio-Emotional Learning** | | | |
| Team Building | 113 | 4.47 | 0.72 |
| Group Discussion | 111 | 4.23 | 0.96 |
| Community Issues | 112 | 3.71 | 1.02 |
| Job or Leadership | 113 | 3.64 | 1.20 |
| **Science & Sustainability** | | | |
| Knowledge | 110 | 3.24 | 1.20 |
| Investigation | 109 | 3.00 | 1.13 |
| Concepts | 107 | 3.93 | 0.84 |
| Practices | 109 | 3.90 | 0.88 |

Table 7

*Site 1: Correlations in Program Component Participation and Pre-Post Outcome Changes*

| Program Component | Proximal Outcomes | | | Distal Outcomes | | |
|---|---|---|---|---|---|---|
| | Connected-ness with Nature | Social Connect-edness | Self-Efficacy | Environ-mental Steward-ship | Civic Engage-ment | Academ-ic Aspira-tion |
| **Outdoor Experiential Education** | | | | | | |
| Wilderness Setting | .192 | **.225*** | .060 | **.224*** | -.017 | .138 |
| Living Thing | .179 | **.263*** | .072 | .185 | -.051 | .107 |
| Non-Living Things | .147 | .177 | -.020 | .027 | -.163 | .146 |
| Physical Challenge | .084 | **.402**** | .118 | **.253*** | .152 | .040 |
| Solo Time | .162 | **.273*** | .104 | .133 | .106 | .128 |
| **Socio-Emotional Learning** | | | | | | |
| Team Building | **.283**** | **.403**** | **.282**** | .187 | **.263*** | **.258*** |
| Group Discussion | .165 | **.342**** | **.224*** | .223* | **.230*** | .185 |
| Community Issues | **.287**** | **.344**** | **.257*** | .181 | .137 | .131 |
| Job or Leadership | **.382**** | **.522**** | **.367**** | **.230*** | .163 | .093 |
| **Science & Sustainability** | | | | | | |
| Knowledge | .166 | .162 | .132 | .080 | -.038 | .134 |
| Investigation | .180 | .207 | **.244*** | -.004 | .047 | .197 |
| Concepts | .120 | **.467**** | **.260*** | **.269*** | .184 | .197 |
| Practices | .152 | **.300**** | .198 | **.227*** | .134 | .187 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

**Demographic Variables**

My fourth research question asked to what extent proximal or distal outcomes of camp were affected by campers' demographic traits? Using T Test and Analysis of Variance methods, I found almost no statistically significant differences in camp outcomes based on age, gender, race or ethnicity, socioeconomic status, or previous camping experiences (Tables 8 and 9). A Bonferroni post hoc test showed that Asians reported a decrease in connectedness with nature that was statistically significant compared to people identifying as more than one race ($p$ = .048). The overall picture is of camp's effects being distributed evenly among all types of campers.

Table 8

*Site 1: Mean Changes in Proximal Outcomes by Demographics*

| Demographic Variable | Connectedness with Nature | | | | | | Social Connectedness | | | | | | Self-Efficacy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean Change | SD | t/F | df | p | N | Mean Change | SD | t/F | df | p | N | Mean Change | SD | t/F | df | p |
| **Gender** | | | | | | | | | | | | | | | | | | |
| Female | 49 | 0.49 | 2.44 | -.49 | | .628 | 53 | 1.02 | 3.05 | .50 | 68 | .622 | 53 | .40 | 2.09 | -.19 | 52 | .850 |
| Male | 35 | 0.74 | 2.28 | | 76 | | 34 | .68 | 3.21 | | | | 35 | .51 | 3.27 | | | |
| **Age** | | | | | | | | | | | | | | | | | | |
| 8-11 | 15 | 0.47 | 2.85 | .24 | 2, | .786 | 16 | -0.31 | 2.73 | 3.32 | 2, | .041 | 17 | -0.18 | 2.63 | .69 | 2, | .506 |
| 12-14 | 58 | 0.48 | 2.38 | | 82 | | 58 | 1.07 | 3.17 | | 83 | | 58 | 0.60 | 2.28 | | 85 | |
| 15-17 | 12 | 1.00 | 1.86 | | | | 12 | 2.67 | 2.67 | | | | 13 | 0.77 | 3.75 | | | |
| **Camping Experience** | | | | | | | | | | | | | | | | | | |
| 0 Times | 24 | 0.92 | 2.59 | .25 | 2, | .780 | 24 | 0.00 | 2.54 | 2.00 | 2, | .142 | 24 | -0.21 | 1.47 | 1.27 | 2, | .285 |
| 1-2 Times | 31 | .48 | 2.82 | | 80 | | 30 | 1.33 | 3.61 | | 83 | | 33 | .79 | 2.63 | | 85 | |
| 3+ Times | 28 | 0.54 | 1.62 | | | | 32 | 1.56 | 2.83 | | | | 31 | 0.74 | 3.07 | | | |
| **Race or Ethnicity** | | | | | | | | | | | | | | | | | | |
| Asian | 14 | -0.43 | 1.40 | 2.45 | 5, | .041 | 14 | 0.71 | 1.86 | 1.22 | 5, | .306 | 13 | -0.08 | 1.50 | .48 | 5, | .791 |
| Black | 22 | -0.05 | 2.75 | | 80 | | 23 | 0.13 | 2.49 | | 82 | | 22 | -0.05 | 1.36 | | 83 | |
| Latino | 29 | 0.66 | 2.00 | | | | 29 | 1.31 | 3.58 | | | | 29 | 0.90 | 3.35 | | | |
| White | 4 | 1.75 | 0.96 | | | | 4 | -0.75 | 3.59 | | | | 4 | 0.50 | 1.73 | | | |
| Multi | 11 | 2.36 | 3.23 | | | | 11 | 2.55 | 4.55 | | | | 12 | 0.83 | 3.66 | | | |
| Other | 6 | 0.67 | 1.51 | | | | 7 | 1.14 | 1.68 | | | | 9 | 0.44 | 2.13 | | | |
| **Socioeconomic Status** | | | | | | | | | | | | | | | | | | |
| Low | 86 | .57 | 2.37 | | | | 88 | .95 | 3.15 | | | | 89 | .45 | 2.59 | | | |

Table 9

*Site 1: Mean Changes in Distal Outcomes by Demographics*

| Demographic Variable | **Environmental Stewardship** | | | | | | **Civic Engagement** | | | | | | **Academic Aspiration** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | Mean Change | SD | t/F | df | p | N | Mean Change | SD | t/F | df | p | N | Mean Change | SD | t/F | df | p |
| **Gender** | | | | | | | | | | | | | | | | | | |
| Female | 55 | -0.44 | 1.80 | -.95 | 1, 90 | .343 | 52 | -.08 | 2.60 | -.91 | 1, 64 | .366 | 54 | .13 | .91 | 1.03 | 1, 90 | .305 |
| Male | 37 | -0.03 | 2.30 | | | | 34 | .65 | 2.96 | | | | 38 | -.13 | 1.51 | | | |
| **Age** | | | | | | | | | | | | | | | | | | |
| 8-11 | 16 | -.63 | 2.45 | .383 | 2, 88 | .683 | 13 | .38 | 2.72 | .618 | 2, 82 | .542 | 17 | -.24 | 1.56 | .602 | 2, 89 | .550 |
| 12-14 | 61 | -.11 | 1.86 | | | | 58 | .09 | 2.81 | | | | 62 | .05 | .89 | | | |
| 15-17 | 14 | -.29 | 2.58 | | | | 14 | 1.00 | 2.72 | | | | 13 | .23 | 1.83 | | | |
| **Camping Experience** | | | | | | | | | | | | | | | | | | |
| 0 Times | 25 | -.92 | 1.61 | 3.05 | 2, 88 | .052 | 22 | -.68 | 2.48 | 2.01 | 2, 82 | .141 | 24 | .04 | 1.71 | .00 | 2, 87 | .996 |
| 1-2 Times | 33 | -.24 | 2.18 | | | | 32 | .75 | 3.08 | | | | 34 | .06 | 1.10 | | | |
| 3+ Times | 33 | 0.39 | 2.11 | | | | 31 | 0.52 | 2.39 | | | | 32 | 0.03 | 0.78 | | | |
| **Race or Ethnicity** | | | | | | | | | | | | | | | | | | |
| Asian | 14 | -0.21 | 1.58 | 1.17 | 5, 87 | .332 | 14 | -0.43 | 2.71 | 1.03 | 5, 81 | .406 | 14 | -0.29 | 1.38 | 1.00 | 5, 88 | .425 |
| Black | 24 | -1.00 | 1.38 | | | | 22 | -0.18 | 2.40 | | | | 24 | -0.13 | 0.61 | | | |
| Latino | 31 | -0.03 | 2.50 | | | | 30 | 0.33 | 2.75 | | | | 32 | 0.34 | 1.38 | | | |
| White | 4 | 0.75 | 1.71 | | | | 4 | -0.75 | 2.63 | | | | 4 | -0.25 | 0.50 | | | |
| Multi | 12 | 0.42 | 2.19 | | | | 9 | 1.67 | 3.94 | | | | 12 | 0.17 | 1.59 | | | |
| Other | 8 | -0.13 | 2.36 | | | | 8 | 1.13 | 2.17 | | | | 8 | -0.38 | 0.52 | | | |
| **Socioeconomic Status** | | | | | | | | | | | | | | | | | | |
| Low | 93 | -.23 | 2.05 | | | | 87 | .24 | 2.75 | | | | 94 | .02 | 1.18 | | | |

## Interview Results

### Distal Outcomes

This study sought to discover, according to campers, what are the perceived effects of their outdoor education experiences on their behavioral intentions toward environmental stewardship, community service, and academic motivation?

**Environmental stewardship.** Overall, environmental stewardship was not a primary focus of College Camp's programs or goals. In interviews, camp alumni described environmental stewardship by saying, "it wasn't anything we talked about," though in some years, one of the weeklong sessions was devoted to environmental issues. Three volunteers asked to work as nature specialists described receiving minimal support. One reported that when she was asked to serve in this capacity, she stated, "I'm like, 'I'm not going to be nature and fishing. No one freaking likes nature and fishing,'" referring to campers who avoided this rotation.

Although stewardship was clearly not the focus of camp, some alumni ($n$ = 8) still reported an increased awareness and appreciation of nature because of camp, particularly those who attended or volunteered during the older campers' backpacking program. Exposure to relatively pristine wilderness and sustainable practices such as "Leave No Trace" camping made alumni more mindful. As one recent backpacker explained, "Well we were able to see a lot of great sights, but there were a few that did have a little bit of trash around, that was like evidence, so you could tell that humans had been around and it wasn't as pretty as the ones that were untouched." A camper who considered herself a city girl recounted, "Exposure…especially to the untouched wild. That was a huge piece of my really understanding potentially what was out there and appreciating it more. Definitely, I'd gone from not really being an environmentalist at all, to overtime, it's probably one of my biggest concerns."

For a handful of camp alumni, this appreciation translated into stewardship actions. Three alumni mentioned personal pro-environmental behaviors such as picking up litter or using less water during showers when they were back at home. Two interviewees shared these messages with their peers while in high school because of camp. Three alumni mentioned donating to conservation-related charities. A former camper and volunteer, a person of color, reported regarding his concern for National Parks,

> I donate to a local charity focused on conservation. I don't know if I necessarily would have if I wasn't involved in College Camp as actively and hadn't done that [backpacking] program and really appreciated what we have and what we could lose by not preserving it … Having now experienced it, having seen just how peaceful and transformative it is for me personally let alone for students and young people that might not have ever had that opportunity, I think motivates me even more so to donate to those causes.

In the surveys, changes in environmental stewardship were significantly correlated with changes in civic engagement ($r = .49$, $p < .000$), perhaps since civic engagement, more so than personal behavior change, played such a large role in the overall camp culture, as discussed below.

**Civic engagement.** In this study, civic engagement is conceived of as voluntary, unpaid actions for the "greater good." Interview data show that College Camp had meaningful perceived impacts on participants over time. Most college-aged volunteer counselors reported that they came in with a predisposition to help others, but their experiences at camp exposed them to the situations their underprivileged campers faced and provided a long-lasting sense of purpose in contributing to social justice causes through involvement with camp and other service organizations, through charitable donations, and through political action.

*Giving back to camp.* An outstanding theme in the interviews was that of "giving back," to camp, particularly as people moved from one role at camp to another. All seven of the people who had been campers as youth later volunteered at camp or had immediate plans to do so, including two who are currently in community colleges hoping to transfer to the camp's host

university. Almost every person who was interviewed had served in multiple capacities at camp, often over a span of about five years, moving from counselor, to leadership, to staff, and for five participants, to volunteer work on the board. Seven participants mentioned the desire to pass along the camp's culture to the next generation. The distinguishing feature of this culture was "other-directedness." Interviewees frequently described the lack of ego required to invest in this work, and appreciation for their volunteer peers who were good-hearted people who wanted to help those less fortunate than themselves. Interviewees frequently mentioned the older camper program, in which high school students performed essential maintenance duties at camp, while simultaneously serving as role models for younger campers and being mentored by college-aged volunteers. Such integrated experiences created a rich and sustained network of service and learning and mutual respect among young people at camp each summer and through the years.

*Broader impact of camp*. Comments were about evenly divided regarding the overall importance of College Camp for creating change within the broader community. For some volunteers, College Camp seemed like it went very deep. "It was the first time I was engaged in something where I saw a path to how I could actually impact the fabric of society basically" recalled one woman. A man involved in the university's Black Greek system recounted,

> I got a lot of criticism that…you're providing dessert without dinner. You're just giving them this happy feel good experience, but …What's the lasting effect? We had some pretty heated debates about that back in the day… Some of these guys that I pledged with were from the neighborhoods that a lot of these kids came from. They would've been the perfect mentors for a lot of these kids; but because they were in the system, their philanthropy was, 'We're gonna go work at the soup kitchen one weekend. Or we're gonna do a clothes drive.'…I don't think they understood camp enough to realize just how big of a philanthropic organization it was and the effect and who the kids were.

On the other hand, five alumni expressed a sentiment that, "I realized that camp is amazing and does a lot, but camp is never near the answer. The kids are gonna need so much more than that."

Such realizations often led participants to pursue further opportunities to serve similar populations through other forms of civic engagement.

*Working with children*. From interviews, it was very clear that working directly with children at camp developed volunteers' passion for social justice ($n$ = 11), their desire to serve children ($n$ = 6), and their sense of purpose in pursuing related goals ($n$ = 13). One alumna said her experiences volunteering had "contributed to a greater sense of compassion for people" and another explained her experience of, "having engaged with people from various socioeconomic statuses, various backgrounds, it just opened my eyes to the world in a way that I don't think really any experience had up until that point. I think just becoming much more civic minded." Alumni reported contributing unpaid time to such causes as Habitat for Humanity, the Boys and Girls Club, Boy Scouts, City Year, a church youth group, a pediatric medical clinic, afterschool programs, schooling in developing nations, and mentoring a high school civics competition.

*Financial contributions.* About a quarter of the respondents mentioned financial contributions as a form of civic engagement. As part of their volunteer commitment, undergraduates collected money to fund camperships, allowing families to make minimal tuition contributions. One said, "I also learned how to fund raise. I always raised thousands of dollars every year and it made me feel really good about myself. Again, it just inspired that spark of public service and trying to make things better for others." Some older volunteers mentioned sporadically sending checks back to the College Camp when prompted by friends. Four respondents wanted to go beyond monetary donations and give of their time to communities.

*Politics.* For some alumni, direct political involvement was an important form of civic engagement they feel resulted from camp. One explained, "It's hard to say it was definitely College Camp but I think that my experiences made me lean much more liberal in terms of

politics and the way I relate to my civic duty to participate social action." Alumni reported holding appointed and elected offices, influencing town council decisions, lobbying for legislation, and demonstrating on behalf of Latinos and immigrants. One older alumnus admitted the camp culture was partially a "carryover from the – I don't want to say – hippie days of the sixties, but …" A younger volunteer stated succinctly, "Every kid had a story of injustice." So, while surveys did not show statistically significant increases in civic engagement after a week of camp, continued engagement with camp did influence important changes, at least as perceived by program participants who were interviewed later in life. Often, the desire to help others was so strong that alumni said it dominated their own college and career pathways.

**Academic aspiration and college and career pathways.** While survey data failed to capture meaningful information on changes in academic aspiration after a week of camp, interview data revealed more complex and systemic ways in which camp had lasting perceived impacts on high school undergraduate and graduate education, and career development, particularly in the education and non-profit professions.

*High school.* Interviewees indicated throughout the years the formal college-preparation program ranged from mere couple hour rotations to the theme of week-long sessions, but it was the ongoing relationships that had a more memorable impact on college success. Volunteer counselors understood that "it was really important to really try to emphasize that we were role models. We were in many extreme cases the only contact that they [campers] had ever had with a college student or with anyone affiliated with a college" and that they could "show a young person that 'Hey, it's cool to go to college and get a degree and to progress to bigger wishes and bigger dreams.'" "More specifically, as one explained, "I'm a Mexican American girl and working with the kids...I saw myself in a lot of them…[This] helped me connect to the students

and show them that people of color can succeed and can go into education and that we can afford to go to college." From a recent high school aged camper's point of view,

> I never really felt an impact academically until my third year, where my counselors knew that I was getting close to my final years of high school. They were asking me here and there about how things had been going, how college apps had been going. I feel that that was very helpful, because it made me really want to push myself through those last schooling years.

In addition to the use of camp anecdotes in application essays and community service hours for the older camper programs, interviewees reported developing from camp self-confidence and leadership skills that benefitted them throughout high school. Volunteers regularly reported staying in touch with a handful former campers. Because most respondents' time at camp spanned around five years, many people were able to observe and verify the growth of their campers as they transitioned from high school to college.

*College.* Volunteer alumni reported that camp improved their own college experience by providing a sense of purpose for their studies or a sense of community for their social justice work. For some students, this purpose tied directly to their majors. One said

> It's allowed me to understand other people a lot more. I'm an anthropology major. I love studying humans and understanding processes and things like that and you see here these kids are affected by these larger socio, political, historical processes either in their neighborhood or in the resources that they have in school or just home life.

One young woman claimed "it ironically was the semester that I had the best grades. Doing College Camp gave me a sense of purpose that was beyond just 'Oh yeah, I'm a student, I go to school, and I get good grades.'" A current Latina college student explained, "For me, to realize all these kids wanting to do better for the sake of themselves and for their family, it made me motivated. It reminded me why I went to school." For many, it was the social aspects of camp that mattered most. One recalled, camp "was really helpful to adjust to college and to feel like I had a sense of social belonging." At camp "you have a diverse group of people who wouldn't

normally be hanging out with each other or have something in common. Now they have something in common. You bond with all of those people and it ends up changing you." This bonding happened frequently because as one alum recounted,

> It put me in company with people that valued what I valued but just came from different places, so I never saw. It showed you that there is so much that's similar between people, irrespective of race, or religion or background or whatever. To me diversity and social justice have always been issues and camp is kind of the perfect storm of all of them.

*Graduate school.* Camp experiences left deep impressions on many alumni by guiding their graduate school work. One self-described middle class white woman explained how leading a camp session on nutrition led her to studies earning a PhD in public health.

> That's really when I started to learn about institutionalized racism and poverty and how health problems really aren't about personal choice. When you've got kids who have never seen or heard of most fruits and vegetables, how can you expect them to eat healthy when they have zero choice in the matter? Their parents oftentimes have zero choice in the matter. I learned about access issues and cost. Some kids, they only eat at school. That was something that I just ... I had no idea. I really thought that the childhood obesity epidemic was because parents were just choosing to give their kids junk food. I just really didn't know that this was a poverty issue.

Another alumna is currently researching how after school academic support programing is serving students of different ethnicities within the same school district. Direct understanding of children's struggles was a common theme throughout the interviews. "It tied me to a higher purpose for why I was pursuing medicine. Having a good basis of the kind of environment they're coming from, being so close to it and seeing how it's shaped them, it kind of helps you draw on that experience and keep feeling that passion." Personal connections with diverse campers and counselors left lasting impressions regarding the need for deep, systemic work on social justice, and the importance of post-graduate education as a valuable tool in this work.

