

A case study of positive youth development through environmental conservation

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Abstract

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This case study investigates the processes by which Positive Youth Development (PYD) occurs in the Generation Green program of the U.S. Forest Service. Data were gathered using the qualitative methods of participant-observation and semi-structured interviews. Fourteen participants were interviewed to understand how youth conceptualize the developmental impact of this environmental conservation program. Using a grounded theory approach, interviews were coded line-by-line, and a constant comparative analysis was performed to develop a conceptual framework for PYD taking place through Generation Green. Five primary themes emerged from participants' accounts of experiences in the program: personal rejuvenation, visceral experiences, supportive relationships, career development, and intrinsic motivation. The cultivation of these assets in youth is facilitated by the dedication of program coordinators and by the rich developmental context of the program. Despite challenges presented by Forest Service administration of the program, Generation Green should be seen as a model for Positive Youth Development in the outdoors.

Table of Contents

Chapter 1: Introduction and literature review	5
1.1 Study motivations	5
1.2 Literature review	8
1.3 Research question	15
Chapter 2: Research design and methods	17
2.1 Qualitative approach	17
2.2 Setting and participants	18
2.3 Data collection	22
2.4 Data analysis	29
2.5 Limitations and trustworthiness	44
Chapter 3: Results and discussion	51
3.1 Overview of themes	51
3.2 Theme 1 – Results and discussion	53
Chapter 4: Implications and recommendations	75
4.1 Overview of implications and recommendations	75
4.2 Theme 1 – Implications and recommendations	80
Chapter 5: Conclusions	96
References	101
Appendices	
Appendix A: Interview consent form	105
Appendix B: Interview protocol	108

Chapter 1: Introduction and literature review

1.1 Study motivations

Before pursuing graduate study in forestry, I taught physics at John Muir High School (Muir) in Pasadena, California (1999-2010). I loved it, and I wish I could do it all over again. But I am still troubled by the claims of educational and social problems were frequently leveled against both the school and the community of Northwest Pasadena throughout the time I worked there (Mehta, 2008). As I lived and worked in this part of the city, I saw firsthand how these “problems” were the really the policy results of a century of exploitation and marginalization by affluent, mostly White residents who sought to confine their servant class and its struggles to the Northwest (James, 2005). Jackie Robinson, for example, attended Muir because Pasadena’s racist housing covenants prevented his family from buying a home elsewhere in the city (Robinson, 1972). Even the more privileged members of Pasadena society suffer from the city’s segregated social conditions—depriving themselves, for example, of relationships with the extraordinary people I met through Muir (McGhee, 2021). And from an ecological perspective, all the residents of Pasadena endure life in an urban environment that does not provide optimal conditions for human development and flourishing (Kahn & Hasbach, 2012). As I struggled to make sense of Muir and Pasadena throughout my teaching career, I often reflected on my own upbringing in rural, upstate New York. There, Nature played a central role in the development of my interests and values, and it was a source of restoration during periods of family discord. I learned from talking with my students that many of them had little access or prior exposure to Nature. When our school was at risk of state intervention

due to low test scores, I thought to myself, “I have to believe these kids would perform better in a healthier physical environment, like the one I was lucky to have while growing up.”

This motivated me to apply for a grant to take ten students camping in Yosemite National Park during a four-day weekend. During this trip, I noticed a renewed sense of joy and curiosity among the students; they were amiable and appreciative of the experience. Aside from trying to get ten excited teenagers to fall/stay asleep in tents for the first time, we had no problems (and I had intentionally invited kids who could have created mischief). With the support of two colleagues and the blessing of the school district, these Yosemite trips became an annual affair for a few years, and I became convinced that I was on to something.

Unfortunately, I didn’t have the capacity to scale this program up to serve more students while teaching full time. By 2010, it was time for a change of scenery and career, and I decided that pursuing environmental education/conservation would allow me to address an urgent social need—access to Nature for students of color in urban areas—while drawing upon my personal strengths and interests. I don’t know how to address all the complex issues facing John Muir High School and the Pasadena community, but I think the best place to start would be for community members of all backgrounds to take a walk in the woods together. And I think John Muir would agree.

In my search for a research project that would be meaningful, I thought about the problems (or claims of problems) in urban education, and I found myself asking, “What is at the root of all this? What are the most fundamental things we need to address?” With the benefit of some distance from the classroom and with the opportunity to spend more time outdoors, it dawned on me that many of our educational and social problems are really the result of the

unhealthy ways in which we interact with our environment and each other. We are an incredibly adaptable and resilient species, but to maximize everyone's well-being (including that of our friends with fur, feathers, and fins), how *should* we be living? To address this question, I think we need to ask, "Who are we as a species?" For most of our ~400,000-year history, *Homo sapiens* lived as hunter-gatherers in small, cooperative groups which met their needs using the plants, animals, and materials available on the landscape (Boyd and Silk, 2012). Contrary to the common misconception of pre-modern humans as primitive, archaeological evidence suggests that hunter-gatherers may have been the original "affluent society" (Sahlins, 1972). Anthropologists have estimated that it took hunter-gatherers only a few hours each day to meet their basic physical needs of food, water, and shelter; this would have left them plenty of time for satisfying higher needs through social activities, music, and art (Sahlins, 1972). But with the advent of agriculture ~10,000 years ago, life changed dramatically for many societies around the globe. Humans established permanent settlements of increasing size and complexity (Wenke and Olszewski, 2007), and hierarchical systems became necessary to coordinate the activities of a larger populace. These new social structures led to the concentration of power in the hands of relatively few elite individuals—chiefs and priests—who often exploited the populace to achieve greater physical comfort and social status for themselves (Diamond, 1987). With the establishment of permanent homes, it became possible for humans to accumulate material wealth in quantities that would have been disadvantageous for hunter-gatherers. The collectivism that worked well for small, itinerant groups gave way to jealousy and competition within expanding settlements (Wenke and Olszewski, 2007). Extrapolating and fast-forwarding to the present, we find ourselves in a highly urbanized world

that is experiencing destabilizing climate change because of two-hundred years of material consumption by industrialized nations. Any serious effort to remedy this situation must involve changing the way we educate our youth (Orr, 2004). So how *should we* educate our young people going forward?

1.2 Literature review

Formal classroom education is a very recent invention in the history of *Homo sapiens*. For 99.5% of human history, children were taught by their parents and extended family in the context of performing the daily tasks necessary for survival (Rogoff, 2014). Whether it was hunting and gathering or farming, Nature provided the developmental context in which youth could master skills and have nurturing relationships with elders. But the rapid industrialization of the 19th century brought dramatic changes to youth development in the United States (Dewey, 1900). As an increasing number of adults spent their days working in factories, public schools were established to educate and to care for children. The first secretary of education for Massachusetts, Horace Mann, had noble intentions—civic virtue, egalitarian democracy—as he developed and promoted America’s fledgling common schools, but he chose to model them on the Prussian system (Kaestle, 1983). This factory-industrial model, with its emphasis on obedience to authority and structuring time with bells, was soon adopted by other states and remains the dominant paradigm in American education today. While this model may be efficient for delivering basic instruction to a large group of students, it is not designed to foster all the developmental outcomes needed by young people and now expected from schools. When these early public schools were established in the mid-1800s, there was opposition from

many parents who did not want to give up raising their children (Kaestle, 1983). Today, by contrast, most parents expect schools to play a significant role in the raising of their children because they must work long hours to provide for their families in a highly competitive, globalized economy. Although this arrangement may increase American economic output, it is not without considerable social costs.

In modern American culture, we tend to accept that adolescence is an innate period of rebellion when teenagers experiment with risky behaviors. But if we examine other cultures, past and present, we find that this is not a biologically predetermined outcome. According to the anthropologist Margaret Mead (1928), “Adolescence is not necessarily a time of stress and strain, but that cultural conditions make it so.” Pioneering child psychologist G. Stanley Hall (1904) noted that, “Juvenile crime shows thus the great difficulty which youth find in making adjustments to the social surroundings, and so far as the law takes cognizance of it, it very often begins as the outcrop of the vagrant instinct which the requirements of the modern school bring out in strong light.” American society began to problematize adolescence in earnest at the turn of the twentieth century, and throughout the succeeding decades, there was a tendency to regard many youth problems—substance abuse, teen pregnancy, crime, truancy—as separate subjects. As local, state, and federal governments sought to deal with these issues, each problem behavior evolved its own community of public agencies, non-profit organizations, and researchers who sought to treat and prevent these presumably distinct behaviors (Hamilton et al., 2004). By the 1990s, however, it was evident to scholars and practitioners of youth development that the single-issue approach was ineffective at remediating these harmful behaviors. This finding led to a sea change in thinking about youth

development—away from a deficit mentality which emphasizes problems and toward a positive/assets approach that stresses the basic needs of all youth. We now understand that both positive and negative youth outcomes are driven by the same set of risk/protective factors and that “problems” like substance abuse are better treated as symptoms of deeper, unmet needs (Catalano et al., 2002).

Starting in the 1990s, scholars and practitioners with this mindset have identified their work as Positive Youth Development. Positive Youth Development (PYD) is a broad, interdisciplinary field united around a strengths-based approach to empowering youth with community support. Two organizations have conducted comprehensive syntheses of the research and best-practices in PYD—the Search Institute and the Committee on Community-Level Programs for Youth (Benson et al., 2006). The Search Institute is a Minneapolis-based non-profit which conducts research and provides training on youth development. They have promoted the phrase/concept of “developmental assets” to describe the factors which contribute to positive youth outcomes. The Search Institute has organized their findings into the “40 Developmental Assets” framework; examples of these assets include: adult role models, service to community, decision-making skills, and sense of purpose (Search Institute, 2014). The Search Institute has also produced a Developmental Relationships Framework to guide practitioners in working with youth; examples of qualities found in good mentoring relationships include: warmth, collaboration, challenge, and horizon-expansion (Search Institute, 2014). The Committee on Community-Level Programs for Youth (CCLPY) was convened by the National Research Council and the Institute of Medicine of the National Academy of Sciences. Like the Search Institute, the CCLPY has categorized their PYD findings

into the “Personal and Social Assets” framework. The assets are classified according to physical, intellectual, psychological/emotional, and social development; examples of these assets include: vocational skills, mastery motivation, sense of autonomy/responsibility, and connectedness (Eccles & Gootman, 2002). The CCLPY has also described the common features of PYD settings; examples of such features include: supportive relationships, opportunities to belong, support for efficacy and mattering, and integration of family/school/community efforts (Eccles & Gootman, 2002). There is considerable overlap in the developmental frameworks produced by the Search Institute and the CCLPY—evidence of the broad agreement which has emerged regarding the basic developmental needs of youth. The challenge for practitioners, however, is to create settings which bring these principles to life (Hamilton et al., 2004).

Because PYD is such a broad field, the phrase “positive youth development” can mean different things to different practitioners. Hamilton et al. (2004) provide an overview of the various usages, and they classify them according to principles, practices, and processes. Concerning principles, PYD is committed to the belief all youth deserve the opportunity to thrive; Positive Youth Development holds that all youth have similar innate needs and that all youth are capable of personal growth. This stands in contrast to the deficiency perspective on adolescence which focuses on eliminating problem behaviors. Positive Youth Development also recognizes that the absence of overt problems does not mean that youth are equipped to thrive; practitioners of PYD strive to help young people build strengths/assets which are beneficial on their own and which can be leveraged by youth for further personal growth. Regarding practices, PYD refers to the wide variety of organizations, programs and activities which apply the principles of PYD to create the contexts in which youth development occurs.

Youth development takes place in many different settings—families, schools, churches, athletic teams, community groups—and through many different practices, but the principles are the same (universal needs, asset building). Concerning processes, PYD refers to the actions, interactions, and personal changes through which a young person gains an enhanced ability to understand and to take meaningful action in the external/internal world. Ideally, Positive Youth Development sets a young person on a path toward a healthy, productive, and fulfilling life—one that could be characterized as thriving.

I am particularly interested in the process dimension of PYD because I think this is where the traditional model of classroom education in America falls short. As a high school science teacher during the No Child Left Behind era, it made me sad to see education reduced to rote test preparation that placed no value on authentic inquiry, creativity, relationships, or any of the things that should make school uplifting and inspiring. At my high school, the consultant-driven method for demoralizing both students and staff was called “Explicit Direct Instruction”—an expensive, trademarked technique for compelling a teacher to monopolize the classroom and lecture three-dozen teens (who saw through the whole charade) about what they needed to know for high-stakes tests whose primary impact was to make learning less enjoyable (Hollingsworth & Ybarra, 2017). Needless to say, the resulting test scores cast doubt on the wisdom of teaching by a method that willfully ignores the ways in which real people learn and grow. There is certainly a place for some direct instruction (lecture) in school, but as the primary mechanism for student-teacher interaction, it does not address the many developmental needs of high school students (Larson, 2000). If we look at the key developmental assets cited by the Search Institute and the Committee on Community-Level

Programs for Youth, it's obvious that many of them are difficult to foster in a traditional classroom setting—for example, service to others, autonomy and responsibility, sense of a larger purpose in life, the ability to navigate multiple cultural contexts, strong moral character, sense of social justice, relationships with adult role models, self-efficacy, and mastery motivation. Viewed through the lens of Urie Bronfenbrenner's ecological systems theory, the American high school classroom seems to provide a very limited context for youth development, especially when compared to other cultural contexts throughout human history (Bronfenbrenner, 1979). As I argued previously, I think that Nature provides an excellent context for youth development because it allows for rich experiences which integrate the many domains of youth development.

While Nature alone has much to offer, it is not sufficient for youth development. Because humans have evolved to reach maturity through social interaction, Positive Youth Development must involve nurturing relationships among youth and caring adults. The nature, duration and frequency of these interactions matters a great deal, and researchers have only recently started to explore the methods by which environmental educators can facilitate PYD through environmental conservation. In their qualitative study of nine youth environmental conservation programs in New York State, Schusler and Krasny (2010) find themes that resonate with the asset frameworks of the Search Institute and the CCLPY—trusting relationships with adult mentors, challenging and engaging work, safe and calming green spaces, and support with goal setting and decision-making. However, I do not find studies that explore in depth how youth themselves interpret the impact of these environmental conservation experiences on their personal development. I believe that such an investigation is

necessary because, regardless of adult intentions, youth create their own personal understandings of life experiences. According to the psychologists John Dewey and Jean Piaget, the meanings that youth construct depend on their prior knowledge and existing schema (Kahn, 1999). Because knowledge and schema are unique to individuals, we need to ask youth how they conceptualize their experiences to better understand the impact of environmental conservation programs.