*Non-profit careers.* College Camp had lasting career benefits for those who went on to other impactful work in non-profit management because it served as a model for organizational

leadership and provided real-world understanding of diversity issues. This was especially true for the many alumni who progressed through multiple roles at camp. Six interviewees were adamant about the importance of College Camp, making such claims as these: “I really do owe my work in the nonprofit field to my experiences in College Camp”; “I think as far as me as a leader, the program director position was I think a moment in my early, early professional career that really helped me develop my overall managerial skills, especially when working with volunteers”; “Everything that I learned from camp is completely applicable to almost every job. Not almost, *every single* job I've been in. Every position I've been in, in terms of being able to be a part of a team, lead a team” and “I think that absolutely unequivocally, the leadership skills that I have now I learned at camp - that's where I learned how to give feedback in ways that were effective but also supportive.” The games, ice breakers, and structured conversations around diversity were often adapted for use in other nonprofit settings. A nonprofit leader said, “Those are the things that I always have in my back pocket, as soon as I walk into a group of students or adults.” Many alumni echoed the sentiment that College Camp is a “really brilliant model because what you have in essence have is free labor that is not just doing the work, but also doing the fundraising …and when I think about other nonprofits where I’ve worked, it blows my mind.”

*Careers in education.* Camp helped develop a pipeline of much needed public school educators by awakening volunteers to children’s needs, by building skills in socio-emotionally responsive teaching, and by creating a supportive network as people entered the field. One said about her first experience at camp, “That's all I've been involved in is education with youth. It did create this ripple effect. There was kind of no turning back for me.” One started teaching because “getting to know [campers’] experiences stuck with me - I started minoring in education,” while for another it was “because the staff, the leadership team for both of my years,

and the top counselors that I respected so much all went to become teachers." According to someone who currently provides professional development for teachers, "the most effective teachers are the ones who have similar outlooks and personalities to what was developed in College Camp." Volunteers "learned to understand what behaviors were really manifestations of" and developed the "ability to put your ego aside and provide opportunities for kids to build their self-esteem and confidence." Many interviewees mentioned learning from campers about poor treatment in their schools; of these, five went directly into teaching in low-income neighborhoods. Three alumni currently work in after school or enrichment programs. Overall, College Camp encouraged people to enter careers working with children and to use the power of their relationships to further motivate and inspire youth in their care.

**Proximal Outcomes**

Next, this study sought to determine, to what extent, if any, are the effects of outdoor education program components moderated by students' self-perceptions of their connectedness with nature, social connectedness, or self-efficacy?

**Connectedness with nature.** At College Camp, alumni reported connecting with nature, sometimes reluctantly, largely through the change of perspective that came from getting away from the city. Ten interviewees mentioned appreciating nature, four of them claiming that camp converted them from "city kids" to outdoorsy-types. Being in nature made them feel peaceful, relaxed, and happy. Six mentioned a shifting awareness, to "all the different leaves and nature things that you wouldn't normally look at." "It is also a different kind of a space to be in. And to experience, and you know, you're not focused on like technology and all of that either to get through your day. So that gives you an opportunity to be creative, to be quiet, to not be running

around all the time." One person described how she connected with nature back in the urban environment as a direct result of camp.

> I will sit in the back yard and I will embrace the smell and embrace the trees and embrace the sky because ... my last session that I went to, we learned everyone needs a moment to themselves. You need to ... no matter what you do, whether you meditate, whether you sit and close your eyes for five seconds ... we walk somewhere deep in the woods and watch the stars and did this activity. Ever since then I'll take ten to thirty minutes out of my day and I'll just sit and relax and not think about any of the problems that I have.

Five alumni mentioned being almost forced to appreciate nature. Upon being "thrown into the nature part" of the backpacking program, "you're actually hiking, and sleeping in nature you *have to* be best friends with nature or else the experience isn't great for you if you're not appreciating what's around you. 'Cause if not you're just walking for like four days." "It's just being up there in the mountains for that amount of time, you *can't help* but to cherish it a little bit more." Such comments may partially explain the positive survey correlations between connecting with nature and the longer-term outcomes of environmental stewardship ($r = .31$, $p < .004$) and civic engagement ($r = .40$, $p < .000$). When people feel an emotional connection with nature, and the ability to gain personally from it, they may be more inclined to want to protect it.

Interviews show that when people are made to connect with nature, they also connect with each other. Correlations between connectedness with nature and social connectedness ($r = .44$, $p < .000$) may be partially explained by interviewees who connected the freedom from distractions, the positive emotions created by nature contact, and the bonding that took place among campers. As one counselor described both camp and her current work overseas with children, "putting them somewhere in a natural environment that's beautiful, that has fresh air, and everybody is just more relaxed when they're in nature. I think that lends itself to learning and learning and working together." Another alumnus insightfully explained,

> Because it is so different, these kids feel vulnerable in a way that they don't normally feel vulnerable, and I also think they feel safe in a way that some of them don't always feel safe…I think there's a healing aspect of it where people feel connected in a way that you wouldn't normally get. I think the vulnerability of being out in nature, in some ways so unprotected, but then also totally removed from the city influence. There's no cars to worry about. There's no other people to worry about. You know everyone there…this element of it being in this seemingly wild place that is liberating for a lot of people, and also very calming and healing.

Overall, interviews reveal that connecting with nature was a challenging change from city life for campers and counselors alike, but one that increased well-being and strengthened social bonds.

**Social connectedness.** The thirty interviews coalesced around a consistent theory of change regarding the important relationship between social connectedness and self-efficacy. By all accounts, College Camp spurred "a lot of growth and development," personally and socially. Campers were removed from the struggles of their daily lives. With a new group of people, they engaged in novel and fun challenges that built camaraderie and trust. When issues from home came up, they had the benefit of a new perspective and a safe, supportive community to process them. When campers felt accepted by the group, their trust increased, and they allowed themselves to be pushed to accomplish more challenging tasks. When they succeeded, their confidence and self-efficacy increased. A counselor explained,

> The heavy emotional stuff is 1% of the total time, but it's a lot of the impact… That's also a key component of the way that people are out of their comfort zones doing really silly things that we don't normally do, like these ridiculous songs and games … That gets them in the mood where they feel like, okay, it's safe enough to play these games. I don't think this is what people consciously think, but I think sort of the subconscious process, okay, I'm here, I'm in this new place in the woods, it's totally different. I'm doing all these things I wouldn't normally do. We have a group of people who have been totally supportive so far, and now I have a chance to talk about my life. I think that's how a lot of this happens. Of course, the intentionality is behind it the whole way that whatever people need, whatever support they need, we're going to find it for them.

Among the activities most cited in connection to this bonding were physical challenges, performing arts such as skits and songs, and completing chores. By far the most commonly

mentioned safe space for processing challenges was “cabin time,” when counselors would lead semi-structured reflective conversations before sleeping at night. For almost a third of those interviewed, these conversations were the most significant or memorable experiences from all their years at camp – but always because of the insights they provided into other peoples’ struggles, not because of what they shared with the group about themselves.

Another highly consistent storyline was that of personal transformation at camp, and the ability to be seen differently by others in a more positive light. Numerous alumni recounted campers who acted tough or like they didn’t want to be there, at times presented behavioral challenges, and eventually became leaders. A “foundational idea” of College Camp culture is “Just understanding that underneath the façade that people have something good under there.” This message was taken to heart by counselors, who worked hard to build the trust of campers as they shed their city personas, adopted new camp names, and came to see that adults were there to support them. One said, “They couldn't really wrap their heads around that we were volunteering and that it wasn't a paid position… Once they trust that you are not out to get them, or trying to get them in trouble, there's a little bit of softening.” In a typical story,

> As the buses were pulling up, this one kid that yells out, 'Hey guys, that's where we're gonna be sleeping!' But in trash bins. The counselors were saying, ‘Ah no, I hope I don't get that kid.’ And sure enough he ends up in my unit. He was a little distant at first, but as the camp went along, he opened up, he turned out to be really nice. He was actually one of the sort of leaders of among the boys… A couple years later he happened to be in the very first [backpacking] session that we had. Proud to say it happened in my session.

For many alumni, the diversity encountered at camp was important in learning to set aside judgements and see the best in people from all walks of life. “When you share experiences with people of different backgrounds, and different economic status, and things like that, you just feel like you're able to connect to people regardless of where they come from or what their

background is." When people were appreciated by their peers and mentors, it likely increased their own self-esteem and self-confidence, both important to self-efficacy.

**Self-efficacy.** Self-efficacy is specifically a belief about one's own ability to complete a task. Interviews revealed that in addition to task-specific beliefs, camp increased participants' reflectiveness about themselves, their overall self-confidence, and in some cases, their willingness to take on greater challenges later in life. Counselors who were interviewed emphasized the importance of their own collective and individual efficacy in positively impacting the campers in their sessions. Eleven former volunteers marveled at how they were able to create, plan and run programming as college undergraduates. As one put it,

> You step back and look at it, it's pretty amazing. You have a bunch of 18, 19, 20, 21-year olds taking care of pre-teens for a week on their own. That's, when you say it out loud, that's pretty daunting. But, we all did it, and there were no major calamities and everybody had a good time and everybody was fed… It just gives you a lot of confidence that with a lot of preparation and teamwork you can accomplish a lot.

Counselors proudly recounted using teamwork to effectively deal with fires, bears, storms, power outages, medical emergencies, and campers who had experienced abuse and trauma. Most people interviewed ($n$ = 16) described how they came to believe that they had learned to work effectively with children effectively enough to have a positive influence on their lives.

Many campers also experienced revelatory personal transformations at camp, after successfully tackling new social and physical challenges. After living away from their families, trying new things, and learning about undiscovered strengths, they reinvented themselves as more competent people with a deeper understanding of their own potential.

> It was an emotional catharsis for many of them, both being in an outdoor environment for the first time and away from whatever was going on in their lives…Kind of coming to the sense of self to some degree…It provides an opportunity for people to be completely present with whatever is around them. If there's not a lot of distraction it also requires you to be present internally.

This opportunity to constantly reflect on one's growing abilities was reinforced by challenging but supportive social interactions. A former camper, an only child, stated,

> Being pushed out of my comfort zone and being forced to meet so many new people and students was really powerful in showing me that it in general is a safe space to explore different facets of who you are. There was some type of talent show where each unit had to put on a skit, which was entirely out of my comfort zone. Still that was liberating as a 12, 13-year-old to just go through that process and realize I didn't die.

Similar processes occurred for counselors. As one noticed regarding pre-camp training, "they start going to the weekly sessions, and they came in shy, were very serious. Over the time, they became much more open, willing to be playful, more committed, which is beautiful. Camp allows even adults to come out of their shell."

According to a fifth of the interviewees, the backpacking program was particularly effective in building self-efficacy, due to its wilderness location and the physical challenges it posed. Two surprising stories from counselors who were inspired by their campers emerged.

> Physically, I had never set this insurmountable goal or what seemed like an insurmountable goal, but I think after going through that experience and seeing the students do it and seeing how proud they were of going on this hike, it definitely shifted my mindset. I think now I actively look for difficult challenges to test my limits.

> I was the last person to finish and I vomited… I learned from [the backpacking program] that even though I was telling myself, 'Oh I can't do that. I'm not someone who can do a big hike, who likes physical challenges, or is fit' [it] made me realize…hiking is just putting one foot in front of another. So every time I'm training for half marathons I think to myself, 'It's all in the head because you know you can push yourself, you can do this.'

A pervasive theme throughout the interviews was a sense of accomplishment associated with camp memories. In many cases, overcoming one's camp challenges benefitted other younger people or those less fortunate. Volunteers knew that they did something hard, but worthwhile, and many went on to even more demanding and in-depth work with similar populations in their careers or volunteer work. Thus, the links between self-efficacy and civic engagement become clearer and show how proximal changes can provide the basis for bigger actions over time.

## Program Components

To make this study more useful for practitioners, I sought to determine according to campers, what role, if any, do outdoor education program components play in developing environmental stewardship, civic engagement, and academic motivation? Program components are broken into three categories, outdoor experiential learning, socio-emotional learning, and science and sustainability learning.

### Outdoor experiential learning.

***Wilderness setting.*** Three progressively "wilder" settings constitute the location of College Camp. The residential camp site is on a small dirt road in a National Forest. From here, some campers did an "overnight" where they hike about a mile to a nearby lake. Older campers used the site as a base, but spend most of their session backpacking in wilderness areas that they walk to. According to interviews, the most significant aspects of the wilderness setting were its contrast with life in the city and the novel experiences it provided. Simply escaping the city was psychologically important for many alumni because it removed pressures and distractions.

> I think there's a huge impact of the camp being away from the city, so it takes usually two hours by bus to get there…And so there's sort of this journey element to it. There's a transformative quality in and of itself of being on the bus for that long watching, passing by downtown … passing through … going up the windy mountain road, and driving for the final stretch that two miles of dirt road with the dust clouds coming up, and then suddenly the dust parts and you're there at camp.

Campers often "live in areas where there's a lot of light pollution and a lot of them, they don't go out at night because they don't live in neighborhoods where they feel safe doing that." Once, "they had to choose an alternate drop off location because there was a gang threat." At camp, however, kid could focus on "being yourself and not having to worry about looking a certain way, acting a certain way, thinking about how the family pressures …Being in nature and being away from all of that space and pressure of society is always like a relief."

Some campers were inspired by the wilderness setting to increase their environmental stewardship behaviors at home, providing insight into the correlation between this program component and that outcome ($r = .23$, $p = .032$). For example, one mentioned the "rule, which I still used in my house...if it's yellow, let it mellow, if it's brown flush it down. That kind of stuff started because at College Camp … it was part of the overall thinking about not wasting water." Older alumni recounted changes in water pumping, storage, and filtration at camp, located in a drought-prone region. A recent camper expressed a concern about ecosystem health with an awareness of water conservation strategies that resulted from his camp experiences.

> I think College Camp in general, because it's located in the forest, it really helps us open our eyes more to what's out there. Especially once I get back to the city, I realize how dead everything is … Just being up at camp reminds me that there's so much out there that is slowly dying off that we should really start paying more attention to.

More common were general comments that the backpacking trip "really opened my eyes to not just the environment how we have to leave no trace, and respect the environment," but there was no indication that such awareness led to any substantial behavioral change at home.

The wilderness setting provided novel challenges for campers to overcome, often as a group. "Some of them are totally overwhelmed by the insects and the sun and the heat and the rain and the dust." Regarding the overnights, "They all went to that lake, whether they liked it or not, they did that hike. It was a true outdoor experience. Some of the counselors too had never slept outdoors." Describing the older campers' backpacking trips,

> It's like a 50-pound pack, four days, three nights. So yeah, you get to appreciate the nature on the hike and actually walk by the river and see the mountains above you and all the trees surrounding you and whatnot, but then it's also hard and there's definitely a lot of times when my kids will want to stop … and they got a horrible sunburn and their packs were too heavy and they had blisters and small different things.

During such trips, to pitch tents, cook on fires or stoves, and other tasks, "they have to work together for it to work." After these excursions, "when they came back, it was almost celebrity

status, like, ‘Oh wow you guys hiked up to the top of the mountain. What was it like?’ Just gave them a little extra sense of pride and accomplishment.” This vignette helps explain the correlation between wilderness settings and increased social connectedness ($r = .23$, $p < .036$).

***Direct experiences with living and non-living things.*** Direct experiences with living and non-living things were mentioned infrequently in interviews, usually in the context of a challenge to be overcome as a group. Some alumni mentioned encountering non-living things such as stars, fresh air, storms, and fires. Three alumni recounted when persistent rain forced them to move camp rotations inside. Three retold dramatic tales of fires, during which one young woman was charged with feeding folks at a temporary site from the back of a truck. Another man reflected, “The fire came right down to the road break next to the camp and we didn't sleep, the staff at camp, for at least two days...I learned a lot about using shovels and spreading dirt on top of little pieces of flame because if you take the oxygen away you can't have a fire.”

Regarding living things, interviewees occasionally mentioned the smell of pine trees, the nuisance of bugs, the novelty of seeing squirrels for campers in the early years, and the threat of bears entering camp. About a bear incident during a storm, a former counselor said, “That was my fourth year in camp and I was like, ‘Oh, I kind of know what I'm doing and I can actually calm myself down in an experience where a lot of things are happening; I can still be in charge and make the right decisions,” capturing a connection that surveys did not – the increased self-efficacy associated with encountering living and non-living things in the wilderness.

***Physical challenges***. The two most frequently reported physical challenges were hiking ($n = 9$), and not showering for a week ($n = 6$). Also mentioned were the climbing tower and the need to constantly be active at camp. In campers’ surveys, physical challenges were moderately

correlated with increased social connectedness ($r = .40$, $p < .000$) which may be illuminated by this example of physical challenges being overcome in a group setting as below.

> They have this tower that's fifty feet tall. I have a fear of heights. Everyone… they all supported me. All my advisors and my [program directors], they were all cheering me on. It made me feel a sense of comfort, and I went for it. I didn't go all the way, but the fact that I did it, it really impacted me. I went home and I told my mom, 'Mom, I actually did something that I never thought that I would do.'

Overcoming physical challenges seemed to increase the self-efficacy of many campers, spurring them to take on similar adventures in the future. Speaking of the tower, one man said, "I don't think that would have been in my repertoire of activities that I would have been able to do or something that I would have thought about getting into. I think being introduced to experiences like that definitely made me want to do things in the future, seek them out on my own."

***Solo time.*** Although some interviewees described camp as quiet and peaceful, only one camper mentioned spending time alone in a meditation-type activity during camp.

**Socio-emotional learning.**

***Team building games and challenges.*** These activities were frequently reported in both surveys and interviews. Alumni explained that through such games they were encouraged to interact with different people, especially in "silly" ways, which made them feel safe and in turn helped them open up. Five alumni reported using such ice-breaker activities later in their careers. It seems that team building may have increased social connectedness ($r = .40$, $p <. 000$) and self-efficacy ($r = .28$, $p = .008$) by developing campers' communication skills.

> It was a communication game. We were blindfolded, and on the floor there were all these strings crisscrossed, and we had to depend on our other campers to lead us through the room without falling or stepping on the strings. That was very stressful, but we all did it and we all learned that we can't all talk at the same time and ...We learned the different ways that you can communicate.

***Group conversations.*** Group conversations were the second most reported activity in camper surveys and single most reported activity that interviewees designated as their most memorable or most significant camp experience. Group conversations took place both informally and formally throughout volunteer training and camp sessions. During training, volunteers are introduced to the egg metaphor.

> You imagine this student as an egg and you have your shell, you have your egg whites, and then you have your yolk. With a lot of students… your interaction with them is very surface level and that's like the shell…What they instruct the counselors to do is you're not going to get to the yolk with every student and that's fine but sometimes you will get to that point with someone where they're open and truthful enough to come out with whatever they want to tell you.

Sometimes, specific protocols were used to spark conversations. The "morning program usually has some kind of personal education slant to it. Like here's a bunch of quotes, pick out your favorite and then we're going to make some kind of collage with this quote and what it means to you." Four alumni mentioned the post-secret activity, where people anonymously write down "one of your greatest fears or one of your greatest challenges" and after they are read aloud, people have a chance to reveal who wrote each one and receive support. A young Latino man who had recently completed the older camper program recounted working with "rude" boys.

> The reason that was a very impactful experience for me was because … once they found out that all the things that they were saying about the people that we described ... [were] about us, they kind of felt ... they fell very silent, and they reflected on that… Their counselors would come up to us the days after that and tell us how much they changed, just from that activity…They hadn't realized that somebody who ... I guess for them, someone who presented themselves as being very well off had that kind of background.

Volunteers saw that campers felt empowered when they were able to speak about their challenges. One alumna thought that for some campers this was the first time an adult had really "asked them, what are your thoughts on this, or how do you feel about this, or what are your dreams, or what are your goals, … and it kind of seems casual for us, but it's a big deal for them." Another, who went on to become a psychotherapist noted it was "not just the intensity of

what she was saying, but the fact that she so clearly needed to say it." Speaking about her cabin talks, one said, "It gets me to realize how much other people are living, getting to that point where I understand that I'm not alone in anything that I'm dealing with and that there's people around me that are not only going through the same things, but are also willing to help." Hearing stories from campers as they opened up affected volunteers personally and professionally.