Further, given the central role of work in modern life and the inherent limitations of school in preparing youth for work, I think we should be particularly interested in understanding the ways by which effective conservation programs help youth to prepare for their future careers. Within the frameworks produced by the Search Institute and the Committee on Community-Level Programs for Youth, certain youth assets and program features stand out as particularly significant to career development. I list them here so that we can be on the lookout for them within this study. Assets from the Search Institute's (2004) "40 Developmental Assets" which pertain to career development include:

"Other Adult Relationships – Young person receives support from three or more nonparent adults; Adult Role Models – Parent(s) and other adults model positive, responsible behavior; High Expectations – Both parent(s) and teachers [and program staff] encourage the young person to do well; Achievement Motivation – Young person is motivated to do well in school [and in the program]; School Engagement – Young person is actively engaged in learning [in the program]; Responsibility – Young person accepts and takes personal responsibility; Planning and Decision Making – Young person knows how to plan ahead and make choices; Positive View of Personal Future – Young person is optimistic about her or his personal future."

Reviewing the CCLPY's (2002) "Features of Positive Developmental Settings," program attributes which support career development include:

"Appropriate Structure – Structure that is developmentally appropriate with clear expectations for behavior as well as increasing opportunities to make decisions, to

participate in governance and rule-making, and to take on leadership roles as one matures and gains more expertise; Supportive Relationships – Opportunities for adolescents to experience supportive adult relationships; Opportunities for skill-building and mastery – Exposure to intentional learning experiences and preparation for adult employment.”

Taken together, these developmental assets and features of positive developmental settings provide a useful lens through which to understand the career development experienced by youth participating in environmental conservation programs.

1.3 Research question

In my search for a model youth conservation program where I could explore these ideas, I considered several Seattle-area possibilities including Seattle Youth Garden Works, where I volunteered for several months. However, none of these programs seemed like quite the right fit for my research interests because they did not offer youth exposure to wild Nature—the chance to leave the city behind and experience a more natural physical environment. As fate would have it, I found exactly what I was looking for almost by accident during a visit to the Muir campus in early 2014. On my way to visit the new physics teacher, I saw a student wearing a Youth Conservation Corps t-shirt, and I took the opportunity to ask him about the shirt. To my amazement, I learned that the very program I wished for while teaching at Muir had arrived in 2011 when the Forest Service selected the school as one of three southern California sites for its Generation Green program. The program was designed to be a liaison between the U.S. Forest Service and underserved communities (USFS, 2013); through Generation Green, youth have opportunities to explore both the Great Outdoors and careers in

natural resource management while working with a Forest Service mentor from the local community.

After identifying Generation Green as a research interest, I spoke with the program's staff about serving as a volunteer during the 2014 summer fieldwork program, which became known as "Careers in Conservation" (CIC) that year. It was agreed that I would tag along for the duration of the six-week program, working alongside youth as a participant in the program and assisting staff as necessary. Ultimately, I found my niche as the program's documentary photographer, taking pictures that would capture fond memories for the participants and help the Forest Service to promote the program both internally and externally. Once the CIC program ended, I returned to Seattle to reflect on my experiences and to devise a research project that would benefit the Generation Green program. I didn't want to use the program and its participants simply to satisfy my academic requirements; I wanted to contribute something of equal value in return, and I also wanted to build support for outdoor education at John Muir High School. The experiences we shared in Generation Green had a profound impact on all of us—youth and staff alike; the program affected each of us in our own way, and yet, we all grew in the same kinds of ways. Something special was happening here, and I wanted my study to tell that story. To allow the youth to drive the narrative, I decided that I would interview them about their experiences in the Generation Green program. I was interested in learning what effect they thought the program had on them and how it had that effect. Specifically, I wanted to know how youth perceived the impact of the Generation Green program on their career development. In fancier language, my central research question is:

How do Generation Green youth conceptualize the developmental impact of this environmental conservation program, particularly concerning career development?

Chapter 2: Research design and methods

2.1 Qualitative approach

To explore this question, I used the case study approach to qualitative research (Merriam, 2009). I selected this method because my research question (“How?”) strives for a deep understanding of the mechanisms by which youth build strengths and assets through Generation Green program and because human development is a complex process which involves the interaction of numerous factors over the course of time (Benson et al., 2006). Yin notes that the case study approach is well-suited for exploring “operational links needing to be traced over time” (Yin, 2014). Further, the phenomenon of youth development in Generation Green is embedded in the specific context of this program—in the real-life interactions among individual youth and their Forest Service mentors and in their collective engagement with the unique ecosystems of southern California. According to Yin, case study is especially useful when “the boundaries between the phenomenon and context may not be clearly evident” (Yin, 2014). Merriam defines a case study as an “in-depth description and analysis of a bounded system” (Merriam, 2009). I have defined my case as one of positive youth development through environmental conservation; this youth development is inherently bounded by its occurrence within a discrete program (Generation Green) that has a limited membership and a

geographic location (students at John Muir High School) (Merriam, 2009). I have identified the participating youth (past and present) collectively as my unit of analysis (Patton, 1990).

2.2 Setting and participants

The setting of my case study is the Generation Green program of the U.S. Forest Service provided at John Muir High School. Generation Green seeks to engage diverse youth, ages 14-21, in career development and personal growth through environmental education, public outreach and ecological restoration (U.S. Forest Service, 2013). During the school year, youth participate in Generation Green activities after school and on weekends; these events include day hikes and camping trips, campus beautification, college and career mentoring, and community service. During the summer, full-time internships with the Forest Service are available, and participants engage in fieldwork throughout the Angeles National Forest.

The Generation Green program is unique to the Pacific Southwest Region of the Forest Service as it was established as part of the Court-supervised settlement of a lawsuit against Forest Service by Hispanic employees who argued that “Region 5’s selection process unlawfully discriminated against Hispanics, and that they were under-represented in the Region’s workforce” (U.S. Forest Service, 2006). The program began in 1996 in California’s agricultural Central Valley where it sought to provide education and employment options to the children of farmworkers. In 2006, Generation Green was expanded to sites in northern and southern California at the recommendation of the settlement’s Court-appointed monitor (*Brionez v. United States Department of Agriculture*). In southern California, the program is headquartered at the Supervisor’s Office of the Angeles National Forest in Arcadia; the program also maintains

field offices at three local high schools so that program coordinators can develop and maintain strong relationships with participating youth. John Muir High School has been fortunate to host the Generation Green program for the past ten years. I have chosen to study and to work with the Muir Generation Green program for several reasons: 1) my past experience as a science teacher at Muir enables me to be a more authentic participant-observer, 2) my familiarity with the school's staff and operations makes it easier to meet with students for interviews, and 3) I wanted to give back to my school and community by supporting Nature access through Generation Green, in addition to conducting my research,

Before conducting any interviews for this study, I carefully considered how I could sample program participants to yield a narrative of PYD in Generation Green that would be credible enough for readers to engage in what Stake calls "naturalistic generalization." This phrase captures the idea that readers naturally transfer the insights from a well-written case study to other settings, even though this method is not generalizable in the scientific sense (Stake, 1995). The Positive Youth Development occurring through Generation Green at John Muir High School is special because it is the result of individual students, staff, community members and landscapes coming together in unique ways for a series of transformative moments that will happen only once. In that sense, the PYD of Generation Green at Muir can never be replicated, but the *kinds* of PYD processes that are happening and the contexts that facilitate these processes can be brought to life by thoughtful practitioners in different settings.

With the goal of encouraging readers of this study to engage in naturalistic generalization, I used maximum variation sampling to request interviews with youth who represented the widest range of responses to Generation Green that I could determine

(Creswell, 2013). That is, I sought interviewees who were as different from each other as possible with respect to all the characteristics that might interact with Generation Green's impact. For example, I wanted to talk to youth who had significant exposure to Nature while growing up and youth who were rarely able to venture outside of Pasadena; students who sought out the Generation Green program after reading the school handbook and students who joined the program only because their friends were doing it; youth of all ages, genders, ethnicities and identities; youth who excelled in school, and youth who struggled academically; youth who spent four years in the program, and youth who participated in only a few events.

Before starting my interviews in the spring of 2015, I sought to identify all the students who had participated in the program prior to the start of my volunteer service in 2014. I did this so that, as part of my maximum variation sampling strategy, I could solicit interviews from all the youth who had ever participated in Generation Green at Muir. By sifting through Forest Service files in the program's office at Muir and by talking with 2014 participants about their knowledge of prior program years, I was able to reconstruct a list of 18 students who received summer internships from 2011-2013 (this sleuthing was necessary because the founding Generation Green program coordinator for Muir departed for another job just as I started writing my thesis proposal). After studying the rosters of youth who had attended Generation Green meetings, events, and outings during the 2011-2014 school years, I decided to focus my interviews on youth who had participated in the summer "Careers in Conservation" (CIC) program to ensure a baseline of common experience. "Careers in Conservation" is the heart of the Generation Green program, and it was remarkably consistent from year to year in the types of developmental experiences it provided for youth despite changes in Forest Service staff.

From 2014 to 2019, there were a total of 84 interns in the summer “Careers in Conservation” program. The number of participants varied slightly from year to year based on the funding available but averaged 14 youth per summer during the five years that I was directly involved with the program.

The demographics of program participants likewise varied from year to year but over the program’s ten-year history at Muir, they reflect the student body of John Muir High School, which is roughly 25% African American and 75% Latino/a. Overall, the program also served approximately an equal number of male and female students, although this too varied annually due to inevitable randomness in the ways by which students found their way into the program (students often joined the program in clusters of 3-5 youth when one individual wanted to share the experience with her/his friends). I had hoped to interview 20 current and past participants of the Generation Green program to capture as much variation in the experiences of youth as possible. However, as the time required to analyze these interviews in-depth mounted, I found myself able to manage 14 interviews—short of my initial goal, but beyond the point at which my conceptual framework was “saturated” with data (Charmaz, 2014). Detractors of qualitative research might balk at my small sample, especially given that I purposely interviewed program participants who were maximally different from each other. But Patton notes that, “Any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared aspects or impacts of a program” (Patton, 1990, pg. 172).

2.3 Data Collection

Case study, as a qualitative method of research, does not require a particular procedure for gathering data, and qualitative practitioners use a wide variety of techniques depending on the nature of the investigation (Merriam, 2009). I chose semi-structured interviews and observations of program activities as my primary means for gathering information about the processes of Positive Youth Development taking place through the Generation Green program. Because the focus of my study—how youth conceptualize their developmental experiences in Generation Green—involves understanding the thoughts of participants, I was primarily interested in learning from them through interviews. But to do this effectively, I first had to determine what questions would elicit the most useful responses; I also needed the ability to ask good follow-up questions based on an understanding of participants' experiences. This led me to spend the summer of 2014 as a participant-observer in the "Careers in Conservation" program where I worked alongside youth as a CIC crew member for the duration of the six-week program. By doing so, I was able to better understand the connections between the everyday activities of the Generation Green program and the insights shared by youth during our interviews (Yin, 2014). As Merriam (2009) notes, knowledge of behavior and activities can be a "particularly helpful strategy for understanding ill-defined phenomena." Using observation in conjunction with interviews also helps to triangulate findings and to increase the validity of such data (Merriam, 2009). I certainly found that my volunteer work as a participant-observer was helpful toward establishing trusting relationships with youth grounded in our shared experiences; this enabled me to obtain consent for interviews readily, and it led to interviews that seemed to flow naturally.

To conduct my observations of youth development in Generation Green, I volunteered with the program extensively from 2014 until 2019. During the summer, I worked with the “Careers in Conservation” program full-time, and during the school year, I attended nearly all the after-school club meetings, community service events, hiking/camping trips, and other program activities. I didn’t keep an exact record of the number of hours I contributed because I just enjoyed working with the youth, but the Forest Service recognized me with a certificate at 1,500 hours of volunteer time. I didn’t set out to stay so long, but two factors led to this: 1) Generation Green was the most rewarding work/learning experience of my life, and I wanted to be a part of the program for as long as possible, and 2) I felt an obligation to share with new coordinators what I’d learned about Generation Green’s best practices so that youth could have the best possible experience.

I tried to put myself in the shoes of participants as much as possible because I wanted to understand how youth experience the Generation Green program. On the continuum of observation-participation, I chose to be a full participant in the CIC portion of the program, working at the same tasks as youth for about eight hours each day during (Glesne, 2011). When I was new to the program, it was a challenge to stay in-the-moment as an authentic participant while simultaneously making mental notes things that seemed relevant to my research question. I tried to bring fresh eyes to each day of field work so that I could make careful observations of the program activities, the physical setting, the participants and their behaviors/interactions, and my own thoughts/behaviors (Creswell, 2013). Since the precise mechanisms of Positive Youth Development are not fully understood (and sometimes not directly observable), I was looking for evidence of features which have been shown to support

PYD in other settings, such as support for efficacy and mattering, opportunities for skill building, supportive relationships, etc. (Benson et al., 2006). I was also particularly interested in the role of Nature as a context for PYD, so I was always on the lookout for ways that the natural environment facilitated these processes.

To record my observations, I kept a small notebook in my backpack. I tried to be seen scribbling as little and as infrequently as possible so that program participants would not feel as if I was writing notes them. Yet, I still wanted to have a thorough record of what I had observed on a particular day, so within a few days of starting my fieldwork, I invented my own system of shorthand where I could jot down a few key words or phrases to jog my memory about what I had observed for 20-minute stretches of time (Glesne, 2013). With that system in place, I was able to use spare moments in the workday, such as hourly water breaks, to write down enough key words that I could later retrieve most of the day's observations from my head. The best memory aids for my research, however, turned out to be the photographs I took for the youth because I knew they would appreciate having these fond memories preserved in pictures. When I returned home from field work each day, I wrote a "thick" description of the day's events to capture them in as much detail as possible while everything was fresh in my mind (Glesne, 2013; Merriam, 2009). In addition, I wrote analytical memos to facilitate the process of constructing meaning from these observations. And to explore my personal reactions to everything I experienced, I kept a research journal where I tried to understand how my own identity inevitably shapes my observations and analyses.

During my first few weeks of participant-observation, I felt overwhelmed trying to record everything I observed because I didn't know what things would turn out to be significant

and because I couldn't attach these observations to an existing theory of PYD through environmental conservation. Gradually, however, the process of making observations, analyzing them, and reflecting on my thought processes yielded insights that appeared durable enough to serve as a preliminary conceptual framework. In this model, there were three main themes: 1) social and community capital, 2) motivation and mastery, and 3) schema and being. Beneath these were six sub-themes: 1) caring adults, 2) structured fellowship, 3) contextual continuity, 4) youth voice, 5) making a difference, 6) building skills, 7) revising schema, and 8) being present. Comparing this early conceptual scaffold to my finished theory shows that, while I developed some useful ideas through my own observations and analyses, so much of what I sought to know about PYD in Generation Green was taking place in the minds of participants and was simply unobservable to me.

This made the second phase of my data collection, interviews with youth, essential to understanding the Positive Youth Development taking place in Generation Green. I conducted one interview with each of the 14 participants in my study; interview sessions lasted between 50 min and 2 hr 30 minutes, depending on the level of detail each youth provided when answering my questions (the typical interview lasted about 1 hr 15 min). Although Yin (2014) recommends using unstructured interviews for case studies, I chose the semi-structured format so that I would have an easier time coding comparable data. I did, however, follow Yin's (2014) counsel that an interview should unfold more like a "guided conversation" than a formal questioning. I believe I succeeded at this because participants talked at length and seemed glad to share their experiences in the Generation Green program; I enjoyed these conversations as well because we were reflecting on good memories of common experiences. To ensure that I

was not misreading participants or taking advantage of their goodwill, I informed youth at regular intervals after the 45 min mark that we could wrap up whenever they needed to leave. No one took the opportunity to depart when I first made statements like, “I should let you go now...” or “Don’t let me keep you...”.