> My most meaningful year was when I was a counselor... hearing their stories of home and just seeing how resilient they all were really changed me and inspired me. I felt like I couldn't complain about my life when some of these kids were separated from their families, living in poverty with family members in jail, yet still being so happy and cheerful.
>
> He shared his personal journey of struggling when his mom was murdered and getting involved with gangs and him trying to get out of gangs and what that's been like as a young male. I think he was maybe a sophomore in high school …That is when it was his story, along with lots of others, made me realize I want to do this more than one week. I want to do this year-round.

It was hearing personal stories of campers that set many volunteers on a trajectory of public-service oriented work in non-profits, education, and social services, showing the impact of these group conversations at camp, particularly for the listeners.

***Discussing community issues.*** Alumni remember discussing issues of social justice as they arose from campers describing their lives. Topics included gangs, discrimination, and access to high quality education. One formal activity, "Walk the Line," addressed privilege and opportunity outside of the camp setting and helped campers and counselors reflect on their own.

***Jobs and leadership experiences.*** Interviewees frequently mentioned that campers completed tasks around camp, always in a positive light. "I liked the way that the kids were responsible for their chores and their duties. They had to either sweep out the dining hall or wash dishes or clean the biffies, or help out in the pool. Whatever it was, everybody had chores that they were responsible for all week long... I think that really gave the kids a sense of what it means to be part of a team." Older campers valued service-learning, including opportunities to

mentor younger campers in doing these chores. One recent older camper said about helping younger kids with dishes, “Helping them do that kind of helps nudge them in a positive direction, not only to understand that duties aren't that terrible, you can get through them and then be perfectly fine, but also gets them to get a more positive view on things.”

About a fifth of those interviewed described how taking on leadership roles at College Camp built skills that helped them later in their careers, including managing volunteers, time management, program planning, building teams, and adapting to unexpected circumstances. The yearly turnover in volunteer leadership meant that new leaders had a very steep learning curve. Most of those interviewed felt a sense of appreciation for this on the job training. “I think for having professional staff of four people and then relying on student volunteers, it really does put the onus on student volunteers to step up. I think I was able to develop a lot of my skills in management through that process.” Overall, interviews paint a vivid and consistent picture of leadership developing at multiple levels, as people were mentored by those with slightly more experience than themselves, but also propelled by their own recent experiences in the shoes of those slightly younger than them. Many people described College Camp as their first leadership opportunity, one they were surprised to find themselves in, and one which inspired them to take on increasingly challenging roles both within and outside of camp.

**Science and sustainability.** Interview data showed that College Camp is aware that science and sustainability are not strengths of their program. Alumni cited the small size and limited expertise of the permanent paid staff, the constantly rotating leadership and trainers, and the camp’s distance from the university as obstacles to connecting educational programming with the local environment. The desire to prevent or remediate liter was the most common issue.

***Science and ecology knowledge***. One interviewee lamented, "because we're only up there for the month, no one's really an expert on what trees are around here, or what are the invasive species around here."

***Scientific investigations.*** Interviewees did not mention this component in any way.

***Sustainability concepts and practices.*** In interview data, only four people mentioned sustainability concepts, usually "Leave No Trace" and the need to preserve nature.

> Don't take anything but pictures, kill nothing but time, and leave nothing but footprints. Like how younger kids are...they will throw their trash away anywhere, like on the floor. And I would be like 'Oh. No.' And explain the importance of that and why it was so important to keep all that nature the same way that it was.

The only sustainable practice mentioned in interview data was that some counselors took it upon themselves to "be really strict" about littering.

> It usually connects with the matter of cleanliness in the environment. I know I do pick up my own trash and I don't like it when I see people dumping trash out of their cars or leaving stuff on the sidewalk when they were just hanging out there. Why couldn't you just put it in the trash can or you could have recycled that … You know a lot of places are dirty and for these kids that live around here they need to know that you can clean up your environment. Or where you play at or hang out and you can try to encourage other people to clean up after themselves. I thought that was a great way to show them that this is so that the camp looks clean, so that we know we're not in a dirty place.

Campers were required to reduce water consumption by limiting their showers at camp. Other alumni mentioned the need to conserve water, one limiting her water use after realizing how precious water was at camp, and the other enjoying a long shower after a dirty week at camp, even though she knew it "not good for the environment."

**Structural Program Components.** While the surveys of campers did not ask about these structural components, three things emerged as significant features of the camp program based on interview data: the arts, staff training, and time spent at camp.

***Visual and performing arts.*** Skits, songs, and campfire stories were among the most memorable camp experiences for many interviewees. Performing arts helped alumni gain confidence with public speaking. Arts and crafts may have functioned beyond the activities themselves as this counselor described. Trying new crafts "allowed [campers] be a little bit vulnerable … because they still had to tolerate not knowing and needing help. All of those situations probably helped in seeing that their counselor could help them with something easy, which made it easier to trust them with some of the heavier stuff." Like other team building activities, the arts provided a pathway to social connectedness at camp.

***Staff recruitment and training.*** Interview data reveal that the robust, multi-layered volunteer training program is key to the program's success, as well as a memorable life experience for alumni. Leadership was passed on by strong traditions and high expectations.

> This process is replicated through the years and it's also replicated within the year. It goes from the program directors to the leadership team, the leadership team to the volunteers, the volunteers to the campers. It's an experience that we all get to have in our own way, where we get to share among our peers.

Before camp each summer, leaders had 100 hours of training, and then volunteer counselors and specialists had 100 themselves, including retreats, during which trainees previewed activities they would later lead for campers. Semi-structured reflective conversations were "kind of like a therapy session for us to listen instead of judging or reacting in a negative way." This cultivated empathy amongst counselors and paved the way for attentive listening to campers each summer. Trainers, having all worked at camp and survived, were mindful of allowing new volunteers to make decisions regarding programming and to prepare them for real-time decision-making based on the unpredictable exigencies of teaching kids in the outdoors.

***Time and dosage.*** The timeframe of camp, "one week, 24/7" came up repeatedly in interviews. Five people felt that a week was not a lot of time to make a big impact in kids' lives;

three of those choose careers that allowed them to extend their service to this population. Twice as many people recounted the almost identical story of "they'd come off the bus and they'd think they were all cool and tough and everything and by the end of the week they're hugging you and they're crying and they're sad that they're going home" and "it's just short of amazing to see that sort of transformation in such a short period of time." Within that week, eight people described the constant togetherness in itself as an important factor in building social connectedness.

**Demographic Variables**

In the interests of equity, this study sough to determine to what extent, if any, are the effects of outdoor education programs moderated by students' age, gender, socioeconomic status, or previous camping experience?

**Age.** Interviewees described working with older campers as more difficult and more rewarding. Although middle and high school students often acted "rebellious" or "tough" at first, also more willing to express their feelings and able to understand the purpose of camp activities. College Camp successfully provided increased challenges to older campers and volunteers, particularly those who returned to camp in varying adult roles.

**Camping experience.** An outstanding theme throughout the interviews was the importance of novelty in spurring personal growth. Neither campers or volunteers were assumed to have any previous experience when they arrived at camp. Said one,

> I had no idea what I was getting myself into. I had no idea what it was. The kind of impact it was going to have on me… Man, I think that first year is always the most transformative, eye opening, and sort of unexpected. I think when people return, it's because of that kind of impact…I'd say all of that accumulates, from the beginning.

By design, returning campers progressed through the years to more challenging programs such as service learning and wilderness backpacking for teens aged fifteen to seventeen.

> You have kids who maybe they went to College Camp from the time they were little … to the time they are teenagers…By the time they are teenagers, they are kind of used to and familiar with that. It's a little city… Going on a hike outside away from everything else is completely different experience. The impact I think is different.

Adults, as well, sought out new learning experiences for themselves. Volunteers repeatedly mentioned parallels between their own experiences and those of their campers. "As much as it pushes the students to go on a backpacking hike for four days, it pushed me just as much, especially in training and being comfortable with the environment." As volunteers moved up to new roles, they eagerly and lovingly took on new challenges in the spirit of "giving back" to camp, and often mentored younger volunteers through the lens of someone who had recently been in their shoes. It is perhaps this empathy and web of shared experience that allowed new and experienced campers alike the satisfying personal growth inherent in increasing one's positive impact by solving problems in a supportive and positive culture.

**Gender.** Neither surveys nor interviews revealed systematic differences in outcomes related to gender, though two interviews suggested that gender equality has increased since the 1970s, when women were less commonly involved in outdoor adventure sports.

**Race.** Interacting with people of diverse racial backgrounds was a meaningful highlight for campers and volunteers. Because of the history of segregation in College Camp's region, campers have been predominantly African American and Latino. One recent camper explained,

> I feel like me being African American and me doing something that most people don't do ... it's like people, they embrace you. They all push me for things because they see my vision and they see what I want to do. That's one thing I really love and I wish more people of my culture and my race were like that as well … The fact that you don't shower, you don't have no phone. I feel like the problem today, not even with just African Americans, but with a lot of people in my generation is that society has taught you, you can't be different and go do fun stuff like that. Because they look at it as, 'Oh, it's only a white person thing,' when it's honestly not.

The volunteer make up has shifted over time as the university has reflected larger trends, moving from mainly white males, to more female and Asian students, and of late, working to recruit

more students sharing campers' demographics. Volunteers described College Camp as "more diverse" and "less segregated" that the university campus as a whole. Said one, "I felt like a lot of students of color found their way to College Camp somehow." Another said, "I'm Asian American and biracial. That was a very different experience where I was not surrounded by all white people. That was really cool."

Some volunteers became more aware of their privilege and gained deeper appreciation for the experiences of minorities. According to one white woman who was surprised to learn about systemic racism faced by her campers, "I think I developed so much more empathy and awareness of some of the issues. It just opened my eyes to segregation more than anything." In describing one all-camp activity where people moved forward or backwards on a line based on their life experiences, another white woman admitted, "It definitely makes you check your privilege because most of the counselors were farther ahead [than the campers] … Seeing how much closer you are to opportunity versus someone else." In addition to planned discussions, day to day life provided insightful experiences for some volunteers.

> Because I am Caucasian and the majority of the kids aren't … I experienced in some ways some things that typically are experienced by minorities. For instance, one year at camp, there were two white counselors, myself and another one, and the kids could not tell us apart. We were the same person to them. And it was such an interesting experience because I'd never had it happen before, but I have so many friends of other ethnicities that have experienced that.

Volunteers consistently hoped that they could show care across racial boundaries and some evidence that it was successful. One hoped that the "upside could be an exchange of ethnic backgrounds, like okay here's a white [college] student who cares about me and cares about my future." According to at least one African-American former camper and volunteer leader who blended these two experiences together in this reflection,

> I've always appreciated multi-cultural-ism at [the university]. I really appreciated the fact that so many students that couldn't necessarily relate to underprivileged kids, from the rougher neighborhoods, would dedicate their time to go up and help these kids have a positive experience. I really really appreciated that… these kids to be able to *not only* see faces that looked like theirs, and appreciate that these students are not getting paid. They're are volunteering their time to make sure that you, well that I, had a positive experience for a week. That they were keeping me safe. That we were trying to make it fun. I really think the kids gained a lot from that.

People of all backgrounds noted the special importance of people of color serving as role models for campers. The resulting improved social connectedness in some cases seemed to positively influence academic motivation. Regarding the importance of seeing volunteers like him when he was camper, an eighteen-year-old Latino said, "I think it makes the future more realistic." Another woman said, "The kids that are Latino, they felt more comfortable around me immediately. Because they see somebody that looks like them. Sometimes that gave me a little bit more latitude in terms of being able to connect with the kids for sure."

> It was just kind of an extra layer, I think in my mind for them to also have a face that was a little bit more familiar to them. To know that it's not only, I hate say others, looking out for them. One of their own, but it sounds conceited, but escaped or successful or whatever. Whatever you wanna call it. Somebody that was like them that went along a positive path and was still involved and understanding that they're valuable. Just trying to be a positive example for them as well.

An Asian woman reiterated this concept while describing a session where "we had more kids that were Asian in our session and it was an interesting experience seeing the way counselors related to them because I do think there is something to be said for seeing someone that looks like you at college in a leadership role." Interviewees of all backgrounds consistently expressed a strong desire to support even more people of color as volunteer counselors. Put simply, "I do wish there was that added piece where we can confidently say that our staff, our volunteers are reflecting our target population." A few people recounted efforts to recruit from various campus groups. One man recalled efforts dating back to the 1960's when the university's interfaith group that hosted the camp "ran around and spoke to fraternities and sororities and it was made up of a

Catholic and Protestant and a Jew and a Black and a Chicano." Regarding the 1990's, someone recounted, "I guess it sounds so horrible to some people, but whatever, it was basically like we were trying to diversify the group of counselors that we had. We also would start recruiting amongst our friends to try to get a more diverse group of counselors."

Finally, in contrast to people who explicitly stated that race did impact their camp experiences ($n$ = 13), some said that race did not ($n$ = 8), and some said they were not sure ($n$ = 5). One recent camper said about her counselors, "three of them were white but I don't think they treated us any differently, because most of the campers with me were Black. I don't think so. It was pretty normal to be a woman of color as a camper I would say." An Asian counselor said, "at camp my race has never been an issue. We never talked about it. It never came up." Generally, for people who did say that race was not a factor in their experience, it was because they viewed camp as an open, welcoming, diverse place whose leaders attempted to "not make it colorblind, but make it person centered."

**Socioeconomic status.** The single most consistent interview theme was the change of perspective and empathy gained by relatively well-off counselors as they connected with campers and learned about the struggles they faced associated with their socioeconomic status. "The way I look at it as a society, is you don't judge anyone because you honestly don't know what they've been through. I've had some campers that have been through something where I'm like, 'Wow, I would've never even guessed.'" "It's one thing to read about institutionalized poverty or racism. I feel like people don't get it until they see it and can empathize." Fourteen respondents indicated that camp was "really eye opening," saying things like camp

> will remain one of the best things that I've ever done, and it completely shaped so many ways that I view the world…it just really gave me insight into the experience of other people… I feel a connection to the issues of what the kids are going through and when

> I'm concerned about a Trump presidency or a new social program or immigration issues I have those kids in mind because I know them, and I know their situations.

For many counselors, camp provided an opportunity to reflect on their own privilege. One interviewee broke down in tears as she drove home from camp one year thinking, "You could tell that they were going back to some difficult situations and I guess what was upsetting what that this was just a week in time for them, … and reviewing my life, and I was like, what is going to happen to these kids?"

Many counselors did indeed get detailed firsthand accounts of difficult home, neighborhood, and school situations campers faced and used this information to craft a respectful approach to dealing with youth in their care. Although the criteria for measuring it may have changed, campers have always been from underprivileged backgrounds. Alumni report hearing that campers' families struggled to pay their small fees or "had to take money out of their tax return or if they had to give up something so that he could go to camp." Students often came to camp without sufficient warm camping gear, and in the earlier days, hungry. "The food was a really big deal…Kids didn't skip a meal. They were appreciative or definitely participating in the meal program because I think it felt like a treat." Many counselors learned about "instability in their household," either as a result of kids being in foster care or group homes, or being raised by people other than their biological parents. A difficult home life was mentioned twelve times in interviews, although it is not necessarily true that this resulted from socioeconomic conditions. Dangerous neighborhoods were mentioned six times, and gangs four times.

> One of the girls mentioned that she had to affiliate herself with, like her family had to affiliate itself with a gang in the area of town that she lived in, because … the gang would protect her on her walk home from school. I heard about gangs and what-not on the news but I never lived in an area that has high gang activity and it just didn't occur to me. I don't know, it's different when you know someone that is affected by issues, versus just hearing about it on the news.

Counselors also learned about campers' experiences at school where "They don't have, it's not just resources, they would get in lockdowns and stuff like that. That's not really something that kids should go through. They would just explain how many things intervened with their education." Counselors took such information to heart in how they dealt with students at camp, which likely accounts for strong social connectedness. One said, "you're not really prepared for taking inner city students who have never had this experience before, coming not only from a background of poverty but probably have some trauma in there somewhere and major behavior issues." Rather than and "archaic discipline system" built on punishment, students' misbehavior was consistently described as a manifestation of their struggles and dealt with through relationships and mentoring. Beyond camp, this increased understanding also translated to civic engagement and career choices to benefit underserved communities. Said one counselor about interfacing with child protective services while volunteering, "I learned a lot about the DCFS system and I think a gained a lot of compassion for the families in that system and the kids especially in that system, which ultimately I think drove my future career choices."

Interview data show an evolution in how camp has dealt with the socioeconomic disparities between campers and counselors over the years. Respectful relationships seem to have always defined camp culture, while language has changed significantly. Whereas a counselor from the 1960s described "kids that may have had a chip on their shoulder," and one from the 1990s pondered about campers "how little of the world they knew" compared to her own son, that sort of "deficit" thinking has been replaced. In describing a phase with a "strong Christian contingent," around the year 2000, one woman recognized, "Having this savior complex is not really appropriate to begin with. There were a lot of issues with that." From a Latino who conducted volunteer trainings during the 2010s,

> We told our adults, we are not saviors, we are not here saving them from a horrible life or anything like that. We really felt this more intersectionality abuse, like you don't know what their experience is. Don't assume, don't assume that they don't have two main parents, don't assume that they're not eating.

According to two people of color who attended camp recently and went on to become counselors as college students,

> I never saw myself as super disadvantaged. I just took what I had and I made the best of it. I never thought that I was missing out on a whole bunch of opportunities … but I thought I should take advantage of whatever is put in front of me. Camp was one of those opportunities to just do it.
>
> I saw firsthand what that engaging with college students the impact that had with underserved students. I myself was an underserved student… I saw a lot of who I was and who I became and the same student population. I really did see that, that engagement between the kids and the counselors and those emotional relationships could have a lasting effect.

Although language has changed, interviews show clearly the focus on cultivating respectful and caring relationships is mutually beneficial both at and after camp – to kids, to college students, and to young professionals who are inspired to make a career working toward social justice.

**Change Over Time**

My fifth research question was to determine how thoughts about camp changed over time. Overall, alumni admitted their memories were blurry regarding in which of their various years working at camp specific experiences occurred. Once prompted to recall specific incidents, details came into focus quickly. People reported looking back on camp nostalgically, as an escape from the urban problems of everyday life. In retrospect, people commonly sounded astonished that they had pulled off running a camp as college undergraduates, given what they know now after working in other organizations. The long-term perspective afforded by the age span of interviewees revealed not just changes in perception, but long-term life conditions that emerged from camp. Half the interviewees reported making lifelong friends, not as

acquaintances, but as spouses and those commonly found in the inner circles of friends that coalesce as people age.

Finally, people exhibited a wistful hope that camp was still meeting its core mission, despite recent changes in the structure of its programs. Working with agencies that serve the target camper demographic has always been a feature of College Camp's operations. Recently, however, a concern has emerged about "double dipping" by bringing youth to camp who are already involved in community-based programming. One person said, "Hopefully the changes that are happening are in some ways superficial. Hopefully we're still reaching the same kids or creating the same experience of magic for the kids who are coming." People who passed through camp at any level valued it as a magical time in their young lives, and wished wholeheartedly to pass similar experiences.

> That kind of energy coming from an entire group of people ... it's a culture. The culture of College Camp, that is probably one of the most powerful things I've seen in a body. In an organization. That I've ever seen in general. That kind of culture that's developed and passed on from generation to generation. That every child that is involved in that is completely exposed to it and becomes a part of it. I think that's one of the major accomplishments of that organization.

## Summary

While the populations for surveys (youth 8-17) and interviews (aged 18-84) were distinct, data from all participants create a consistent depiction of camp as a place for socio-emotional growth and community building. College Camp's program components created not just behavioral intentions toward civic engagement, but also the self-efficacy and concrete leadership skills to help young people thrive in a diverse world. Camp also helped some people develop their connection with nature and a desire to preserve the environment that provided the for future generations.