When designing my interview protocol (Appendix B), I followed Merriam’s (2009) advice by asking fewer, more open-ended questions so that participants could share what program experiences were most meaningful to them. Merriam (2009) notes that the main types of good interview questions concern the following information: experience and behavior, opinions and values, feelings, knowledge, sensory questions, and background/demographics. All these types of questions are relevant to Positive Youth Development—and I used them all to varying degrees—but I was particularly interested in the experiences youth had in the Generation Green program and how they felt these experiences changed them. If I had to reduce my interview guide to just two questions, they would be these: 1) Can you tell me about some of your most meaningful experiences in the program? What made these experiences so important to you? and 2) What kind of changes do you see or feel in yourself as a result of participating in this program? How did the program help these changes to happen? These two questions alone allowed participants to talk comfortably and at length about a wide variety of topics, with little effort required from me beyond gently steering the conversation to areas where participants seemed to have particularly valuable insights to offer. In addition to the primary questions in my interview protocol, I used a variety of probing questions to guide youth in elaborating on topics of interest. For example, if a participant talked about having meaningful experiences with Nature through the program, I would follow up with questions

like, “How did that feel?” or “What was it like to be there?” In most cases, this yielded rich descriptions of an emotional or sensory nature that were fertile ground for further probing. When a participant would recount a truly profound experience, such as visiting Yosemite for the first time, their body language—often a deep sigh of relief—usually said more than their words. These physical cues were a good indicator of whether a participant had more information to share about a particular topic or whether our interview time was better spent in other areas.

At the outset of this project, I hoped that my study would shed light on the significance of Nature for youth development and that program participants—especially those without much experience outdoors—would find their time in the Angeles National Forest refreshing and inspiring. After all, environmental conservation work provides an array of stimuli—the smell of leaves and soil, the sound of a running stream, feelings of awe and wonder—that is very much intertwined with human biology and our evolutionary history. But in crafting my interview questions, I realized that I could not assume youth had positive feelings about their time outdoors. If program participants had indeed found their Nature experiences influential, I wanted those stories to come from participants naturally in response to open-ended questions like, “Can you tell me about the most meaningful experiences you’ve had in this program?” rather than from leading questions like, “How did the Nature component of this program influence you?” Consequently, I was pleased by the quantity and quality of the anecdotes that participants shared regarding the positive impact of Nature, without the need for specific prompting. I received so much information on this topic that it became necessary to revise my conceptual framework to introduce a separate category/theme for the various aspects of the

relief/restoration that youth shared. In doing so, I discovered that this new primary theme—later retitled “Rejuvenation”—began to pull sub-themes away from my existing categories. With my logic for this framework dissolving, the scaffolding for my theory of PYD in Generation Green soon collapsed in a heap. This was disheartening because I had become attached to it through what felt like an exhaustive analysis of my participant-observation notes, photographs, and memos. At the same time, I was happy to be learning interesting and significant things during my interviews with the youth. I realized then that my conceptual framework needed to be entirely reconstructed following more interviews and a lot more analysis. But, I took comfort in feeling that I was at least asking the right questions and getting very useful information from participants.

To ensure that participants felt comfortable meeting me for interviews, these conversations were held in two familiar, public locations--the Eaton Canyon Nature Center, where youth convened each morning for CIC, and Perry’s Joint, a family-run café near Muir that is frequented by Muir students and staff. I recorded the interviews using a digital voice recorder, and I transcribed them verbatim, being careful to preserve every artifact of speech as an aid to later analysis. The quotations presented here have been lightly edited for clarity; I removed false starts, stuttering, and hesitation words like “uh/um” when they obscured a participant’s meaning or manner of speech. All interview subjects gave their informed consent to participate in this study; before conducting each interview, I carefully explained the purpose of the study, the interview procedure, the possible risks and benefits of participation, and procedures for ensuring confidentiality (see Appendix A). I consulted with the University’s Human Subjects Division (HSD) to determine if my study required Institutional Review Board

(IRB) approval, and upon completing the HSD worksheet “Human Subjects Research Determination,” I made the assessment that because my case study of PYD in Generation Green is not designed to produce generalizable knowledge, it does not require IRB review as federally regulated research (Human Subjects Division, Office of Research, University of Washington, 2021). Interview subjects were not compensated monetarily for their time, but each participant did receive a flash drive containing the transcript and the audio recording of his/her interview. I thought that I might need to provide an incentive to secure interview participation from youth, but this proved to be unnecessary. Knowing that the interviews would go toward improving the program, participants gave generously of their time and seemed to genuinely enjoy reflecting on their experiences in Generation Green.

2.4 Data Analysis

I used the sociological tradition of thematic analysis to distill and interpret the accounts youth shared with me of their experiences in the Generation Green program. Although my study may not constitute grounded theory research as defined by true practitioners, I have tried to construct a theory of PYD in Generation Green using participants’ accounts of their personal development through the program. I had two reasons for doing this: 1) I could find no pre-existing theory that explains how PYD occurs through environmental conservation work, and 2) the PYD happening through Generation Green at Muir / the Angeles NF is unique to the people and places of this specific program (hence, the case study approach). As a classroom teacher, I found that my students had a wealth of information to share about how things really worked at our school; unfortunately, the school system simply did not value their insights

enough to ask students in any systematic way how we could better serve them. Given what I've learned from my interviews with Generation Green youth, I wish now that I could go back and do certain things differently as a teacher. The ideas that were shared with me during these conversations profoundly changed what I think the purpose, methods, and outcomes of K-12 education ought to be. The youth that I worked with and that I interviewed for this study understood very well what developmental supports were helpful to them and, perhaps more importantly, *how* they were helpful. It is this story—the *how* of PYD in Generation Green—that my study aims to tell. I hope that my analysis of these interviews will honor the life experiences of the youth who generously shared them with me and that the Forest Service will listen to the very important story Generation Green has to tell.

To keep track of all my data (observation notes, analytic and reflective memos, photographs, and interviews), I created a case study database, maintaining copies of records both electronically and in hardcopy (Yin, 2014). Data analysis started after my sixth interview because I had received so much information by that point that I needed make sense of it before proceeding. Lacking any experience with or intuitive feel for qualitative coding, I began by marking portions of text that exemplified the themes and sub-themes of my preliminary conceptual framework. I soon discovered that this did not feel like the right approach, but I tried to muddle through in hopes of having an epiphany during the process. Repeatedly, however, I was faced with the dilemma of how to categorize important ideas that didn't fit neatly into my preliminary theory of PYD in the program. For example, many youth talked about how their public speaking experiences in Generation Green led to improved self-confidence and greater intrinsic motivation in other areas of their lives, gains which in turn

catalyzed further personal growth. Had I shoehorned anecdotes around public speaking into the “Youth Voice” theme of my preliminary conceptual framework, I could have produced a plausible-sounding narrative of PYD—after all, public speaking does give youth a chance to influence the program by sharing their ideas with the group.