## Chapter 5: Findings – Site 2 – Outdoor School

### Study Site Description

Study Site 2 "Outdoor School," has been operating continuously in the mountains of northern California since the 1970s. Two individual residential camps (Locations A and B), operated by the same leaders as one non-profit were included in this study. Each site's amenities include cabins for campers, an indoor kitchen and dining hall, standalone restrooms, and housing for paid naturalists and staff. Groups of about fifty campers are housed in cabins of about ten students each with two high school aged volunteer counselors. Teacher chaperones sleep in a separate house. Daily activity rotations are led by trained college-educated naturalists.

The survey sample for this study was drawn from students at seven different sessions that occurred in the fall of 2016. These included students from three schools at Location A ($n$ =210) and five schools at Location B ($n$ = 469); of these, one was an independent school and the rest were public schools. This cross-section of time was chosen to capture the range of socioeconomic statuses in a typical month. All campers are fifth or sixth graders, aged 8-14 (M = 10.64, SD = .67). All students participated in typical outdoor school programming, which included day trips to local tide pools and redwood forests, working in the organic garden, participating in songs and skits in the dining hall and at the campfire, and recreational time in the afternoons for free play.

The interview sample includes fourteen camp alumni, some with multiple experiences at camp, including five who attended the camp as children, ten who worked as naturalists or other staff members, and four educators who attended camp with their students. All had been involved with Outdoor School, from as few as three to as many as twenty years. In this way, the interview sample varied substantially from the population of campers who were surveyed.

## Survey Results

### Distal and Proximal Outcomes

This study sought to determine the perceived effects of outdoor education experiences on campers' behavioral intentions toward environmental stewardship, community service, and academic aspiration and to what extent, if any, the effects of outdoor education program components were moderated by students' connectedness with nature, social connectedness, or self-efficacy. Even though participants from Locations A and B drew from similar school populations and ostensibly experienced the same programming, their quantitative data showed surprising differences. Surveys indicated small but statistically significant increases in connectedness with nature and civic engagement intentions at both locations, but increases in environmental stewardship, social connectedness, and self-efficacy at Location A only (Tables 10-13). At both sites, the strongest correlation among outcomes was between the two distal outcomes of environmental stewardship and civic engagement. ($r$ = .44, $p$ <.000 at Location A and $r$ = .45, $p$ < .000 at Location B) (Tables 14 and 15). Self-efficacy was in the top second or third strongest correlations at each site, showing association with social connectedness at both locations, connectedness with nature (Location A), and environmental stewardship (Location B.)

Table 10

*Site 2, Location A: Pre- to Post- Survey Means for Distal and Proximal Outcomes*

| Outcomes | | Pre | | | Post | | |
|---|---|---|---|---|---|---|---|
| | | n | Mean | SD | n | Mean | SD |
| Proximal Outcomes | Connectedness with Nature | 171 | 11.66 | 2.08 | 200 | 12.69 | 1.98 |
| | Social Connectedness | 167 | 16.02 | 2.52 | 197 | 16.80 | 2.64 |
| | Self-Efficacy | 175 | 11.57 | 2.37 | 195 | 12.39 | 2.29 |
| Distal Outcomes | Environmental Stewardship | 173 | 11.60 | 2.46 | 199 | 12.05 | 2.31 |
| | Civic Engagement | 167 | 16.05 | 2.88 | 197 | 16.49 | 3.00 |
| | Academic Aspiration | 175 | 9.34 | 1.47 | 205 | 9.43 | 1.38 |

Table 11

*Site 2, Location B: Pre- to Post- Survey Means for Distal and Proximal Outcomes*

| | Outcomes | Pre | | | Post | | |
|---|---|---|---|---|---|---|---|
| | | n | Mean | SD | n | Mean | SD |
| Proximal Outcomes | Connectedness with Nature | 395 | 11.32 | 2.25 | 403 | 11.90 | 2.52 |
| | Social Connectedness | 385 | 15.68 | 2.93 | 376 | 15.81 | 2.92 |
| | Self-Efficacy | 406 | 11.55 | 2.23 | 382 | 11.58 | 2.35 |
| Distal Outcomes | Environmental Stewardship | 397 | 11.22 | 2.54 | 379 | 11.14 | 2.85 |
| | Civic Engagement | 389 | 14.89 | 3.29 | 372 | 15.31 | 3.29 |
| | Academic Aspiration | 402 | 9.40 | 1.27 | 400 | 9.33 | 1.34 |

Table 12

*Site 2, Location A: Changes in Pre- to Post- Survey Means*

| | Outcomes | n | Mean Change | SD | t | p | df |
|---|---|---|---|---|---|---|---|
| Proximal Outcomes | Connectedness with Nature | 163 | **1.10** | 2.00 | 7.00 | .000 | 162 |
| | Social Connectedness | 158 | **1.01** | 2.56 | 4.94 | .000 | 157 |
| | Self-Efficacy | 165 | **.85** | 1.97 | 5.53 | .000 | 164 |
| Distal Outcomes | Environmental Stewardship | 166 | **.57** | 2.15 | 3.39 | .001 | 165 |
| | Civic Engagement | 159 | **.50** | 2.43 | 2.57 | .011 | 158 |
| | Academic Aspiration | 172 | .04 | 1.27 | 0.42 | .675 | 171 |

Table 13

*Site 2, Location B: Changes in Pre- to Post- Survey Means*

| | Outcomes | n | Mean | SD | t | p | df |
|---|---|---|---|---|---|---|---|
| Proximal Outcomes | Connectedness with Nature | 338 | **.49** | 2.28 | 3.98 | .000 | 337 |
| | Social Connectedness | 315 | .17 | 3.05 | 1.00 | .320 | 314 |
| | Self-Efficacy | 334 | .08 | 2.25 | .63 | .527 | 333 |
| Distal Outcomes | Environmental Stewardship | 331 | -.22 | 2.18 | 1.18 | .071 | 330 |
| | Civic Engagement | 320 | **.35** | 2.72 | 2.32 | .021 | 319 |
| | Academic Aspiration | 350 | .03 | 1.06 | .61 | .544 | 349 |

Table 14

*Site 2, Location A: Correlations Among Proximal and Distal Outcomes*

| Outcomes | 1 (ES) | 2 (CE) | 3 (AA) | 4 (CN) | 5 (SC) | 6 (SE) |
|---|---|---|---|---|---|---|
| 1. Environmental Stewardship | | | | | | |
| 2. Civic Engagement | **.441**** | | | | | |
| 3. Academic Aspiration | .128 | .083 | | | | |
| 4. Connectedness with Nature | .153 | .068 | .031 | | | |
| 5. Social Connectedness | .155 | .094 | .023 | **.280**** | | |
| 6. Self-Efficacy | .100 | .097 | .068 | **.388**** | **.360**** | |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 15

*Site 2, Location B: Correlations Among Proximal and Distal Outcomes*

| Outcomes | 1 (ES) | 2 (CE) | 3 (AA) | 4 (CN) | 5 (SC) | 6 (SE) |
|---|---|---|---|---|---|---|
| 1. Environmental Stewardship | | | | | | |
| 2. Civic Engagement | **.451**** | | | | | |
| 3. Academic Aspiration | **.218**** | .074 | | | | |
| 4. Connectedness with Nature | **.321**** | **.199**** | .059 | | | |
| 5. Social Connectedness | **.256**** | **.204**** | .004 | **.181**** | | |
| 6. Self-Efficacy | **.337**** | **.302**** | .086 | **.260**** | **.384**** | |

**. Correlation is significant at the 0.01 level (2-tailed).

**Program Components**

Campers stated the extent to which they participated in various activities at camp on a five-point Likert-type scale (Table 16). At both locations, team building challenges and direct experiences with living things had among the highest participation rates, indicating similar program implementation. Location A had sustainability concepts as its third highest, while Location B had sustainable practices as its highest. As this camp's primary focus is on teaching environmental science, the high means for team building were the only surprises.

Unexpectedly, patterns of correlations between program components and outcomes was fairly different between locations (Tables 17 and 18). All correlations at Site 2 were mild, ranging from $r = .11$ to $r = .26$. Even though Location A had the most statistically significant pre to post survey changes (Table 12), it had the fewest correlations with program components of all three samples. Its socio emotional learning through team building and group discussions were most strongly correlated with the three proximal outcomes. At Location B, however, the strongest correlations were in the science and sustainability learning category. Learning sustainability concepts was correlated with connectedness with nature, while learning scientific facts was correlated with both nature connectedness and environmental stewardship. Site A's students did enter and exit the program slightly higher in all six outcomes, but not enough to account for such different patterns of correlation. Interview data showed more alignment with the patterns at Location B, focusing on science learning more than social skills. After re-confirming with camp staff the similarity in student samples and program implementation, these anomalies remain unexplained.

Table 16

*Site 2, Locations A and B: Program Component Participation Means*

| Program Components | Location A | | | Location B | | | Mean | t | p |
|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | SD | n | Mean | SD | | | |
| **Outdoor Experiential Education** | | | | | | | | | |
| Wilderness Setting | 207 | 4.01 | 1.00 | 412 | 4.04 | .93 | -.02 | -.27 | .788 |
| Living Thing | 206 | **4.41** | .81 | 412 | 4.23 | .91 | .18 | 2.39 | .017 |
| Non-Living Things | 207 | 4.05 | 1.01 | 411 | 3.99 | .95 | .07 | .82 | .412 |
| Physical Challenge | 205 | **3.92** | 1.00 | 412 | 3.67 | 1.14 | .25 | 2.65 | .008 |
| Solo Time | 205 | **3.90** | 1.23 | 409 | 3.36 | 1.26 | .54 | 5.07 | .000 |
| **Socio-Emotional Learning** | | | | | | | | | |
| Team Building | 203 | **4.55** | .73 | 409 | 4.28 | .82 | .27 | 3.95 | .000 |
| Group Discussion | 204 | **4.20** | .94 | 408 | 3.86 | .94 | .34 | 4.22 | .000 |
| Community Issues | 203 | **3.62** | 1.16 | 402 | 3.41 | 1.04 | .21 | 2.26 | .024 |
| Job or Leadership | 204 | **3.78** | 1.13 | 409 | 3.40 | 1.20 | .38 | 3.77 | .000 |
| **Science & Sustainability** | | | | | | | | | |
| Knowledge | 205 | 4.05 | .90 | 408 | 3.90 | .94 | .15 | 1.94 | .053 |
| Investigation | 204 | **4.03** | .99 | 405 | 3.46 | 1.09 | .57 | 6.29 | .000 |
| Concepts | 205 | **4.35** | .78 | 409 | 4.17 | .81 | .18 | 2.70 | .007 |
| Practices | 204 | 4.43 | .80 | 407 | 4.35 | .81 | .08 | 1.19 | .234 |

Table 17

*Site 2, Location A: Correlations in Program Component Participation and Pre-Post Outcome Changes - Paired Sample T Test*

| Program Component | Distal Outcomes | | | Proximal Outcomes | | |
|---|---|---|---|---|---|---|
| | Connected-ness with Nature | Social Connected-ness | Self-Efficacy | Environ-mental Stewardship | Civic Engage-ment | Academ-ic Aspira-tion |
| **Outdoor Experiential Education** | | | | | | |
| Wilderness Setting | **.162*** | .008 | .117 | -.075 | -.079 | .030 |
| Living Thing | .029 | -.062 | .134 | -.032 | -.069 | .086 |
| Non-Living Things | .061 | .011 | **.154*** | -.050 | -.042 | .039 |
| Physical Challenge | .129 | -.117 | .071 | .073 | -.008 | .085 |
| Solo Time | .086 | .013 | .143 | -.014 | **.165*** | .057 |
| **Socio-Emotional Learning** | | | | | | |
| Team Building | **.161*** | .110 | **.233**** | .074 | -.001 | .117 |
| Group Discussion | **.208**** | **.196*** | **.182*** | .137 | .153 | .054 |
| Community Issues | .072 | .080 | .059 | .102 | .126 | -.059 |
| Job or Leadership | .032 | .142 | **.155*** | .027 | .026 | .108 |
| **Science & Sustainability** | | | | | | |
| Knowledge | .115 | .003 | **.174*** | .120 | .084 | .097 |
| Investigation | .028 | -.001 | **.172*** | .027 | .057 | .072 |
| Concepts | .053 | -.106 | .016 | .057 | .056 | .006 |
| Practices | .119 | .051 | .121 | -.030 | .012 | .038 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

**Demographic Variables**

In the interest of equity this study sough to determine to what extent, if any, are the effects of outdoor education programs moderated by students' age, gender, socioeconomic status, or previous camping experience. Overall, T tests and Analysis of Variance tests showed very few differences related to demographics (Tables 19 and 20). Age was a factor in connectedness with nature with campers ages 12-14 increasing only half as much as campers aged 8-11 ($M$ = .63 versus $M$ = 1.46, $p$ <.032). In self-efficacy, younger campers grew just slightly less in self-

efficacy than older campers ($M$ = 2.14 versus $M$ = 2.78, $p$ = .028). Students from more affluent schools increased more in their environmental stewardship intentions ($M$ = .42 versus $M$ = -.18, $p$ = .047) (Table 12). At Location A, 56.2% of students came from schools with medium average incomes and 43.8% of students from schools with low average incomes. At Location B, 75% of its campers came from schools with high and 24.9% from schools with medium average incomes. Among the demographic variables, the distinction between sites was found only for socioeconomic status and for camp experience, with the more affluent campers at Location B having slightly more camp experience ($M$ = 2.84 versus $M$ = 2.32, $p$ < .000).

Table 18

*Site 2, Location B: Correlations in Program Component Participation and Outcome Changes - Paired Sample T Test*

| Program Component | Proximal Outcome | | | Distal Outcome | | |
|---|---|---|---|---|---|---|
| | Connected-ness with Nature | Social Connected -ness | Self-Efficacy | Environ -mental Stewardship | Civic Engage -ment | Academ -ic Aspira -tion |
| **Outdoor Experiential Education** | | | | | | |
| Wilderness Setting | **.209**** | .092 | **.212**** | **.127*** | .060 | -.071 |
| Living Things | **.211**** | **.115*** | **.183**** | **.114*** | .086 | -.046 |
| Non-Living Things | **.118*** | .066 | .014 | .067 | -.003 | -.074 |
| Physical Challenge | .081 | **.133*** | -.002 | .029 | .077 | -.061 |
| Solo Time | .177** | **.216**** | **.211**** | **.181**** | **.173**** | .000 |
| **Socio-Emotional Learning** | | | | | | |
| Team Building | **.175**** | **.142*** | **.181**** | .091 | **.127*** | -.103 |
| Group Discussion | **.174**** | **.157**** | **.112*** | .101 | .061 | -.022 |
| Community Issues | .020 | .026 | **.118*** | **.129*** | .085 | .022 |
| Job or Leadership | .105 | .093 | **.111*** | .100 | **.159**** | .043 |
| **Science & Sustainability** | | | | | | |
| Knowledge | **.254**** | **.175**** | **.176**** | **.214**** | **.165**** | .000 |
| Investigation | **.212**** | .066 | **.199**** | .068 | .079 | -.035 |
| Concepts | **.261**** | .016 | .078 | **.114*** | .074 | -.059 |
| Practices | **.221**** | .111 | **.139*** | **.211**** | **.145**** | -.025 |

**. Correlation is significant at the 0.01 level (2-tailed) or *. at the 0.05 level (2-tailed).

Table 19

*Site 2: Mean Changes in Proximal Outcomes by Demographics*

| Demographic Variable | Connectedness with Nature | | | | | | Social Connectedness | | | | | | Self-Efficacy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | SD | t/F | df | p | N | Mean | SD | t/F | df | p | N | Mean | SD | t/F | df | p |
| **Gender** | | | | | | | | | | | | | | | | | | |
| Female | 257 | .84 | 2.09 | 1.58 | 2, | .116 | 241 | .65 | 2.97 | 1.50 | 2, | .134 | 261 | .46 | 2.13 | 1.26 | 2, | .209 |
| Male | 238 | .53 | 2.36 | | 493 | | 226 | .24 | 2.89 | | 465 | | 232 | .21 | 2.27 | | 491 | |
| **Age** | | | | -2.15 | | | | | | -.91 | | | | | | -2.21 | | |
| 8-11 | 463 | .63 | 2.23 | | 2, | .032 | 438 | .41 | 2.93 | | 2, | .365 | 463 | .27 | 2.14 | | 2, | .028 |
| 12-14 | 35 | 1.46 | 1.96 | | 496 | | 31 | .90 | 2.95 | | 467 | | 32 | 1.16 | 2.78 | | 493 | |
| **Camping Experience** | | | | | | | | | | | | | | | | | | |
| 0 Times | 149 | 0.90 | 2.10 | 2.36 | 2, | .095 | 142 | 0.60 | 2.89 | 0.26 | 2, | .768 | 148 | .53 | 2.11 | 1.63 | 2, | .197 |
| 1-2 Times | 132 | 0.80 | 2.29 | | 492 | | 119 | 0.39 | 2.96 | | 464 | | 125 | .47 | 2.43 | | 490 | |
| 3+ Times | 214 | 0.43 | 2.18 | | | | 206 | 0.38 | 2.96 | | | | 220 | .15 | 2.10 | | | |
| **Race or Ethnicity** | | | | | | | | | | | | | | | | | | |
| Asian | 157 | 0.85 | 1.91 | 0.81 | 5, | .541 | 153 | 0.33 | 2.76 | 1.21 | 5, | .301 | 156 | .37 | 2.13 | .970 | 5, | .435 |
| Black | 11 | 0.91 | 1.70 | | 483 | | 9 | 1.44 | 1.94 | | 456 | | 10 | .90 | 2.18 | | 482 | |
| Latino | 48 | 1.02 | 2.45 | | | | 41 | 1.37 | 3.16 | | | | 45 | .78 | 1.99 | | | |
| White | 68 | 0.51 | 2.56 | | | | 66 | 0.55 | 3.33 | | | | 70 | .41 | 2.80 | | | |
| Other | 120 | 0.45 | 2.13 | | | | 118 | 0.25 | 2.63 | | | | 121 | .11 | 2.14 | | | |
| Multi | 85 | 0.59 | 2.43 | | | | 75 | 0.40 | 3.08 | | | | 86 | .10 | 1.83 | | | |
| **Socioeconomic Status** | | | | | | | | | | | | | | | | | | |
| Low | 274 | 0.59 | 2.19 | 1.09 | 2, | .338 | 252 | 0.33 | 2.85 | 1.63 | 2, | .196 | 265 | .16 | 2.20 | 2.10 | 2, | .124 |
| Medium | 173 | 0.72 | 2.26 | | 498 | | 175 | 0.43 | 2.97 | | 470 | | 181 | .46 | 2.20 | | 496 | |
| High | 54 | 1.07 | 2.15 | | | | 46 | 1.17 | 3.08 | | | | 53 | .75 | 2.04 | | | |

Table 20

*Site 2: Mean Changes in Distal Outcomes by Demographics*

| Demographic Variable | Environmental Stewardship | | | | | | Civic Engagement | | | | | | Academic Aspiration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | Mean | SD | t/F | df | p | N | Mean | SD | t/F | df | p | N | Mean | SD | t/F | df | p |
| **Gender** | | | | | | | | | | | | | | | | | | |
| Female | 260 | .16 | 2.21 | 1.33 | 2, 490 | .185 | 250 | .25 | 2.45 | -1.22 | 2, 472 | .224 | 273 | .07 | 1.11 | .695 | 2, 515 | .487 |
| Male | 232 | -.10 | 2.14 | | | | 224 | .54 | 2.78 | | | | 244 | .00 | 1.16 | | | |
| **Age** | | | | | | | | | | | | | | | | | | |
| 8-11 | 460 | .01 | 2.21 | -1.12 | 2, 491 | .263 | 443 | .36 | 2.63 | -.88 | 2, 473 | .380 | 484 | .03 | 1.15 | -.13 | 2, 516 | .898 |
| 12-14 | 33 | .45 | 2.20 | | | | 32 | .78 | 2.59 | | | | 34 | .06 | .89 | | | |
| **Camping Experience** | | | | | | | | | | | | | | | | | | |
| 0 Times | 148 | 0.22 | 2.15 | 2.69 | 2, 488 | .068 | 146 | 0.34 | 2.61 | 2.08 | 2, 470 | .125 | 156 | -.10 | 1.10 | 1.76 | 2, 512 | 0.17 |
| 1-2 Times | 125 | 0.27 | 2.34 | | | | 120 | 0.81 | 2.62 | | | | 135 | .07 | 1.11 | | | |
| 3+ Times | 218 | -0.22 | 2.16 | | | | 207 | 0.20 | 2.66 | | | | 224 | .12 | 1.18 | | | |
| **Race or Ethnicity** | | | | | | | | | | | | | | | | | | |
| Asian | 164 | 0.10 | 1.94 | 1.19 | 5, 481 | .313 | 162 | 0.38 | 2.52 | 0.39 | 5, 463 | .857 | 167 | .13 | 0.95 | 1.93 | 5, 505 | .087 |
| Black | 10 | 1.10 | 2.47 | | | | 10 | 0.90 | 2.42 | | | | 11 | -.91 | 1.58 | | | |
| Latino | 46 | 0.28 | 2.27 | | | | 45 | -0.07 | 2.94 | | | | 50 | .00 | 1.77 | | | |
| White | 66 | -0.15 | 2.38 | | | | 64 | 0.45 | 3.00 | | | | 73 | .04 | 0.93 | | | |
| Multi | 117 | -0.26 | 2.32 | | | | 109 | 0.36 | 2.41 | | | | 123 | .07 | 1.32 | | | |
| Other | 84 | 0.19 | 2.33 | | | | 79 | 0.51 | 2.60 | | | | 87 | -.07 | 0.73 | | | |
| **Socioeconomic Status** | | | | | | | | | | | | | | | | | | |
| Low | 262 | -0.18 | 1.99 | 3.09 | 2, 494 | .047 | 257 | 0.48 | 2.39 | 0.34 | 2, 476 | .715 | 278 | .05 | 1.12 | .026 | 2, 519 | .974 |
| Medium | 180 | 0.26 | 2.43 | | | | 169 | 0.34 | 3.00 | | | | 185 | .03 | 0.89 | | | |
| High | 55 | 0.42 | 2.31 | | | | 53 | 0.19 | 2.50 | | | | 59 | .02 | 1.74 | | | |

## Interview Results

### Distal Outcomes

This study sought to discover the perceived effects of outdoor education experiences on campers' behavioral intentions toward environmental stewardship, community service, and academic motivation.

**Environmental stewardship.** Interviews revealed that environmental stewardship is a consistent message at camp, and a guiding feature of instruction and operations. However, camp's impact on environmental stewardship outside of camp was relatively minor. Some small personal behavioral changes and some attempted changes in school practices and classroom pedagogy occurred after attending camp.

Personal behavior changes occurred for some alumni campers, counselors, and educators. More than a third of interviewees reported coming to camp as people who already loved nature ($n$ = 5). Some indicated that their affinity for nature and desire to protect it increased in a general way because of spending time outdoors at camp ($n$ = 6). Interviewees reported engaging in the following specific personal stewardship actions because of their camp experiences: reducing littering ($n$ = 3), waterway clean ups ($n$ = 2), reducing food waste ($n$ = 3), reducing carbon emissions by consuming less meat ($n$ = 1), recycling ($n$ = 1), and conserving water and paper ($n$ = 1). Each personal pro-environmental behavior was minor, such as using the "helicopter technique" to dry one's hands without using paper towels. Another recollected that as a high school volunteer counselor, she thought, "I'm 17 years old and I chew gum and I just spit it out … I remember one of the campers said, 'Hey you can't, don't spit that out.' And I was like 'Oh my gosh I totally forgot.' So I went back and we found a garbage place to put it in. So it did influence me a little bit in a positive way. Yeah, gum chewing anyway."

Collectively, interviewees portrayed camp staff as “so seamlessly” integrating environmental stewardship messages with other camp activities, in ways that were intended to increase students’ self-efficacy in taking pro-environmental actions. During the solo hike, an index card that served as a reflection point for students asked, “What is one thing that you can do to help our planet?" During a mock town hall debate, “the kids had to develop a plan for how to go about protecting the marsh, arguing from the different perspectives.” One teacher enjoyed every year’s “closing campfire, when kids get to go up on stage and share their favorite part of the week and how they've grown, some of the things that they've shared about realizing that they can have a positive change on the world, or that they want to help protect about nature.” Even performing arts sent a message, “especially that last one song, ‘go back to wherever it is and turn the world around.’ That they're not just getting this education and then going back with nothing. That they're going back with this growth and this new knowledge to do something to effect change.” One teacher believes, “It's these small tasks that the kids can really grab on to and comprehend that, ‘Oh, that's not a big change, but that's something that I can do.’” While teachers understood what Outdoor School was trying to convey, instances of students taking stewardship actions were rare.

In three cases, environmental stewardship actions were reportedly carried on at schools. One educator said, “At school one year, they wanted to have a meatless Thursday, just like they did at camp. They wanted to carry it on throughout the whole rest of the year. Others have started recycling programs here at school, and just small actions that they took from camp.” The same teacher said, “I watch really carefully how the naturalists bring up issues about conservation or 3eabout reducing our carbon footprint, and I try to embody that throughout the year.” In all, stewardship is more of a message than a concrete result of Outdoor School.

**Civic engagement.** Civic engagement is defined here as taking unpaid actions for the greater good. Interviews revealed very minimal connections between camp experiences and civic engagement. A couple people indicated, “I don't recall doing a lot of work around civic engagement, to be perfectly honest” and “I'm not super interested in politics or like, policy.” In the town hall meeting activity at camp, students take on various roles to explore how best to protect a marsh. A former camper described her best friend “she was actually in our city youth council and I did go with her once to see how it works.” An anomalous recent camper said, “I helped stop the use of plastic bags in my school, not in my school, in my city.” Five people mentioned political involvement at the local level to secure funding for camp, but no explicit connections were made between activities during and after camp. Engagement through volunteer work came up most often in the context of working with children. Three people recalled how volunteer high school counselors continued to support their campers by attending sports events. Two people said that camp made them more committed to volunteering to work with children but did not specify whether this occurred. Rather than through volunteer work, Outdoor School was perceived to have a stronger impact on paid, professional choices, as described below.

**Academic aspiration, college, and career pathways.** While interviews did not reveal any increased academic motivation for people who attended camp as fifth or sixth graders, multiple people confirmed camp’s positive influence on the high school counselors. High school volunteer counselors had to be in good academic standing and approved by their teachers to miss a week of school for camp. A teacher who enjoyed recruiting counselors used camp as a “carrot” and said, “you get these really amazing brainiacs who want to boost their resumes with all this community service, or you get a quote unquote kind of hippy type kid, which I love, but you don't often get the jocks or the kids that maybe aren't as into school… For a lot of them, I start

pumping it early on, like in their junior year, which tends to be one of the toughest, academically." A nineteen-year-old who recently volunteered as a counselor explained, "Academically... looking back, I know that the counselors who join it were generally on top of their academic work. Thinking about that, it motivates me to want to do well in everything that I do so that I have more opportunities like this that I can take up."

According to interviewees, Outdoor School influenced their decisions to work with children ($n$ = 8), and shaped the way they taught their own students ($n$ = 7). Four classroom teachers lamented that a focus on standardized testing in the past fifteen years had led to increased direct instruction at the expense of inquiry-based, hands-on, or experiential learning. One noted "Before Common Core [curriculum standards] and NGSS [the new science standards] came, when you're in a state-sanctioned school, science goes by the wayside. You're teaching math and reading." Outdoor School provided valuable science instruction in highly engaging ways that inspired visiting classroom teachers. More than two thirds of the interviewees portrayed Outdoor School's teaching style as drawing out campers' curiosity and critical thinking, largely through the naturalists' modeling of passionate enthusiasm for various natural phenomena in specific locations at camp.

> They spend six hours out in the redwoods, and during that time, it's not just learning about the redwoods. You can do math projects, counting rings on trees, and figuring out how many different trees are connected to a redwood family circle. You can obviously teach the science of redwood ecology, and how all the different animals have symbiotic relationships within that. Their ability to use this one place to teach so many different curriculum areas was something that I hadn't necessarily thought of before being a part of it with Outdoor School and now, that whole philosophy in education is something that I really strive to do in my own classroom.

In addition to classroom teachers, another woman who teaches college and public audiences claimed, "I learned in teaching in outdoor school the way you reach kids as sixth graders is like almost exactly the same way that you teach college students and adults."

Teachers said Outdoor School improved their ability to foster socio-emotional learning. “They also use a lot of positive reinforcement techniques, so like, restorative justice. The kids are never getting yelled at. There's no punitive punishments. There's no shaming of children.” “Because teaching is all about relationships and we see the kids in a really different way at camp than you do in the school setting, I think that's … where I see growth and development for me as a professional, has been dealing with kids in their social emotional growth.”

Even this small interview sample provided evidence that experiences and relationships from camp were credited with college and career choices in the environmental field as well. A former counselor reported, “Just the other day, I was on the phone with one of my former students, who's now 17 and looking at colleges. Yeah, it's just amazing how many interpersonal connections are made at that place.” “They're Latino, they're a diverse group of folks that I've ended up meeting years and years and years later. They will all tell you that that week put them in the course of their life, you know? To me that speaks volumes … [a student told me] ‘I went to [a top state university] because of my week in the redwoods ... And I'm studying environmental science.’” Former campers are also majoring in biology, marine biology, ecology, and garden science, and two are studying sustainable practices overseas. Regarding graduate school, one person said that living in the “mountains right on the coast there really let me think about - would I want to do forest ecology? Would I be interested in doing marine ecology?… I ended going and getting a master’s degree in marine biology and definitely … working at the outdoor school … helped to guide me that direction.” Former campers, volunteer counselors, and naturalist staff members currently have careers as an interpretive ranger with the park service, a citizen science leader at a research academy and museum, a business developer for sustainable farmers, and a marine biologist.

For this sample, at least, Outdoor School was perceived as influencing the fields of education and environmental sciences by stimulating interest in these careers. Outdoor School improved the pipeline to these in-demand professions by creating formal training for counselors and naturalists and informal professional development for teachers chaperoning their students.

**Proximal Outcomes**

**Connectedness with nature.** Outdoor School helped campers feel connected with nature, but there was no substantial evidence that this feeling was perceived as contributing to the distal outcomes. Nature was often referred to by interviewees of all ages as "*the* nature," which seemed to indicate heightened respect for nature in the culture of Outdoor School. "During my time at Outdoor School was definitely when I realized that it ["the" nature] wasn't a separate entity and, whether I was in the city or in a forest, I was still a part of the great whole everything and that was pretty huge." Connectedness with nature was treated more as an end in itself in the culture of this site, rather than as an instrument for behavior change. Twelve of the fourteen interviewees extoled the pleasures of simply "being" in nature at Outdoor School. Five described the awe the site's beauty inspired. Respondents who attended camp with their students especially appreciated the opportunity to "spend all day just sitting in nature and not have to worry about anybody or anything." They also noted this effect on their students, saying, "I hate to get all transcendental on you but it's almost as if they see the outside world as a place where they can *be* instead of a place that they're just passing through." People described each camp as special place. Two former counselors said they returned often to the redwoods with their own children because of their time at camp. For one woman who attended camp almost forty years ago, "it probably helped grow my appreciation for the environment, and for being more of an outdoors person, because I had that really positive experience, which then led to spending more time outside."

Connectedness with nature was often positively associated with nostalgia and escape from the modern world. Two former campers described returning to camp with their students as being like time travel, and expressed gratitude that so much had remained unchanged with the camp's site and programming. A current teacher who returns with her students annually said, "The most beneficial part is that kids nowadays don't have that internet-free time ... They don't get to go just connect and be a part of nature as much. I like that they [Outdoor School] are keeping that consistent and being able to do that now as 2016ers, as much as 1993ers."

Educators at Outdoor School employed an intentional pedagogy to help people feel connected with nature. Naturalists often instructed students on details of flora and fauna found on site, but interviews consistently revealed that there was a greater purpose beyond the transmission of facts. "Even on tide pool day and marsh day when they go out and they're really connecting with individual things, they're seeing things out there instead of just the expanse of it all, but they're actually focusing in on particular things that they see to make connections with those things." Drawing on her memories of camp as a child, one former naturalist said,

> I don't think if you'd asked me in 7th grade to recite facts about redwoods, or tidepools, or oak woodlands, I would have been able to remember all the things that the naturalist taught me, but I could remember that yeah I had a really amazing time … I wanted them [my students] to remember that they had a really great time and it was a really special and a really important place.

Put another way by a former naturalist, "You just make everything seem magical." A lasting memory recounted by a former counselor was about a naturalist who "did a belly flop into the redwood grove, and had all of the kids come and run after him and do the same thing, and so it was really this magical moment, watching twenty kids belly flop into the redwood dirt and be so excited about it." In connecting with nature, special attention to experiential learning was paid to socioeconomically disadvantaged students. "You have to give space for those kids who it's their

first time to actually just experience it, to explore and to feel it, and be in that moment and realize that you're not going to necessarily jump into the teaching part right away."

Respondents drew connections between natural and social connectedness. "The consistent thing is that they have naturalists who are interested in building relationships with kids in a respectful way and showing them their connection to nature and how the things in the natural world are connected to each other." A teacher pointed out the importance of counselors modeling for campers. "Hopefully, you get a counselor that loves the nature...I have gone with some counselors who didn't like that and that was reflected in their students too." For early adolescent campers and teen counselors, attention to the social aspects of learning has allowed Outdoor School to provide emotionally safe spaces for city kids to connect with nature.

**Social Connectedness.** Interviews revealed no substantial evidence of social connectedness being associated with the distal outcomes in this study. The primary theme that emerged regarding social connectedness was that of adults at camp reaching out across differences. Four alumni recognized their white and middle class privilege, and said, "it was something that we definitely had on our minds, and worked really hard to make sure that what we were doing was supporting students of all backgrounds." Other differences mentioned were working with campers of various genders, ages, and even high school social cliques who apparently forged friendships which lasted after camp. Two teachers old of students with serious mental health and behavioral challenges. One recounted, "We finally decided to bring him with us, and we put him in [a specific person's] naturalist group and [the naturalist] made a connection with him right away… and having that relationship with a male figure, he did wonderfully." Two people described Outdoor School as being "all about relationships," referring to the multi-decade partnerships between schools and camp.

**Self-efficacy**. Self-efficacy was not a major theme that emerged from the interviews; when it did come up, it was often connected to working across differences, as mentioned above. A counselor-turned-teacher said

> The first time I ever had a double cabin, I had a group of over twenty boys, and it was a very daunting thing for me, as a sixteen, seventeen-year-old girl, to be supporting this group of little boys, but it turned out to be amazing, in part because of the naturalists that I was working with. I got to see two totally different adult men be kids with these little boys, and being able to see two totally different ways of relating to these groups of kids, and I think it taught me a lot about how I can code switch between working with different groups … it taught me a lot as a future educator.

In describing her appreciation for working with an African American principal who was "very passionate about bringing the Outdoor School to students of color," her former staff member said, "it impacted me as far as having that lens, and recognizing that just because I'm a white woman in the woods doesn't mean that I don't have the power to share the environment with people of all backgrounds." Because the school covered the costs of camp for students, one person "understood that if they didn't have counselors it might not be something they got to do. The kids were so grateful. So I just felt like, 'Yay I accomplished something and I know this is definitely the track I want to be on after high school graduation.'"

Being away from their parents, their technology, and their normal classroom settings may have increased campers' self-efficacy, according to teacher observations. In talking about her students, a teacher said, "Some of them were really spooked at the thought of being away for five days without their phone. They didn't think that they could do it, and after the first day, realizing that they didn't miss it," they were surprised that they were able to have fun without their devices." A principal who attended camp said, "Their parents aren't there to do everything for them, and so they're responsible for themselves all day long, and I think that's a huge benefit." One such benefit described by two teachers was intellectual curiosity. "Students really have this

different environment than what they have at home…they leave there feeling a little bit more bold or more curious …We want them to be adventurous, we want them to ask questions." While adults saw students grow in capacity, interviews did not indicate that former regularly campers felt a subjective sense of increased self-efficacy from attending Outdoor School, nor did they show that campers acted in more empowered ways.

## Program Components

### Outdoor experiential education.

***Wilderness setting.*** Outdoor school educators made extensive use of their uniquely varied and beautiful coastal mountain locations to help participants feel emotionally connected to nature and to help them intellectually understand important concepts in ecology. Interviewees valued the rural setting of camp for providing not just respite from the city, but from the over-structured schedules of adults and kids. "After spending your whole life living the city or suburbs, you're constantly bombarded by other people and you know your school work, your family, your frustrations, and then going to camp is like there's none of that there. You're only surrounded by trees and fresh air and water." Camp helped kids get "out of their box" and explore adventurously so that they could "just be kids." Although novelty and adventure showed up as important themes, "reading the cues from the kids and the teachers, and what was going on in the environment, were all things that were taken into consideration with the planning."

***Direct experiences with living and non-living things.*** Outdoor School's naturalists excelled at orchestrating direct experiences which were both powerful and memorable. "Going there really makes you appreciate not only how looks, but how the things grow, how things work together and I see nature as more of a community." Interviewees mentioned touching crabs, sea anemones, fungi, and most especially the "Banana Slug Challenge," in which campers were

invited to pick up slugs and kiss them. This was the most often cited memorable experience in recent campers' open-ended survey questions ($n$ = 22). Other lasting memories included boys who "brought food into their cabin, they got a raccoon in there, and you hear them screaming at the top of their lungs because they're so scared that they want their teacher to come sleep in their cabin with them." Alumni who attended Outdoor School as children often mentioned the iconic redwoods, saying, "I remember the talking tree. I remember putting my ear against it as a fifth grader" and "from being there in sixth grade, I remember hiking in the redwoods." A former naturalist explained, "On trails we would talk about... how when you know something you care about it more… so we would do a little introduction for the trees and flowers." Water was the most commonly mentioned non-living ecosystem component. A veteran teacher explained, "Regardless of whether the kids have been in the redwoods before, kids have experienced trees…but taking kids who've never been to the ocean to the ocean is such a powerful experience." A former counselor described the "joy in kids' faces" after "ducking their heads in the pond, which is really cold." Three people also mentioned epic rainstorms occurring at camp, in each case as a positive experience. The wilderness setting was used extensively to create a feeling of connectedness with nature, and secondarily as a teaching resource for ecological concepts. This interview sample did not capture evidence that this led in any systematic way to any distal outcomes, aside from lasting and cherished memories.

***Physical challenges.*** Outdoor School did not provide wilderness adventure programming such as backpacking or rock climbing; still, the concept of "physical challenge" is subjective, and some people experienced challenges inherent in encountering nature. For some students, "They're afraid to be away from home, they don't like the outdoors, they don't like mud, they don't like rain, they don't like animals." For another group, "We worked with a group of kids

from the inner city at one point, that were not comfortable getting dirty. These are city kids. They're not used to rolling around in the mud in the same way that other kids are, and so you modify your teaching, and learn to read what the kids' comfort levels are." In the recent-camper surveys, students were asked what they might change about camp. Responses included, *"*Make the walk to the cabins shorter…Can you not make the village so far away?...I would put more light for the night hike…Put more street lamps." Regarding the Banana Slug Challenge, a former counselor said, "Yeah and I was just like, yeah, not going to do it. The guide was kind of like, he got a little mad. He was like, 'Nope … you're supposed to set the example for the kids.' I said, 'Yeah you know what, I can't do that. I just can't. Sorry.'" While such small challenges were brought up frequently as memorable, interviewees did not connect them to any proximal or distal outcomes included in this study.