But coding participants’ experiences of public speaking in this manner would have failed to capture the more significant internal changes that were happening for youth as they gained proficiency articulating their ideas to peers and mentors through real-life conservation projects (this will be discussed further in the Results section). From the fascinating personal accounts that participants had shared with me, I knew there was an important story to tell about the youth development happening in Generation Green, but I was not making much progress toward understanding *how* Positive Youth Development was happening in the program. I had hoped that the experiences recounted by youth during our conversations would be the building blocks of a cohesive narrative of PYD in Generation Green. But instead, these compelling anecdotes just looked on paper like isolated incidents as I tried to fit them into my preconceived framework. I held out hope that maybe that maybe I was missing something, that maybe I just wasn’t seeing the big picture yet. But at the same time, because of problems I had observed in the program’s upper management, I also began to fear that maybe I wouldn’t find a grander story to tell—that maybe the program was simply a series of one-off, positive experiences that didn’t deliver synergistic or compounding benefits for youth in any systematic way. I felt totally stuck—I couldn’t go back to my preliminary conceptual framework knowing its shortcomings, and I didn’t see a clear path forward to a workable theory of PYD in the program. Pirsig argues that the best way to deal with any kind of “stuckness” is first to

acknowledge that you are hopelessly stuck and next to accept being uncomfortable while you work toward getting unstuck (Pirsig, 1974). To deal with my discomfort through a rational process, I hesitantly turned to the grounded theory approach to qualitative research.

This proved to be a turning point in my understanding of how youth development happens in Generation Green because it gave me permission to construct my own theory of PYD in the program using an accepted methodology. Prior to this, I was so focused on the established sociological theories I encountered during my literature review that every line of my interview transcripts seemed to be shouting “Self-Determination Theory!” or “Ecological Systems Theory!” I couldn’t see what was right in front of me—all the wonderful insights shared with me by participants and how these ideas fit together—because I was trying to find within my data examples of some fancy theories that, if present, would confer legitimacy on my study. In retrospect, this occurred because I did not use a grounded theory approach to constructing my preliminary conceptual framework. I developed this framework prior to conducting any interviews, through what I thought was an exhaustive analysis of my participation-observation notes, analytical and reflective memos, and photographs. But now when I look back at the titles I chose for the three main themes of this preliminary analysis, I can see myself trying to make my research fit within someone else’s validated framework. Doing this didn’t lead me too far astray—most of my preliminary sub-themes still show up in the final version of my conceptual framework—but at the beginning of my data analysis, it did deter me from reading my interviews closely enough and often enough to really understand what participants were telling me.

When I finally concluded that I could not cram my findings into Self-Determination Theory (or any other theory that I was aware of) and still look at myself in the mirror or bring such an analysis back to the youth for review, I knew that I would have to earn my understanding of participants' experiences in Generation Green by studying the transcripts of their interviews line-by-line and word-by-word. I didn't want to believe this at first because I could see how much time that was going to take, but then I remembered Pirsig's (1974) admonition, "If your mind is truly, profoundly stuck, then you may be much better off than when it was loaded with ideas. ... Stuckness shouldn't be avoided. It's the psychic predecessor of all real understanding." So, equipped at last with the proper tools and the right mind-set, I re-entered what Glesne calls the "code mines," determined to unearth the *how* of PYD in Generation Green as the youth saw it, not as I wanted it to be.

This time, however, I stayed close to the text and coded all six of my preliminary interviews line-by-line, following Glaser's advice (cited in Charmaz, 2014) to code with gerunds instead of nouns. A gerund is a verb that can function as a noun because of its non-finite verb tense; gerunds have an "-ing" ending (e.g. feeling, seeing). Below is an example of how coding with gerunds led me to a much better understanding of the PYD processes at work in Generation Green. During my fourth interview, Melissa described how the program influenced her choice of career:

"I was always one of those kids who every other month I was deciding on what to be and [I would] go from veterinarian to mineralogist to whatever we were learning in school that month or week and after I joined the program, it just stuck to environmental this [or that]. Maybe a firefighter, maybe a rec tech, maybe something... but it was always like the common element of the outdoors. That just really stuck with me then and now I know I want to be a ranger in the national parks."

Because I had confined myself to gerund-based coding, it was necessary to think about what Melissa was telling me in terms of actions, rather than topics (Charmaz, 2014). Consider the last sentence in her statement above, for example. To determine what gerund best captures this action, I needed to read this portion of text several times, asking, “What process is Melissa describing here?” This prompted me to try to think from her perspective with renewed focus. I wanted to reveal the implications within and behind her words without straying from the literal meaning of her accounts. At the same time, I remained cognizant that I did not have direct access to Melissa’s thoughts and feelings; I had only my interpretation of what she shared with me, which was inevitably influenced by my own life experiences. With all of this in my head, I eventually I settled on the word “deciding” to sum up the process that Melissa describes in her last sentence above. Then I wrote “Deciding park ranger is the right job” in the margin of Melissa’s transcript as my code for this line of text. Melissa does not state directly that she has made a career decision based on her Generation Green experience—only that she now knows her calling. But parsing her words, it’s clear that is what she means. It was this line-by-line process of constructing codes from participants’ stories that generated most of the “Aha!” moments as my understanding of PYD in Generation Green progressed.

Before my switch to line-by-line coding for actions, I would have marked the above interview passage as an example of the “Caring Adults” sub-theme in my preliminary framework because Melissa had been talking about how nice it was to meet the African American ranger Shelton Johnson in Yosemite National Park. In doing so, however, I would have overlooked the real message of her story—that youth are constantly in the process of making decisions about their futures and that Generation Green provides positive, in-person

encounters with environmental professionals who enjoy helping young people with career exploration. When I discovered Charmaz's (2014) grounded theory text, I understood why my previous efforts at thematic coding had failed:

“Coding for actions curbs our tendencies to make conceptual leaps and to adopt extant theories before we have done the necessary analytic work ... If you ignore, gloss over, or leap beyond participants’ meanings and actions, your grounded theory will likely reflect an outsider’s, rather than an insider’s view.”

By initially coding my interviews with the themes and sub-themes of my preliminary framework, I had essentially skipped over the insights contained within participants’ words in favor of what I thought I should be seeing based on my literature review and field observations. Once again, the problem wasn’t that these early themes were entirely misguided; rather, it was that by going straight to thematic coding, I had missed the real story of how the program puts these principles into action. As I re-examined my interviews using a grounded theory approach, I followed Charmaz’s advice to keep my codes concise and to preserve within them the essence of participants’ language (Charmaz, 2014). I found that doing this kept the voices and meanings of participants alive in my head as I finished my first round of line-by-line coding and moved into the next phase of my analysis.

After completing the process of line-by-line coding for each of my first six interviews, I set out to identify the major themes in participants’ accounts of personal growth through Generation Green. These primary themes, their sub-themes, and the attendant discussion constitute the results of my research for the purposes of this report. Because analyzing my interviews consumed so much time, I have fallen short of producing a true grounded theory of Positive Youth Development in the Generation Green program. That is, I have not reported on the operational links among the themes and sub-themes of my framework—the many ways

that the PYD processes described here build upon and feed back into each other. I can certainly identify and explain many examples of how these processes are woven together and brought to life in the program, but I could not claim to have a true grounded theory of PYD without further analysis, both qualitative and quantitative. I look forward to doing that work in the future, but in this paper, I will focus on describing the PYD themes that arose from my data analysis.

According to Merriam (2009), “the practical goal of data analysis is to find answers to your research questions. These answers are also called categories or themes or findings.” There at the outset of my analysis, I found myself in need of a handful of categories that would encompass and explain the developmental impact of the Generation Green program. Instead, I had about 3,000 gerund-based codes and zero categories.