***Solo time.*** Solo time can be thought of as direct experience of the self in nature. By far the most mentioned study program component in recent-campers' open-ended survey question was the "solo hike," including many whose biggest complaint about camp was that they wanted the solo hike to be longer ($n$ = 22). Interviews showed that the solo hikes took many forms at Outdoor School. "Even though we're not saying that we're setting up meditation opportunities on trail ... I mean that's what we're doing when we do solo hikes." "I think it's for twenty minutes. They lay out some index cards and have us walk. And there's facts about the earth, there's facts about the environment, and things like, 'Breathe and listen', and do you hear anything? ... It was beautiful…. This one says, "Take this moment to walk quietly reflecting on these past four days." Solo time was also used when "we did some poetry writing, when students got a chance to be in their own private sit spots, and write about what they thought, and felt, and heard around them." Nighttime, away from light pollution in cities, was useful formally and informally.

> Night patrol - that's basically when all the children are sleeping and you're assigned to walk around and keep your ears open to hear if anything goes wrong with them. It was so nice just being out there in the middle of this open space and being able to look up and the stars are there and the air's so fresh and it's freezing but you feel warm because you're so happy and that's the exact feeling that I'd constantly like to relive.

Solo time served to help people feel connected with nature and gave them a sense of well-being from serene reflection. The popularity of Outdoor School's solo hikes was as striking in the recent-camper surveys as in the interviews, indicating that even when not connected with behavioral changes by those interviewed, the connectedness with nature itself may be a long-term effect of solo time at camp, perhaps related to increases in self-efficacy.

**Socio-emotional learning.**

***Team building games and challenges.*** Team building occurred two ways, first through camp culture. According to a recent counselor, the morals taught at camp were "really all revolved around uniting new kids and working together." She said, "I've been in counselor groups where they seem super divided or they wouldn't even know a person in their cabin even though they're in the same class, essentially. By the end of the week we would go through so much that they would start hanging out actually at school." Secondly, rather than activities designed explicitly for team building, group tasks described at camp were more content-based. Regarding a population simulation, "They make it appear like it's a game of tag, but it's really strategy based," and also "there's the town hall night where they're working through a way to convince people to save the marsh." One teacher believed "they're able to build teamwork skills at camp, that helps back in the classroom" but did not provide explicit examples.

***Group conversations.*** Outdoor School regularly schedules times for group conversations, predominantly to reflect about learning. "In the morning we always meet up as a group, at night we always meet up as a group." During teacher time, "We always do a community circle and

sharing out what the kids have learned. What ends up happening from a teacher's perspective is that you see these kids really have their perspectives shifted… That's what keeps me really committed to having the kids go back." "My favorite experiences year to year are always the closing campfire, when kids get to go up on stage and share their favorite part of the week and how they've grown." Similarly, room was made for socio-emotional reflection for adults during the naturalist's training. "Every Monday morning we would start with values." Such comments were made in a positive light, but were not directly associated with increased outcomes.

***Discussing community issues.*** Interviewees did not mention discussing any community issues outside of environmental sustainability, as described below.

***Jobs and leadership roles.*** Limited mention was made of this program component. Generally teachers felt "spoiled" and grateful for the week away from school with minimal supervision duties. High school counselors took on more responsibility than they had before in life, but did not frame this as developing their leadership skills. One teacher noted, "I think there's a lot to improve on there just to make stronger high school leaders." Perhaps repeated exposure was key, as implied by a teacher who said, "He came back with us every year and being a counselor at camp helped him break out of his shell. And so we noticed that a lot with the counselors, especially the ones that would come back, a huge difference in them."

**Science and sustainability.**

***Science and ecology knowledge.*** Outdoor School educators work with school teachers to build continuity between classroom and camp instruction, though higher standardized test scores are not their primary goal. "They specialized the curriculum for us … so that they could focus what they were talking about on the different trails and such to align with the standards and units that we were teaching." Specific topics covered included plant and animal life cycles, plant

physiology, population dynamics, and enzyme functions. The distinguishing feature of Outdoor School's pedagogy was

> 'Let's have this experience and then coming out of it, you'll realize that you've learned this'…Going there really makes you appreciate not only how it looks, but how things grow, how things work together and I see nature as more of a community…You see that community between the trees. I know obviously, they don't talk to each other, but I think I felt more attached to the nature, more mindful of it as well.

Although Outdoor School staff work with classroom teachers, the deeper purpose and most cited outcome of science instruction is to help students feel connected with nature. This process also occurred for one naturalist who said of her time there, "Becoming very deeply a part of your place and really knowing your home in a native way was pretty transformative for me."

***Scientific investigation.*** Although students did not conduct any formal experiments, cultivating inquiry and critical thinking are primary goals of camp instruction. Rather than focusing on specific facts, "It's more about showing your excitement and your enthusiasm and having that transfer to the people that you're trying to teach" and therefore, "they really bring out that interest in students. The curiosity. If it doesn't already exist, they bring it out… A lot of these things are teaching students to be more aware of their environment and then think about like, this isn't just here. It doesn't just exist. Like, what can we learn from the nature itself?"

Naturalists also engage students in group activities to push their critical thinking. For example, during a tag game related to populations in ecosystems, "a lot of times kids will go to the easiest thing like, hunting. Shooting them. It's like, 'Well what about other things? Like what would change ... the way that an animal could live ... what would be something that would make them die? Getting them to basically to talk about not having food or space…. having them sort of discuss it and talk it out. I was always amazed at how many kids could get to the right place with the right guidance." In a sense, curiosity about learning could be considered very short term

"academic motivation." Interviewees described eight former campers or counselors who went on to study environmental sciences, but this study did not find any specific perceived impacts of this inquiry-based approach to learning at Outdoor School.

***Sustainability concepts and practices.*** Interviews indicated that the theme of sustainability at camp was integrated into instruction and operations, especially regarding an issue close to every kid's heart: food. "These naturalists are really teaching about science, but they embed how you as a person can help inform others or how you can, day to day, help the environment, or teach others about how to help each other and the environment." "Just that focus on not wasting food, and eating the whole apple, and only throwing away what absolutely is garbage, and finding ways to compost or recycle … It was just the work the naturalists did in the dining hall." About completing a meal with "zero waste", "if they get it for one meal, the principal … she'll dance with the food waste bucket on her head and that's the goal that we strive for." One counselor noted a connection between social connectedness and stewardship behaviors, "Seeing effects on the kids especially being like 'Don't waste food,' and I'd be like, 'Good job, you guys," and they'd be like, "Yeah, my counselor likes me.'" Sustainability practices regarding waste reduction that were modeled at camp were perceived as inspiring later stewardship behaviors among some campers back at their school sites.

**Structural components.**

***Visual and performing arts.*** Even though they were not included in my initial conceptual model, the performing arts emerged as an important program component at Outdoor School, especially because they transmitted camp culture through the decades. The arts provided important rituals for community-building and contexts for learning. "We started every day singing and dancing and really getting them excited."

> We gather around the campfire and usually they do a skit and we learn a song. At the very end we sing a song that's about the future … it leaves the children something to think about when they're ready to go to sleep at night. You know because nature, and all these things like trees, water, where they come from, and stuff like that. All the songs that we ever learned at camp are really significant.

Storytelling was used to impart lasting memories of two specific trees at camp, as mentioned by four interviewees and a handful of students in the open-ended survey question about their most memorable experiences. For one group who was "super into poetry," a naturalist said, "we did a variety of different poetry-based activities as we went through our hikes, so we did a hike where they read a poem as they walked down the trail, line by line, and then we did some poetry writing, … and then we took all of that poetry that they wrote independently, and put it together and created a collective poem that we ultimately shared at the campfire that night." Naturalists used the arts to cultivate joy, passion, and the proximal outcome of social connectedness in campers. Except for one naturalist who went on to start a children's entertainment company, there was no discernable relationship between the arts and distal outcomes in this study.

***Staff recruitment and training.*** Outdoor School hired experienced naturalists whose expertise was valued by campers and teachers who attended camp. Through training, "they have created that learning culture and that inquisitive culture within the staff that has been passed down to the students" "and that's … from the executive director on down, to teach for your passion." In terms of hiring, "the way that they structure their staffing is really special compared [county offices of education] where they have a very intern-based program, and they're turning over their staff really regularly. I think the fact that Outdoor School prioritizes paying their staff a little bit more, so that they can keep really high-quality naturalists in the program is really important." "Being there now seeing twenty years of naturalists, that's something that's never changed, which is really beautiful." Once hired, "every other Friday we would have these in-

services where we would just get to learn about something that we have interest in and teach each other ... because there's a major learning culture that goes on there with the naturalists." "As a new incoming naturalist, you do get to pick a mentor. Over my time I had five people chose me as their mentor. But in the community within, we're all mentors for each other." "These naturalists are so experienced and they're so welcoming to this kind of train of thought. So, students really have that opportunity to ask their questions, learn more, be adventurous, explore."

***Time and dose.*** Interviewees repeated typical camp stories of bonding that occurred between campers and counselors who spent essentially twenty-four hours a day together, and of students who dramatically transformed their attitudes the one-week timeframe. Interviewees described Outdoor School as a "well-oiled machine" that was "basically taking different parts of tried and true health... and mental wellness activities and putting them all into a week… I bet I can go to any part of that program during the day and I can tell you what they're doing ... and they would be doing it. [Laughs] I don't know that that will ever change." This consistency was important in one principal being able to tell parents reluctant to let their children attend camp, "No, you don't understand, they are receiving a week's worth of instruction during this week." Also, "From the adult perspective, it really helps bond the sixth-grade teachers together, because we are there for a week, all day, all night together. That's pretty cool. It gives us a different relationship than most of the grade level teams have here at school." Teachers reported that although time at camp took away from regular instructional time, the improved relationships with campers made up for this loss throughout the school year.

Some alumni lamented, "it just like this kind of dreamy week and then kids go home and it's over … it's like this one experience that you have for a week and there's no way to sort of take it home." However, someone who worked with the counselors stated, "I find that after

camp, because it's such a diverse group of high school kids, a lot of them stay connected with each other even after camp's over, with the other seniors." There were a couple of mentions of camper-counselor mentoring occurring after camp.

> As a kid, I was sick, and also really homesick, and had a lot of social anxiety around the whole experience. However, my counselor was so incredibly supportive and kind, and at that time, made it seem like she was kind of bending the rules to give us the amount of love that she did, to the point where she came and watched our basketball games and things like that, even after being a counselor for us, and so the fact that she put in so much effort, both the week that we were at camp and beyond, was really impactful for me as a nine, ten-year-old.

Overall, respondents were satisfied with the consistent use of time at camp, but showed interest in continuing a relationship between campers and either the Outdoor School or counselors.

**Demographic Variables**

This study sought to determine to what extent, if any, the effects of outdoor education programs are moderated by students' age, gender, socioeconomic status, or previous camping experience.

**Age.** Educators working with either sixth graders or high school students observed that camp helped students enlarge their circle of friends, but that campers tended to bond most with high school counselors. "the fact that these kids now consider this high school person their friend, that trumps everything… I just feel like some of our high school kids need more positivity, that people come down on them a lot in their teenage years. They have this automatic love from these groups of sixth grade kids." For the high school counselors, they tended to bond more with the naturalists, often recent college graduates.

**Camping Experience.** For many campers, attending Outdoor School was their first time away from home. Three respondents described being homesick when they attended the camp as child. Three educators stated that it was sometimes challenging to convince "hovering" parents

to let their “coddled” children attend camp, but the fact that it involved school personnel who they trusted helped convince parents to let their children go. “I have kids from all sorts of different ethnic and religious backgrounds whose parents have really been protective of them. We'll have two students this year who wear hijabs. I have a couple of students whose parents are super conservative, Christian, scary, isolating their kids - and because the teachers go and because we've done this for a long time the parents are much more willing to send their kids.” Many people who worked at Outdoor School had previous experience camping. For some it was through scouts or family trips. For others, it was at Outdoor School. This study did not reveal any systematic relationships between previous camp experience and the study’s outcomes.

**Gender.** No strong connections were found between the gender and outcomes.

**Race and Ethnicity**. Interviews revealed mixed opinions regarding the significance of race. Six white respondents stated that their own race had no bearing on what happened at camp. “I feel that dealing with fifth graders, they don't really differentiate between race or ethnicity so when I'm there I feel like I don't. I don't think I ever took notice of how my race would affect my experience there to be honest.” On the other hand, about half of the former Outdoor School staff interviewed consciously attempted to create an ethnically inclusive environment at camp. Many white alumni recognized their privilege and had asset-based mentalities regarding campers’ backgrounds. A garden teacher noticed about working with Latino kids from migrant farming communities, “Most of them had done some kind of work in the garden … Their confidence was always I felt like a little bit higher there.” “At that time I spoke much better Spanish than I do now, because I was using it a lot more. It was always fun to be able to kind of realize if you were able to teach it and speak it in Spanish, how much better they understood than English and realizing that importance of doing the bilingual thing.” A former principal stated

> I'm African American, and I think that that's not necessarily an ethnicity that's present in a lot of these outdoor school settings, so I think it helps my kids who are from extremely diverse backgrounds to know that being a lover of nature, or someone who loves the outdoors and the environment, it doesn't just have one look to it or one gender to it. I think it has a little bit of impact with them, and with some of the counselors too…I try to get counselors that represent the demographics of the kids that are going.

Of the study's outcomes, learning how to work with diverse students was the major source of interviewees' increased self-efficacy.

**Socioeconomic status.** As with racial differences, many camp staff interviewed sought to actively mitigate any adverse impacts of socioeconomic disadvantage. The first hurdle was getting kids to camp. In one district, "Camp is something more that the more privileged students get to do. Because it is expensive, so for us to be able to provide this experience to our more underprivileged kids I think was absolutely incredible. …Through grants and through fundraising we were able to pay for the whole thing." Regarding Outdoor School, "Big-picture-wise, we expanded our scholarship program to allow more schools from socio-economically needy areas to come, which as a result, allowed us to serve more diverse populations."

Students' socioeconomic statuses were not explicitly related to camp outcomes, but they were implied numerous times as a context for students' behaviors. While it can be problematic to conflate socioeconomic status with geography, in every case the alumni described campers' backgrounds to explain difficult behavior and to tell a story of successful relationship-building.

> I worked at a school with very challenging students …who would get in fights, who would have issues, who were members of gangs that really struggled at school. We really brought them out of their comfort zone here and [a naturalist] especially was just so good with our difficult kids. And we got to see them thrive, so we got to see them in an environment where they weren't in their comfort zone, they weren't surrounded by their negative influences and got to see them be children, got to see them be curious.

Describing "students who at one point had pushed me up against the wall or thrown rocks at me … to take them somewhere with no walls … I was incredibly hesitant." However, this teacher

was grateful to have been able to build relationships at camp with “kids with gang affiliations who were scared, because they've never been outside.” One teacher said, “We'd see a lot of wasted food” from a school with “97% free and reduced lunch, and so when you have those kind of aid programs students don't necessarily appreciate what's given to them.” However, such comments were not the norm, as staff interviewed indicated that less privileged kids regularly expressed more appreciation of the camp experience. Overall, camp sought to equalize access to outdoor education by seeking supplemental funding for schools, by providing instruction sensitive to campers’ prior experiences and by providing structured programming for students to forge meaningful relationships with educators chaperoning the trips in a non-punitive space.

**Change Over Time**

My final research question asked how alumni retrospectively reflect on their camp experiences over time. While Outdoor School offers productive novelty for its campers, adults interviewed greatly valued its consistency over time. Most people noted that it hadn’t changed substantially, due in large part to the passionate, “quirky,” and highly knowledgeable naturalists it hired. Outdoor School has become an intergenerational phenomenon, with half of the respondents stating they had been able to pass their own good experiences as a camper or counselor on to younger people with whom they work. According to one teacher, “When I talked to parents, I would talk about my own personal experiences with camp,” and to another, “most of the people who are on the school board have kids that have gone through camp, so they know better than to take it away.” “The way that they've grown and changed over the years has not gotten in the way of the relationships that they have with the schools that they started with, and I know that that's hard, considering the climate in public education has changed over the years.” If anything, interviewees felt that Outdoor School had only improved over time.

The changes that have occurred have been in response to growing environmental concerns. In addition to installing a food garden, this included "the recycling piece, and composting, I don't think we did a lot of that in the 60s." Content became "more tied to climate change at some point…I was there 2003 and 2009, a lot had come to fruition, as far as the awareness and understanding of what was going on." In the words of campers surveyed last summer, at Outdoor School, "We helped the environment by picking up trash, learning about the environment, and feeling what it was like to live in nature," so "please save the environment because there are a lot of animals and humans that need nature."

## Summary

Overall, Outdoor School provided consistent programming that used its wilderness setting to teach science and sustainability concepts and to connect campers, counselors, and educators to nature while at camp. While ostensibly an academic "science camp," its socio-emotional learning program components were correlated with increased proximal outcomes of social connectedness and self-efficacy – relationships that were confirmed and somewhat elucidated by interview data. Surveys showed stronger correlations between camp experiences and distal outcomes of behavioral intentions than were indicated by interview data. Perceived impacts of camp on environmental stewardship were minimal, given the camp's stated goals. Finally, some differences in socioeconomic statuses of camper samples at the two locations were found, but this did not account for the different patterns in quantitative data. Further investigation into differences in program implementation are needed.

# Chapter 6: Discussion

## Findings Highlights

In many ways, camp worked. Survey and interview data painted a coherent picture of each camp's programming and culture, with interviews adding the dimension of time and helping to clarify perceived pathways from what was experienced at camp to later life choices. Of the distal outcomes, camp was described influencing environmental stewardship slightly, civic engagement moderately, and college and career pathways to a significant extent.

Camp activities were associated even more strongly with all three proximal outcomes I quantitative and qualitative data. Connectedness with nature was the only statistically significant pre to post survey change at all locations and a common theme in interviews, despite the fact that alumni were never asked specifically about this topic. Though it may seem obvious that a week in the woods would help people feel connected with nature, it was far from a given, considering each camp session's short duration. Notably, moments of connection with nature were easily recalled decades later. Social connectedness was also a prominent outcome across sites. Socio-emotional program components were frequently correlated with proximal and distal outcomes and referred to in interviews at both sites, highlighting the role of community building at camp.

Demographically, camp's survey outcomes were evenly varied across differences in gender, race, and socioeconomic backgrounds. Interviews indicate that camp may have influenced older campers and counselors from high school and college even more than younger campers it served. When people who attended camp as both campers and counselors recalled significant events, they were often from early experiences in leadership roles. Older adults frequently reflected back on camp as enjoyable events which impacted their personal lives

through enduring friendships and engagement with the world as alumni continued civic-minded work begun at camp.

The benefit of this mixed-methods approach was that it illuminated how some of the survey's measured outcomes may have been experienced by campers, and how these experiences may have inspired behavior changes over time. Specifically, this study indicated that for many participants, social connectedness through group conversations led to civic engagement and careers in public service because it allowed college students to question their own assumptions about systemic injustices after hearing about the lived experiences of underprivileged campers. It also increased their self-efficacy and self-confidence in their capacity positively affect change in this domain. This often-repeated storyline also surfaced, in a way that surveys did not, the importance of rigorous staff training in preparing counselors for facilitating appropriate deeper conversations with campers.

Similarly, while survey data indicated that camp's outcomes were quantitatively similar across races or ethnicities, interviews revealed that camp likely functioned in slightly different ways for subgroups in achieving those outcomes. Many non-white alumni stated their appreciation for camp as an empowering place for people of color to see and become role models in leadership positions. Alumni of all backgrounds frequently stated a desire for the adults at camp to more closely match the camper population. Oppressed communities should not bear the burden of enlightening their oppressors. Still, this study highlights the potential efficacy of authentic conversations across lines of racial and socioeconomic differences in helping people interrogate their own privilege. Diversity itself functioned as a valuable program component at camp site with benefits that reverberated long after camp was over.