To find categories within my data, I carried out a constant comparative analysis using all ~3,000 codes. This inductive analytical method, pioneered by Strauss and Glaser (1967) to lend scientific rigor to the field of sociology, seeks to develop general sociological principles from specific observations about human behavior. In my study of PYD in Generation Green, I wanted to determine the most important elements (themes) of the developmental context that was established by the program and used to foster the personal growth of participating youth. More specifically, I wanted to learn what developmental processes take place within these settings and how Generation Green brings these processes to life by engaging youth in meaningful experiences around environmental conservation. Charmaz (2014) suggests that sensitizing concepts such as action, meaning, and process provide “starting points for initiating your analysis but do not determine its content.” As with my line-by-line coding, this recommendation—to use PYD process as my sensitizing concept—helped me to identify

categories that were responsive to my research question. Thus, as I began my analysis, I sought to detect the latent categories within my data using the youth development processes reflected in my codes.

To explore my codes, I printed them all on heavyweight paper and cut them into ~3,000 small index cards. I placed the cards on my floor one by one, looking for similarities and differences in the processes described by their codes. When two cards seemed to represent a similar mechanism of youth development, I grouped them together as a tentative category. When I thought the process described on a card was substantially different from any of the existing categories, I placed this card by itself as a provisional new category. Frequently, when I would draw a card from my deck of unclassified codes, I was compelled rethink the rationale for categories I had already established. When this happened, I would pull the implicated cards and categories aside for review and revision. It was a time-consuming and frustrating process to assemble these categories only to tear them apart a short time later, but once again, this “stuckness” led to my most useful insights regarding PYD in Generation Green. To remain creative and open to new ideas during this period of stuckness, I varied my work location regularly, taking my bags of binder-clipped code cards to all the outdoor locations I could find that offered some tree cover and a large flat surface. To the casual observer, I was engaged in an endless game of solitaire, punctuated sporadically by exclamations of “Yes!” and “\$*@#!” based on what was transpiring with my categories. As exasperating as this process could be, having to categorize and re-categorize my codes led me to turn these ideas over in my head repeatedly in search of the most unifying Positive Youth Development principles. Wrestling

with these competing ideas kept me immersed in the words and meanings of participants which stayed with me through the codes I had chosen.

I went about developing and refining these categories over a period of several weeks, usually with two days of intense activity followed by several days of finding anything else to do but confront the feeling that maybe the patterns I had hoped to find just didn't exist. This time, however, muddling through paid off, and eventually, I found myself with four dozen piles of cards whose supporting logic seemed at least temporarily stable. I then hurriedly labeled the back of each card so that all my work could not be wiped out by a gust of wind or an errant swipe of my sleeve. To ensure that this system was at minimum reproducible by me, I shuffled all ~3,000 cards and sat down to recreate my system from scratch. I didn't place every card in the right category, and I was aided by memory to some extent, but after this exercise, I felt that my system would largely hold up under outside scrutiny. To avoid becoming too committed to tentative categories, I resisted the temptation to name them until I had carried my constant comparative analysis to exhaustion. To create names for my categories of youth development processes, I followed the same approach recommended by Charmaz (2014) for line-by-line coding—using gerunds to convey action/process and sticking close to the words of participants. For each of my 48 piles of code cards, I flipped through the cards rapidly and repeatedly, trying out different names for categories until I found the best way to convey the core PYD process shared by all the cards in that pile. I asked the question, "What is this an example of?" to focus my thinking as I did this. As with my coding and category construction, I thought long and hard about the names I gave to these categories because I knew that to name them was to introduce another level of abstraction and to move farther from participants' first-hand accounts of

personal growth. Of course, creating categories and working with my interview data in the abstract was necessary so that I could identify the building blocks of the Generation Green program and determine how they fit together. But at each successive level of analysis, I took seriously the charge to keep participants' words and meanings at the forefront of my mind.

Confident that my 48 categories were reasonably resilient, I proceeded to arrange them into groups (themes) based on the developmental assets they appeared to foster within youth. The process that I used to deduce from my categories the major PYD themes in participants' accounts was the same one I used to derive categories from my codes—constant comparative analysis. I followed Merriam's (2009) advice that categories should be responsive to the research question, exhaustive, mutually exclusive, sensitizing and conceptually congruent. Of these criteria, it was most challenging to ensure that my highest-level categories—my PYD themes—were mutually exclusive and conceptually congruent. Finding these themes involved manipulating my data at another level of abstraction, and it was difficult to keep in my head all the properties each theme needed to possess to account for my data, while at the same time remaining distinct from and directly comparable to the other themes. To ensure that I remained grounded in my original data—the words of interview participants—throughout the analysis process, I listened to these interviews and re-read their transcripts whenever I found myself getting tangled up in the ideas I was trying to weave together. When I had taken constant comparative analysis as far as I could, my 48 categories were distributed roughly evenly among five piles (themes), each of which represented an important developmental asset fostered by the Generation Green program. These five primary themes, their sub-themes and

the relationships among them (all refined over time) constituted the conceptual framework I used to analyze the remainder of the interviews that I conducted for this study.

After developing this new conceptual framework based on my first six interviews, I had to decide how to proceed regarding further data collection. As I mentioned previously, I had originally planned to conduct 20 interviews, but several rounds of constant comparative analysis convinced me that I wouldn't last that long. So, I decided to take it one interview at a time, revising my framework as necessary along the way and stopping when I reached the point of diminishing returns (or "saturation" in the parlance of qualitative research). Although I had planned to interview a minimum of 10 participants, I initially thought that my data might have reached saturation at interview number six because I was starting to hear same stories again. I have since learned that "nothing new happening" is a common misconception about qualitative data saturation (Charmaz, 2014). In reality, I was hearing the same stories repeatedly not because I had uncovered the whole story of PYD in Generation Green in just six interviews but because I was asking interviewees the same questions in the same manner with little variation in probing or emphasis. In retrospect, I did this for several reasons: 1) I was new to interviewing and lacked the confidence to deviate from my scripted questions, 2) I took comfort in hearing similar accounts because I felt that increased the validity of my study, and 3) with my preliminary conceptual framework in the wastebasket at this stage, I did not understand the mechanisms of PYD in the program well enough to make good on-the-fly decisions about when to spend extra time probing topics of interest. However, by the time I had conducted six interviews and created my new framework, I had a good understanding of the how PYD in the

program was occurring. I also felt that my study was going in the right direction, and I had new questions and ideas I wanted to test during further interviews.

According to Charmaz, grounded theory coding usually has “two main phases: 1) an initial phase involving naming each word, line, or segment of data followed by 2) a focused, selective phase that uses the most significant or frequent initial codes to sort, synthesize, integrate, and organize large amounts of data” (Charmaz, 2014). At this point, I was confident that I had done good, thorough work on phase one, and I was ready for the focused coding phase. But I still wasn’t sure when to stop conducting interviews. Charmaz (2014) believes that data collection should “stop when the properties of your theoretical categories are ‘saturated’ with data. In other words, your categories are robust because you have found no new properties of these categories and your established properties account for patterns in your data” (Charmaz, 2014). Once I understood that it was my conceptual framework that required saturation and not my data, I knew that I needed to take this new framework for a test drive by conducting and coding at least one more interview.

By this point, I felt confident in my skills as an interviewer. Using everything I had learned during the data-analysis process, I was able to probe for explanations of the PYD processes I still didn’t fully understand, while at the same time keeping the interview on pace to cover all the necessary ground. And with a new conceptual framework on my desk, I no longer felt a sense of anxiety about my interviews. I knew I was on to something, and with the stakes lowered, I was better able to enjoy the interviews as interesting conversations. To use a baseball analogy, it was as if the pitches had slowed down—I was seeing the ball better. The same could not be said for my approach to data analysis—it just wasn’t sustainable, and I knew

I needed to streamline the process to avoid being bogged down with hundreds of pages of interviews and thousands of code cards. Working with the data manually did, however, provide several key benefits during the initial phase of my analysis. First, I was able to take the interview transcripts with me everywhere; I wrote codes in the margin whenever I had time. This kept me immersed in the data without becoming too fatigued to work productively. Second, the tangible nature of my code cards kept my mind and hands engaged as I shuffled my ideas across the picnic tables of greater Los Angeles. And lastly, as my tall stacks of code cards gradually turned into small piles of reproducible categories, I gained some measure of progress on a task that had to be repeated many times. However, while exploring my data by hand did offer valuable insights during the initial phase of analysis, it was time to use qualitative analysis software to automate cumbersome aspects of my analysis so that I could work effectively with larger amounts of interview data.