**Revisiting the Purpose of Environmental Education**

I began this study as an inquiry in to the premise that environmental education had failed to create meaningful changes in behaviors that protect biodiversity and ecosystem services upon which human lives depend. I have come to agree with this statement, but also to see how outdoor education experiences such as those provided by residential camps remain very promising pedagogies for transforming our ways of being in the world. I agree with those who contend that the debate between emancipatory and instrumentalist approaches has inhibited the field's success (Heimlich, 2010; Sterling, 2010). Even a cursory glance at scientific literature reminds us there is an urgent need to integrate deep respect for the individual with an activating concern for the greater good in the face of ecological degradation that threatens our existence. (Rockstrom, 2009). Whether one takes a biocentric or anthropocentric stance, the trajectory of our culture is exploitative of people and nature, unsustainable, and in need of drastic changes through education. Evolutionary psychology and the lived experience of those privileged enough to experience wilderness on anything close to its own terms tell us that by depleting nature, we are diminishing ourselves. "The ecological crisis, in short, is about what it means to be human. And if natural diversity is the wellspring of human intelligence, then the systematic destruction of nature inherent in contemporary technology and economics is in a way against the very sources of mind" (Orr, 1994, p. 140). As educators, this serves as an indictment of our current approach and gives us direction toward a healthier future practice.

This study is situated in the western industrialized world, in which "the oppressor consciousness tends to transform everything surrounding it into an object of its domination. The earth, property, production, the creations of people, people themselves – everything is reduced to the status of objects at its disposal" (Freire, 1970, p.58). In contrast, pioneering scientist E.O.

Wilson's (1984) concept of *biophilia* states that as a result of our evolutionary biology, humans gain psychological benefits from associating with - rather than rejecting - the natural world. Mounting research shows that connecting with nature contributes to human well-being by restoring attention through physiological mechanisms, reducing stress through cognitive processes, and somehow increasing resilience in dealing with stressful situations (Bratman, et al., 2012; Kuo, 2015). Increased urbanization has caused portions of the human population to suffer from withdrawal from nature and these impacts disproportionately affect low income people of color around the globe (Bigelow, 2015). Perhaps because it emerged at the same time as the environmental movement during the worldwide cultural revolution of the late 1960s, Paulo Freire's critical pedagogy provides a fruitful lens for understanding the deeper need to restore our connection with the earth. Freire defines oppression as anything that makes us less human, and by alienating us from nature, our economic and educational systems are making us lesser human beings, and less well-prepared for dealing with the future's uncertainties. That residential camps are physically removed from the cities may have benefits, but the fact that in interviews cities were consistently described as polluted, dangerous, and something to from which to escape simply highlights the environmental injustices facing campers and counselors alike.

Fortunately, current findings reveal that time spent at residential camps has a strong potential to increase one's connectedness with nature, and this highly personal experience can serve as a foundation for further transformations of consciousness. For students and teachers at Outdoor School, educators used a two-pronged approach to increase nature connectedness. They allowed for direct experiences in nature, such as putting one's feet in the sand, rolling around in redwood groves, and kissing slugs. Secondarily, once students were focused on these organisms, naturalists taught about the complex ecological roles each organism played, and cognitively

increased campers' understanding of interconnections among life forms in ecosystems. This awareness of interdependence was a surprising but consistent finding, one which was unfortunately not associated with any behavior changes at all. At College Camp, with minimal focus on environmental awareness in its programing, an example of changed worldviews regarding one's orientation toward the environment was when a first-time counselor in the backpacking program encountered pristine nature and was grateful enough to support conservation work.

> Having now experienced it, having seen just how peaceful and transformative it is for me personally let alone for students and young people that might not have ever had that opportunity, I think motivates me even more so to donate to those causes.

A handful of participants expressed shock at seeing nature untouched by humans, apparently having never done so prior to camp. People mentioned Leave No Trace ethics, and although they invariably confused its tenants, they apparently became more mindful of litter specifically, and therefore of their own place as humans in relation to the environment. Such findings support D'Amato and Krasny's research (2011) which also showed that people felt a desire to protect or give back to nature after it had provided psychological services for them. This shows how opportunities to connect with nature at camp can further enlarge one's sense of community beyond human beings to include fellow inhabitants of the natural world.

As the current study corroborates, meaningful nature connections themselves do not usually lead to pro-environmental behaviors (Heimlich, 2014; Stevenson, 2013). This gap can perhaps be explained by transformative learning theory, which states that for behavior changes to occur, people must experience a "disorienting dilemma" regarding which "we can no longer interpret our current experience in light of our old assumptions" (D'Amato & Krasny, 2011, p. 238). Similar to Freire's (1970) concept of *conscientization*, this process of deep inquiry into

systemic roots of injustices is best and most often achieved through dialogue, "an indispensable act of cognition which unveils reality" (p. 134). Freire asserted that "True reflection leads to action" (p. 66). He further explained how we need people to assist us with these deeper levels of reflection.

Fortunately, as College Camp illustrates, residential camps can provide excellent opportunities to orchestrate critical dialogue. Time and again, as alumni reflected on their camp experiences, it was authentic conversations with people who they initially perceived as different from themselves which shifted their worldviews in ways that led to empathy and to action. People from more privileged backgrounds came to understand the daily struggles of those with fewer opportunities, and many underserved youth saw role models, learned to envision their own potential, and came to believe that there were some members of the dominant culture that were legitimately invested in helping them succeed. Interview data suggest that the key to success in these small group conversations was that counselors had previously experienced such structured reflective conversations through their training, many months prior to working with campers. This allowed adults to bracket their own issues and focus instead on the campers' narratives.

Without utilizing the deep sense of community that can be built at camp, outdoor education may remain only marginally effective – contributing to occasional acts of impact reduction, but failing to inspire the kinds of civic participation and leadership necessary for sustaining human cultures (Alisat & Reimer, 2015). In survey data, increases in environmental stewardship intentions were correlated with many of each camp's program components, but interviews revealed that past campers' behavioral changes were limited to using less water or paper, reducing littering, or contributing to occasional waterway clean ups. Unfortunately, current findings support the contention that "consumer culture and the capitalist mindset have

taught us to substitute acts of personal consumption (or enlightenment) for organized political resistance" (Jensen, 2015, p.268). In order to become motivated to participate in civic behaviors that can re-structure the systems currently dividing us from nature, research shows that contextual factors, such association with other people involved in civic actions are more important than any other demographic or personality traits studied (Alisat & Reimer, 2015). In a related study, increased cosmopolitan worldviews which promote human rights and appreciate cultural diversity were found to increase commitment to pro-environmental behaviors (Leung, et al., 2015). Fortunately, current findings support meaningful and long-lasting perceptions of increases in social connectedness during and after camp. Combined with the natural setting, camp's carefully co-created communities can become healing spaces for collectively reorienting ourselves. Claiming that educators must teach either for human beings *or* for the earth reinforces the false dichotomy perpetuated by western individualism and materialism that humans are separate from nature. With careful planning, building on the camps' strong culture. Educators can indeed transcend these misleading divisions and nurture people by protecting nature.

**Recommendations for Practice**

**1. Connect with nature.** First, camps should ensure that children and adults are guided to connect with nature on a personal, visceral level – to experience nature with their senses and entire being. Ideally, these opportunities should occur in landscapes meeting the Kaplans' (2004) criteria of providing immersion, escape, and fascination – each of which was mentioned in numerous interviews. Visiting more pristine areas is crucially important in combatting "generational environmental amnesia," whereby the landscapes people experience as youth become the baseline wilderness to which future landscape modifications are compared (Kellert, 2012). City dwellers run the risk of misconception and miscalibration of what constitutes a

healthy ecosystem and thereby may fail to recognize degradation as it occurs. In turn, this can impair their assessment of urban ecology initiatives they must analyze as citizens. Whereas alumni interviewed from College Camp spoke favorably of past overnight hikes leaving the residential camp for a local lake, during a recent trip to the site I found out that people on staff did not even know where the trails that led out of camp ended up. Tapping into the expertise of alumni would provide needed mentoring for reinstituting a powerful camp tradition.

Outdoor School's interviews and open-ended survey responses showed that solo hikes in particular helped people form lasting and cherished memories of nature. Supported by studies showing the impacts of even short nature exposure (Bratman, et al., 2012) findings from the current study suggest that by simply charting a safe course, laying out a few index cards inviting mindfulness activities, and timing campers so they are safe and alone, any camp staff can easily facilitate many of the health benefits nature contact provides. In addition, practitioners could design an option for longer or more challenging solo hikes, as this study's campers requested.

**2. Raise ecological consciousness through critical dialogue in small group discussions.** Secondly, camp staffs' well-developed skills in small group discussions should be leveraged as critical pedagogy to help groups of campers deconstruct myths and too-true societal structures that keep them from connecting with nature, and to build solidarity for work that undermines these oppressive systems back 'down the mountain.' Toward the end of each camp session, the ubiquitous and successful small group dialogues may provide ideal opportunities to employ transformative learning techniques to help campers reflect on any newfound understandings of their relationships with nature resulting from direct experiences at camp. Just as counselors at College Camp did not intrusively probe into students' personal lives regarding gender, racial, or socioeconomic injustices, it is likely that campers would readily open up about

their significant contacts either with nature, or perhaps their lack of access, interest, or opportunities to bond with nature in their neighborhoods. Many Black and Latino alumni who were interviewed were keenly aware that nature-based recreation was not their family's norm; they took pride in serving as adventurous and capable role models and actively sought to recruit more people of similar backgrounds to become involved in camp. It is likely that people in any group would have much to learn from one another regarding varying views on nature.

The purpose of critical dialogue is to help "people become masters of their thinking by discussing the thinking and views of the world explicitly or implicitly manifest in their own suggestions and those of their comrades" (Freire, 1970, p. 134). To this end, semi-structured discussions at camp should allow campers to understand a spectrum of orientations from biocentric to anthropocentric, to clarify their own values, and to begin to process how their lifestyle choices and civic engagement may serve to perpetuate or to interrogate identities, beliefs, and institutions based on these value systems. Such processes are aligned with adult learning theories, which often seek to increase autonomy in critical reflection and analysis of societal problems (Wendon, 2004) and thereby improve one's contributions to democratic decision-making (Wals, 2004).

**3. Infuse critical reflection into instruction and operations.** Thirdly, critical consciousness can also be infused into camp operations and instructional activities. For example, following the "predator and prey" tag game, which is often used to reinforce concepts of energy transfer in the food web, students could then consider the global food production chain and the consequences of their eating choices. Students could learn that a plant-based diet contributes only half as many greenhouse gas emissions as meat-based diets (Scarborough, et al., 2014) and that the water footprint per calorie of beef is 20 times higher than grains (Mekonnen and

Hoekstra, 2012). At Outdoor School, students probably enjoyed cleaning their plates to achieve a "zero waste" dinner culminating in the principal dancing with the empty waste basket on her head. Unfortunately, that experience was highly directed by adults, and did not invite substantial agency by students, nor any chance for reflective consciousness-raising regarding food systems. Perhaps campers could be posed a more authentic challenge, such as reducing the overall carbon emissions or food miles right at camp.

Because of their wilderness settings, limited resources, and resulting new routines residential camps can often make people more aware of their consumption habits at home. This could serve as an entry point for discussing issues of environmental racism and environmental justice in campers' neighborhoods, where air or water pollution may be high but regulatory oversight, and access to fresh food and green spaces may be limited (Pulido, 1996). For groups that are ready, such a conversation may begin to uncover any inherent contradictions among participants' values, aspirations, and own patterns of consumption. Young people are often encouraged to pursue material success, but such achievements may be at odds with their more bio-centric values. Such cognitive dissonance may offer fertile ground for transformations even beyond those commonly reported in the current study (Wray-Lake, Flannagan, & Osgood, 2010). While these topics might seem heady for children expecting a fun week in the mountains, there are countless examples of thoughtful lessons and conversation guides which show developmentally-appropriate and enjoyable ways to broach such topics with children (Bigelow, 2015). Ultimately, the success of such discussions would rely on staff's skills in relationships and critical reflection.

**4. Create participation ladders to challenge returning campers and staff.** Camps draw on the strengths of each developmental stage as participants move through roles as

campers, specialists, counselors, staff, and board members. College Camp interviews illustrated how people at each participation level were able to pass down expertise so that most people were simultaneously mentoring and being mentored. It meant that each time a person returned to camp, they would have the excitement of novelty and the satisfaction of accomplishing new tasks. The effect was a challenging environment that supported growth in social and leadership skills, as well as self-efficacy and confidence in these tasks which often contributed to decisions to civically engage through working with children or tackling larger issues. For any camp that does not regularly work with high school or college-aged mentors, developing a training and mentoring system for them could improve the implementation of programming through greater staff expertise and cohesiveness. In addition, camps that work with school groups should consider increasing the challenge level for teacher chaperones by providing structured opportunities for them to build and practice skills in nature-based teaching or facilitating socio-emotional learning. Teachers often want "something they can take back to their classroom," and honing an effective best practice through experimentation in the safe space of camp could easily provide this. Many of the benefits of residential camps occur not for the campers, but for the older participants who are more intellectually and emotionally ready do deal with critical self-reflection and systems thinking. Therefore, investment in tiered leadership development networks would be a wise choice for camps and those who fund them. The self-selecting group of people who return to camp each year are ideal recipients of additional funding and support.

**5. Incorporate connectedness metrics into school accountability plans and budgets.** The unintended narrowing of the curriculum which occurred under federal *No Child Left Behind* (2001) regulations negatively impacted experiential learning in general and science learning in particular. Under Congress's *Every Student Succeeds Act*, environmental education is

specifically eligible for federal funding for programs and activities that support access to a "well-rounded education" (ESSA, 2015, p. 36). The new laws require states to develop systems to measure school performance based on "multiple measures" beyond standardized test scores. Even before this requirement, California (where the study sites are located) was devising ways to hold local educational agencies accountable for priorities such as "student engagement" and "school climate" which explicitly includes "social connectedness" (California Department of Education, 2015). Administrators must develop logic models which attach funding to these outcomes. By using an instrument such as the survey developed for this study, camps and schools can provide evidence about the extent to which their outdoor education programs do in fact create social connectedness for students of various backgrounds. If it is found that a camp is not succeeding in this regard, it may wish to reorient its training and programs to promote this worthwhile goal, and thereby secure reliable funding for their services for public school students. Our country is currently facing a massive teacher shortage, fueled in part by burn out, high turnover rates, and poor working conditions in urban schools. Given the findings from this study, it is also worth considering the benefits for educators of restorative time in nature and the increased sense of community that camp can provide them.

**Study Limitations & Recommendations for Research**

The most important limitation of this study is that the alumni interview sample did not match the general population of current campers. The camper sample reflected the increased ethnic diversity and lower average socioeconomic status of younger Californians in public schools. The alumni population consisted largely of former adult staff who were college students at College Camp and recent college graduates at Outdoor School. In this sense, the alumni were a

self-selected group who felt positively enough about each camp to return over many years and to contribute their time and insight to this research.

Social desirability bias posed a potential threat to findings as participants may have wanted to portray themselves as more environmentally or civically focused than they were. However, open-ended interview questions and careful phrasing allowed alumni to frequently provide negative responses. For example, the majority of those interviewed quickly and clearly stated that camp had no effect on their academic motivation because they already possessed it before beginning their work with College Camp. In this context, accounts by people who perceived camp as affecting their stewardship, volunteer, or professional choices became more credible. Those who felt neutral or negatively about camp were likely not involved in each camp's formal or informal alumni network. On the other hand, these particular interviewees were able to provide accounts showing their growth and bring to light changes that they observed emerging over the span of their involvement with camp. Although it was not possible to isolate the effects of a single camp experience, interview data generally aligned with survey data, creating some continuity among the two sample populations and provided insight into both continuity and change over time.

A second limitation of this study is that it could not prove causality. By relying on correlations and often distant memories, data focused more on perceptions and intentions. The data have provided direction for models to test in future statistical analyses, including more tests of moderation of proximal factors on distal outcomes. Further studies surveying a much wider range of camp alumni and even a control group of demographically similar students who did not attend camp could help provide insight into casual relationships among these variables.

More specific or objective measures of environmental stewardship and civic engagement should be developed beyond the self-reports and broad definitions employed here. I asked questions and interpreted answers broadly in coding interview data in order to understand the range of options people felt were open to them regarding these two variables. Most pro-environmental behaviors reported in the current study would be categorized by Alisat & Reimer (2015) as *personal* actions. Many *civic actions* around social justice went even beyond the *participatory* stage because alumni exerted *leadership* on these issues through their professional work. While distinctions in that prior research were presented to categorize volunteer efforts, an important direction for researchers would be to further consider career pathways as powerful demonstrations of commitments to an array of social change goals.

Future researchers should also construct a more valid and reliable scale for measuring changes in academic motivation over the course of a week in non-academic settings. Rather than focusing sheerly on an end result, they could concentrate on whether and how camp had developed new intellectual interests or socio-emotional drivers of academic pursuits. My instrument mistakenly simply asked about campers' belief that that would graduate high school and college. There is some indication from interviews that involvement in mentoring through camp positively influenced community college transfers and first-generation college students' bachelor degrees completion rates; as a major concern of the state's charter and philanthropic communities, this bears further study. A future study could map out relationships between youth's aspirations, choice of majors, attendance at graduate schools, and eventual careers that alumni can trace back to camp experiences.

Finally, this study encompassed a wide range of proximal and distal outcomes, many of which may not necessarily align with any particular camp's mission. I hoped to find through this

research that as educational decision-makers, we do not have to choose between what is good for an individual student, what is good for society, and what is good for "the nature." As Pope Francis expressed in his *Encyclical on Climate Change and Inequality* (2015, p. 86),

> We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both environmental and social. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature.

In essence, my findings optimistically suggest that this is possible. According to the perceptions expressed in this study, for some people camp enables restorative mental health benefits through nature connection; it provides job training for young adults in civically-engaged fields that desperately need them; it helps teachers by allowing them to build relationships with their at-risk students which save time and promote classroom learning; it helps young people of color feel socially connected in college; it provides safe spaces for diverse groups to develop the socio-emotional skills to appreciate differences and cultivate empathy; for some, it inspires lives of service and community involvement. These outcomes alone would make them worth the public investment. However, without functioning habitats to support us, such outcomes are obviously impossible and meaningless. As substantial portions of society rush forward to cross planetary systems' viability thresholds, perhaps outdoor educators, armed with these recommendations and other research, can use their time-tested wisdom to connect us to each other and to what makes us deeply human well enough for us to at least survive.

## Appendix A: Environmental Education Outcome Frameworks (A. Frame)

| Document | Tblisi Declaration (1977) | Hines et al. (1986/7) | Bamberg & Moser (2007) | PISA (2006) | Mc Beth & Volk (2010) | Stevenson (2013) |
|---|---|---|---|---|---|---|
| **Unit of Analysis** | **Environmental Education Objectives** | **Psycho-Social Variables** | **Determinants of Pro-Environmental Behavior** | **Environmental Science Education Framework** | **MSEL Environmental Literacy Variable** | **MSEL Environmental Literacy Concept** |
| **Awareness** | | - | Problem Awareness | Perceived Awareness of Complex Issues | Issue Identification | Issue Identification |
| **Knowledge** | | Knowledge of Action Strategies | - | | Ecological Knowledge | Ecological Knowledge |
| **Skills (Cognitive)** | | Action Skills | - | Environmental Science Performance Index | Issue Analysis | Issue Analysis |
| | | | | | Action Planning | Action Planning |
| **Attitude** | | Attitude | Attitude | Attitudes Toward the Environment | Environmental Sensitivity | Environmental Sensitivity |
| | | | | | General Environmental Feelings | Environmental Feeling |
| | | Locus of Control /Self-Efficacy | Internal Attribution | Responsibility for Environmental Issues | - | - |
| | | | Perceived Behavioral Control | | | |
| | | Moral Responsibility | Moral Norm | | | |
| | | | Social Norm | | | |
| | | | Feelings of Guilt | | | |
| | | Behavioral Intention | Intention | - | Verbal Commitment /Intention to Act | Verbal Commitment /Intention to Act |
| **Participation** | | Pro-Environmental Behavior | Behavior | - | Actual Commitment /Pro-Environmental Behavior | Actual Commitment /Pro-Environmental Behavior |

## Appendix B: Logic Models

Data collected in this study led to a revised logic model (Figures 1 and 2). Program components were rearranged to highlight the importance of socio-emotional learning in outdoor education settings. Staff training, time/dose, and the arts were added to reflect their importance according to interviewees. Survey results did not detect significant pre to post test changes in academic motivation or aspiration, but interviews revealed that camp alumni perceived camp experiences to influence their college success, choice of majors, and career trajectories and success.

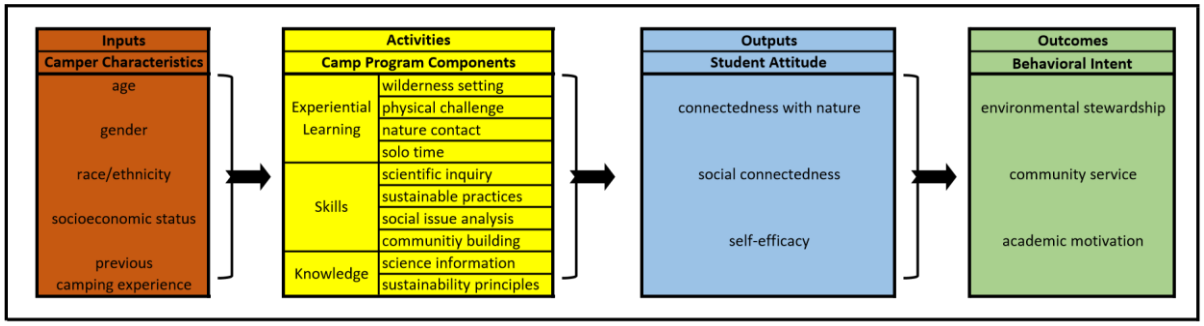


Figure 1: Initial Logic Model

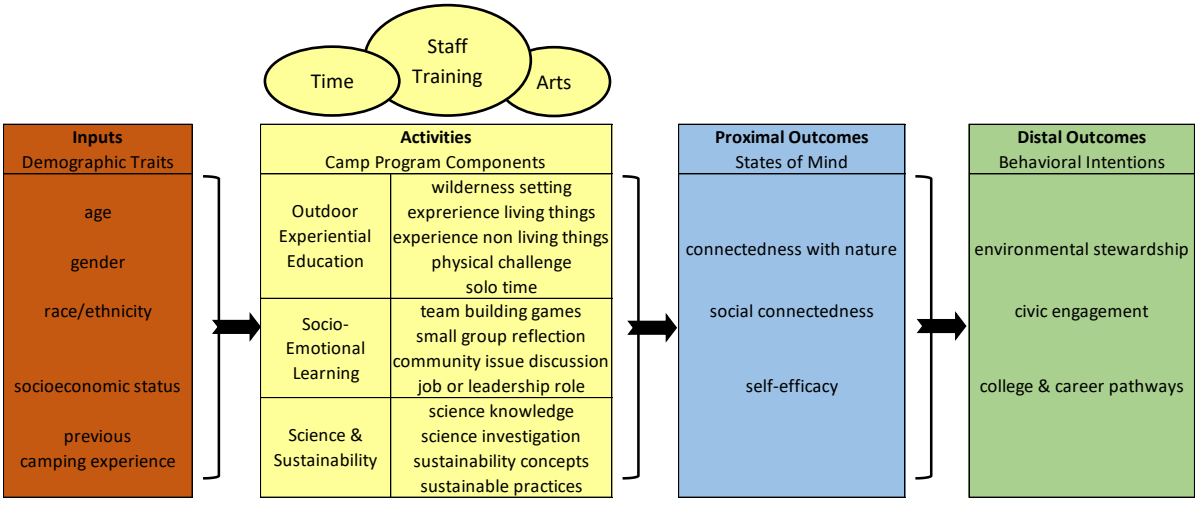


Figure 2: Revised Logic Model

## Appendix C: Survey Questionnaires

Dear Camper,
Your participation in this survey is completely voluntary. If you do not want to answer some or all of the questions, just place this form inside the envelope when you are done. If you don't understand a question, you can ask an adult for help. This is not a test. The purpose of the survey is to improve activities for future campers. Your answers will be anonymous because your name will be removed and your answers will be combined with all of the other campers. Please be honest to help us improve. Thank you!

### Outdoor Education Outcomes Survey (Pre-Camping)

#### Part 1: Who are you?

1. What is your first name?

2. In what month were you born?

3. In what year were you born?

4. What is your race or ethnicity? (Mark all that apply.)

- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Filipino
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or Pacific Islander
- ☐ White
- ☐ Two or More Races
- ☐ Prefer Not To Answer
- ☐ Other (please specify)

5. What is your gender?

- ○ Female
- ○ Male
- ○ Other (please specify)

6. How many times have you been camping before?

- ○ 0
- ○ 1
- ○ 2
- ○ 3 or more

Staff Use Only

Camp:

Date:

Session:

Group:

## Outdoor Education Outcomes Survey (Pre-Camping)

### Part 2: How do you normally feel?

7. How much do you agree with each of these statements about how you normally feel?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I feel connected with nature. | ○ | ○ | ○ | ○ | ○ |
| I feel that I was part of the web of life. | ○ | ○ | ○ | ○ | ○ |
| I feel inspired by the beauty or power of nature. | ○ | ○ | ○ | ○ | ○ |
| I feel connected with adults. | ○ | ○ | ○ | ○ | ○ |
| I felt respected or appreciated by adults. | ○ | ○ | ○ | ○ | ○ |
| I feel connected with the other students my age. | ○ | ○ | ○ | ○ | ○ |
| I feel respected or appreciated by other students. | ○ | ○ | ○ | ○ | ○ |
| I fit in well in new situations. | ○ | ○ | ○ | ○ | ○ |
| I feel comfortable participating in a group activity with strangers. | ○ | ○ | ○ | ○ | ○ |
| I feel I can manage to solve difficult problems if I try hard enough. | ○ | ○ | ○ | ○ | ○ |
| I feel confident I can deal well with unexpected events. | ○ | ○ | ○ | ○ | ○ |
| I feel it is easy for me to accomplish my goals. | ○ | ○ | ○ | ○ | ○ |

## Outdoor Education Outcomes Survey (Pre-Camping)

### Part 3: What do you think about your future?

8. How much do you agree with each of these statements about your future?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I am interested in learning how to protect the environment. | ○ | ○ | ○ | ○ | ○ |
| I will take actions to protect the environment. | ○ | ○ | ○ | ○ | ○ |
| I will speak up to family or friends about protecting the environment. | ○ | ○ | ○ | ○ | ○ |
| I am interested in working to make my community a better place. | ○ | ○ | ○ | ○ | ○ |
| I want to volunteer in my community. | ○ | ○ | ○ | ○ | ○ |
| I can make a change in my community. | ○ | ○ | ○ | ○ | ○ |
| I am interested in learning about new subjects in school. | ○ | ○ | ○ | ○ | ○ |
| I will graduate from high school. | ○ | ○ | ○ | ○ | ○ |
| I will graduate from college. | ○ | ○ | ○ | ○ | ○ |

Dear Camper,
Your participation in this survey is completely voluntary. If you do not want to answer some or all of the questions, just place this form inside the envelope when you are done. If you don't understand a question, you can ask an adult for help. This is not a test. The purpose of the survey is to improve activities for future campers. Your answers will be anonymous because your name will be removed and your answers will be anonymous because your name will be removed and your answers will be combined with all of the other campers. Please be honest to help us improve. Thank you!

## Outdoor Education Outcomes Survey (Post-Camping)

### Part 1: Who are you?

1. What is your first name?

2. In what month were you born?

3. In what year were you born?

## Outdoor Education Outcomes Survey (Post-Camping)

### Part 2: What did you do at camp?

6. How much do you agree with each of these statements about what you did at camp?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I got to be in the wilderness away from human-made things. | ○ | ○ | ○ | ○ | ○ |
| I experienced a physical challenge. | ○ | ○ | ○ | ○ | ○ |
| I had a memorable experience with a living thing like a plant or animal. | ○ | ○ | ○ | ○ | ○ |
| I had a memorable experience with a non-living part of nature like water or wind. | ○ | ○ | ○ | ○ | ○ |

6. How much do you agree with each of these statements about what you did at camp?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I got time to be completely by myself. | ○ | ○ | ○ | ○ | ○ |
| I learned about science or ecology. | ○ | ○ | ○ | ○ | ○ |
| I learned about environmentally friendly actions or ideas. | ○ | ○ | ○ | ○ | ○ |
| I did a scientific investigation or experiment. | ○ | ○ | ○ | ○ | ○ |
| I practiced environmentally friendly actions like recycling or not wasting resources. | ○ | ○ | ○ | ○ | ○ |
| I discussed important problems or issues in my community. | ○ | ○ | ○ | ○ | ○ |
| I played games or did challenges to learn to work together. | ○ | ○ | ○ | ○ | ○ |
| I had important conversations with my group. | ○ | ○ | ○ | ○ | ○ |
| I got a chance to lead my group or do an important job at camp. | ○ | ○ | ○ | ○ | ○ |

7. How much do you agree with each of these statements about how you felt at camp?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I felt connected with nature. | ○ | ○ | ○ | ○ | ○ |
| I felt that I was part of the web of life. | ○ | ○ | ○ | ○ | ○ |
| I felt inspired by the beauty or power of nature. | ○ | ○ | ○ | ○ | ○ |
| I felt connected with adults at camp. | ○ | ○ | ○ | ○ | ○ |

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I felt respected or appreciated by the adults at camp. | ○ | ○ | ○ | ○ | ○ |
| I felt connected with the other student campers at camp. | ○ | ○ | ○ | ○ | ○ |
| I felt respected or appreciated by other student campers at camp. | ○ | ○ | ○ | ○ | ○ |
| I fit in well in new situations at camp. | ○ | ○ | ○ | ○ | ○ |
| I felt comfortable participating in a group activity with strangers. | ○ | ○ | ○ | ○ | ○ |
| I felt I could manage to solve difficult problems if I tried hard enough. | ○ | ○ | ○ | ○ | ○ |
| I felt confident I could deal well with unexpected events. | ○ | ○ | ○ | ○ | ○ |
| I felt it was easy for me to accomplish my goals. | ○ | ○ | ○ | ○ | ○ |

## Outdoor Education Outcomes Survey (Post-Camping)

### Part 3: What do you think about your future?

8. How much do you agree with each of these statements about your future?

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I am interested in learning how to protect the environment. | ○ | ○ | ○ | ○ | ○ |
| I will take actions to protect the environment. | ○ | ○ | ○ | ○ | ○ |
| I will speak up to family or friends about protecting the environment. | ○ | ○ | ○ | ○ | ○ |

| | 1 - strongly disagree | 2 - disagree | 3 - neither agree or disagree | 4 - agree | 5 - strongly agree |
|---|---|---|---|---|---|
| I am interested in working to make my community a better place. | ○ | ○ | ○ | ○ | ○ |
| I want to volunteer in my community. | ○ | ○ | ○ | ○ | ○ |
| I can make a change in my community. | ○ | ○ | ○ | ○ | ○ |
| I am interested in learning about new subjects in school. | ○ | ○ | ○ | ○ | ○ |
| I will graduate from high school. | ○ | ○ | ○ | ○ | ○ |
| I will graduate from college. | ○ | ○ | ○ | ○ | ○ |

## Outdoor Education Outcomes Survey (Post-Camping)

### Part 4: What else would you like to tell us?

9. What was your favorite or most memorable thing about camp?

10. What are your suggestions for improving camp in the future?

# Appendix D: Survey Crosswalk

| Research Questions | | Variables | Pre-Test Survey Questions | Post Test Survey Questions | Scale | Author |
|---|---|---|---|---|---|---|
| RQ4. To what extent, if any, are changes in campers' reports of environmental stewardship, civic engagement, and academic motivation as a result participating in an outdoor education program moderated by students' age, gender, socioeconomic status, or previous camping experience? | **Inputs** Camper Characteristics | | **Pre-Test Survey Question** | | | |
| | | age | What is your age? | | Outdoor Education Program Survey | Frame (2016) |
| | | gender | What is your gender? [male/female/other:___] | | Outdoor Education Program Survey | Frame (2016) |
| | | race/ethnicity | What is your race/ethnicity? [Black or African American, American Indian or Alaska Native, Asian, Filipino, Hispanic or Latino, Native Hawaiian or Pacific Islander, White, Two or More Races, Prefer Not to Answer, Other:__] | | CAASPP Reporting | CA Dept of Education (2016) |
| | | previous camping experience | How many times have you been camping before? [0,1,2,3,4 or more] | | Outdoor Education Program Survey | Frame (2016) |
| | | socioeconomic status | What session and unit are you in at camp? | | Free & Reduced Lunch Program | USDA (2016) |

| | | Domain | Program Components | To what extent do you agree with each of the following statements? [1 - Strongly Disagree, 2 - Disagree, 3 - Neither Agree or Disagree, 4 - Agree, 5 - Strongly Agree] | | |
|---|---|---|---|---|---|---|
| RQ2. What specific components of the outdoor education program relate to campers' reports of environmental stewardship, civic engagement, and academic motivation? | **Inputs** | Experiential Learning | wilderness setting | I got to be in the wilderness away from human-made things. | Outdoor Education Program Survey | Frame (2016) |
| | | | physical challenge | I experienced a physical challenge. | Outdoor Education Program Survey | Frame (2016) |
| | | | nature contact | I had a memorable experience with a living thing like a plant or animal. | Outdoor Education Program Survey | Frame (2016) |
| | | | | I had a memorable experience with a non-living part of nature like water or wind. | Outdoor Education Program Survey | Frame (2016) |
| | | | solo time | I got time to be completely by myself. | Outdoor Education Program Survey | Frame (2016) |
| | | Knowledge | science information | I learned about science or ecology. | Outdoor Education Program Survey | Frame (2016) |
| | | | sustainability principles | I learned about environmentally friendly actions or ideas. | Outdoor Education Program Survey | Frame (2016) |
| | | Skills | scientific inquiry | I did a scientific investigation or experiment. | Outdoor Education Program Survey | Frame (2016) |
| | | | sustainable practices | I practiced environmentally friendly actions like recycling or not wasting | Outdoor Education Program Survey | Frame (2016) |
| | | | social issue analysis | I discussed important problems or issues in my community. | Outdoor Education Program Survey | Frame (2016) |
| | | | communitiy building | I played games or did challenges to learn to work together. | Outdoor Education Program Survey | Frame (2016) |
| | | | | I had important conversations with my group. | Outdoor Education Program Survey | Frame (2016) |
| | | | | I got a chance to lead my group or do an important job at camp. | Outdoor Education Program Survey | Frame (2016) |

| Research Questions | | Variables | Pre-Test Survey Questions | Post Test Survey Questions | Scale | Author |
|---|---|---|---|---|---|---|
| RQ3. To what extent, if any, are changes in campers' reports of enviromental stewardship, civic engagement, or academic motivation moderated by students' self -perceptions of their connectedness with nature, social connectedness, or self-efficacy? | **Outputs**<br><br>Student Attitudes | | **To what extent do you agree with each of the following statements about how you normally feel?** | **To what extent do you agree with each of these statements about how you felt at camp?** | | |
| | | | [1 - Strongly Disagree, 2 - Disagree, 3 - Neither Agree or Disagree, 4 - Agree, 5 - Strongly Agree] | | | |
| | | connectedness with nature | I feel connected with nature. | I felt connected with nature. | Connectedness with Nature | Meyer & Franz (2004) |
| | | | I feel that I am part of the web of life. | I felt that I was part of the web of life. | Connectedness with Nature | Meyer & Franz (2004) |
| | | | I feel inspired by the beauty or power of nature. | I felt inspired by the beauty or power of nature. | Outdoor Education Program Survey | Frame (2016) |
| | | social connectedness | I feel connected with adults at school. | I felt connected with adults at camp. | Outdoor Education Program Survey | Frame (2016) |
| | | | I feel respected or appreciated by adults at school. | I felt respected or appreciated by the adults at camp. | Outdoor Education Program Survey | Frame (2016) |
| | | | I feel connected with other students at school. | I felt connected with the other student campers at camp. | Outdoor Education Program Survey | Frame (2016) |
| | | | I feel respected or appreciated by other students at school. | I felt respected or appreciated by other student campers at camp. | Outdoor Education Program Survey | Frame (2016) |
| | | | I fit in well in new situations. | I fit in well in new situations. | Social Connectedness Scale | Lee (2000) |
| | | | I feel comfortable participating in a group activity with strangers. | I felt comfortable participating in a group activity with strangers. | Outdoor Education Program Survey | Frame (2016) |
| | | self efficacy | I can always manage to solve difficult problems if I try hard enough. | I can always manage to solve difficult problems if I try hard enough. | General Sef Efficacy | Schwarzer & Jerusalem (1995) |
| | | | I am confident I could deal well with unexpected events. | I am confident I could deal well with unexpected events. | General Sef Efficacy | Schwarzer & Jerusalem (1995) |
| | | | It is easy for me to accomplish my goals. | It is easy for me to accomplish my goals. | General Sef Efficacy | Schwarzer & Jerusalem (1995) |
| RQ1. How does participation in an outdoor education experience relate to changes in campers' behavioral intentions toward environmental stewardship, civic engagement, and their level of academic motivation, as assessed prior to and after participating in the camp? | **Outcomes**<br><br>Behavioral Intent | | **To what extent do you agree with each of the following statements about your future?** | | | |
| | | | [1 - Strongly Disagree, 2 - Disagree, 3 - Neither Agree or Disagree, 4 - Agree, 5 - Strongly Agree] | | | |
| | | environmental stewardship | I am interested in learning how to protect the environment. | I am interested in learning how to protect the environment. | Environmental Responsibility Index | Ardoin, et al. (2015) |
| | | | I take actions to protect the environment. | I will take actions to protect the environment. | Outdoor Education Program Survey | Frame (2016) |
| | | | I speak up to family or friends about protecting the environment. | I will speak up to family or friends about protecting the environment. | Outdoor Education Program Survey | Frame (2016) |
| | | community service | I am interested in working to make my community a better place. | I am interested in working to make my community a better place. | Environmental Responsibility Index | Ardoin, et al. (2015) |
| | | | I want to volunteer in my community. | I want to volunteer in my community. | Environmental Responsibility Index | Ardoin, et al. (2015) |
| | | | I can make a change in my community. | I can make a change in my community. | Environmental Responsibility Index | Ardoin, et al. (2015) |
| | | academic motivation | I am interested in learning about new subjects in school. | I am interested in learning about new subjects in school. | Attitudes Toward School | Ardoin, et al. (2015) |
| | | | I will graduate from high school. | I will graduate from high school. | Morgan-Jinks Student Efficacy Scale | Jinks & Morgan (1999) |
| | | | I will graduate from college. | I will graduate from college. | Morgan-Jinks Student Efficacy Scale | Jinks & Morgan (1999) |

## Appendix E: Alumni Interview Protocol

How do camp alumni retrospectively reflect on how their participation in an outdoor education program influenced their orientation toward environmental stewardship, civic engagement, and academic motivation?

Introduction: Thank you for agreeing to participate in this interview. I will just remind you that your participation is completely voluntary and we can end at any time. You may also decline to answer questions or parts of questions without discontinuing your participation in the research. Your answers will remain anonymous, so your honesty is greatly appreciated.

1. Please tell me how you have been involved with ___ camp, starting from your first experiences as a camper.
    a. What years did you attend as a camper?
    b. In what years did you attend camp as a counselor? A volunteer? Staff? With your family? Any other experiences?

2. What were some of your most significant experiences at camp?
    a. Why where these experiences significant to you?

3. What effects do you think your camp experiences have had on you or your life?

4. To what extent, if any, did camp influence your thinking or behavior in any of these ways? It is totally fine if the answers are no or not at all. [environmental stewardship, community service, academic motivation]

5. Do you feel that your race or ethnicity had an impact on your experiences at camp or as a result of camp?
    a. If so, how? (If not, why not?)

6. How, if at all, have your memories, feelings, or thoughts about camp changed over time?

7. Is there anything else you would like to ask, tell me or add to your responses?

Possible Follow- Up Questions

Do you remember learning or participating in any of the following activities? [wilderness setting, physical challenge, nature contact, solo time, science information, sustainability principles, scientific inquiry, sustainable practices, social issue analysis, community building]

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