I chose to use MAXQDA, a qualitative and mixed-methods software package, because it allowed me to do the following things: 1) import a variety of qualitative data formats, 2) quickly tag selected portions of text with preset codes, 3) provide a visible running tally of how many times each code has been applied, 4) compare codes and code frequencies across documents, 5) retrieve and export all the instances of desired codes, and 6) search and analyze codes that occur within or near other codes. After importing my interview transcripts into MAXQDA, I recoded my first six interviews using my new conceptual framework (I needed all my data to be available and coded the same way in the MAXQDA database). I coded every line of each interview, but instead of coding line-by-line, I highlighted sections of text that represented a complete thought expressed by a participant. These pieces of text ranged in size from a single

line to a large paragraph, depending on what was being expressed and how much of the surrounding context I needed to preserve as a future memory jog. Once I had finished entering these early interviews into MAXQDA, I proceeded to conduct eight more interviews, pausing to transcribe and analyze each one before proceeding to the next. I coded every line of these interviews as well, again by highlighting portions of text that expressed a complete thought. After each interview, I reflected on what new information I had gained and what new questions I had developed regarding the PYD processes at work in Generation Green. This enabled me to iteratively refine my probing questions to ask interviewees for their insights into aspects of PYD that I still didn't understand well. After each successive interview, I also revised my new conceptual framework slightly to reflect my latest understandings. When my interviews were complete and when the transcripts had gone through multiple rounds of focused coding in MAXQDA, I made a final modification to my new conceptual framework—I condensed the contents of each primary theme into five or six sub-themes (from the nine or ten sub-themes present in the first draft of this framework). I did this based on the number of interview segments that had been coded with each sub-theme and based on which sub-themes taken together constituted a PYD process that I had not previously identified. However, I did not retain or combine sub-themes strictly on a numerical basis, although sub-themes containing more codes had a higher probability of making the final cut. There were a few sub-themes with fewer coded segments which I deemed sufficiently important to retain as separate categories within my primary themes. In the final analysis, I had to make subjective decisions about what my final conceptual framework would look like, but I tried to follow as rigorous and reproducible a process as possible.

2.5 Limitations and trustworthiness

The strength of my study—its reliance on youth voice—also had the potential to be a limitation because it is not uncommon for youth development programs to demonstrate little or no change in traits such as perceived self-efficacy when before/after assessments are conducted over short time scales, such as weeks or months. This is because developmental assets “pile up” and pay dividends over time (Benson et al., 2006). Wolf (2007) notes that young people may need time and reflection to “recognize and assimilate the positive influences of nature service.” At the proposal stage of my study, I was moderately concerned that my findings would be impacted by this effect because roughly half of my initial interview candidates (2014 participants) had been in the Generation Green program for less than a year. Although I used participant-observation to check and to complement my interviews, I was still heavily reliant on youth interpreting their experiences for me. Unfortunately, it is possible (even probable) that my study participants will not fully comprehend the impact of their environmental conservation experiences until they’ve had the opportunity to draw on these assets over longer periods of time.

I did my best to mitigate this limitation by interviewing four youth from prior Generation Green cohorts (2011-2013), three of whom were at least a year removed from the program. As I analyzed my data, I was looking to see what differences might exist between current and former participants regarding their perspective on program’s impact. I was not trying to measure statistical differences in perceived impact (this is a qualitative study after all), but rather to ensure that current and former participants were responding to my research

questions by describing the same types of youth development processes. It was interesting to note that participants who had been removed from the program for a longer time tended to talk more about the relationships they formed during the program (either because they missed them or because they had endured), whereas current participants devoted more time to discussing their experiences in Nature (due to novelty and recency). But overall, I did not find that there was a significant difference in the nature of the accounts of personal growth these two groups of participants shared with me. Ideally, this study would be carried out longitudinally, following the personal development of program participants for years to come to better understand how Generation Green pays dividends over time.

To enhance the trustworthiness of my findings, I employed a variety of strategies. First, I used what Glesne (2011) calls “prolonged engagement” and “persistent observation” in the field—volunteering extensively with the Generation Green program over the course of five years—to build trust and rapport with my study participants and to see first-hand how the program achieves its impact. This extended period of fieldwork allowed me to make careful observations of people and places which enabled me to write and speak about my research with the authenticity of “thick” description (Merriam, 2009). It also allowed me to check and to triangulate what participants told me during interviews against the conservation work experiences that I shared with them (Creswell, 2013). Further, this lengthy period of participant-observation helped me to ask well-informed interview questions and to better understand the accounts that participants shared with me. The mutual understanding that I developed with participants contributed to very informative conversations that may not have occurred had I been an outsider to the program.

Conducting “member checks” was another strategy I used to strengthen the credibility of my study, assessing whether my findings “rang true” to participants (Merriam, 2009). After transcribing, coding, and analyzing my first six interviews, I met with these participants to give them copies of their interviews and to thank them for helping with my study. While doing so, I also had the opportunity to show these youth the new conceptual framework that I had devised and to describe how I had employed their testimony in its creation. I was fortunate to be able to meet with four of these youth simultaneously while they worked at the Eaton Canyon Nature Center; this gave me the opportunity to conduct a small, informal focus group regarding my framework. This outline of the principles and processes of PYD at work in the program passed muster with the group, and I received useful feedback regarding better ways to express some of the concepts I was describing in my framework. In addition to making sure that my data analysis was well-received by participants, I also compared my findings to the established tenets of positive youth development as expressed by the asset frameworks of the Search Institute and the Committee on Community-Level Programs for Youth (Creswell, 2013). From the start of my interview coding until the time of this writing, I purposely avoided looking at the research on youth development again because I did not want my analysis of Generation Green’s impact to be unduly influenced by external findings. But having recently reviewed this literature as a check on my analysis, I can report that my conceptual framework is generally in alignment with the asset models cited above. I do not find that Generation Green builds all 40 assets identified by the Search Institute (this would be a tall order for any youth program), but most of the assets that appear on my conceptual framework can be found within or inferred from the 40 Developmental Assets.

To write with credibility on youth development in the Generation Green program, I also need to explicitly address my positionality and potential biases (Merriam, 2009). As a 44-yr old, white, middle-class, college-educated male, I bring to my research a set of life experiences and perspectives that predispose me to interpret my research setting and program participants in particular ways. For example, I am privileged to enjoy the outdoors without worrying about my safety—no one gives me suspicious looks or makes me feel unwelcome. I live within easy driving distance of several large natural areas; I have a car, adequate leisure time and the physical ability to hike. The trail signs are printed in a language I can read, and I know what to do if I should need help. I can focus on enjoying the restorative benefits of Nature because my parents helped me to understand and to appreciate the outdoors from an early age. These attributes and influences leave me with a disposition to see Nature as an inspiring place full of opportunity, but I know that not everyone feels this way, often based on circumstances beyond their control. As a volunteer and as a researcher, I reminded myself regularly that many things I took for granted in the outdoors had the potential to be unsettling for program participants of different backgrounds.

For example, our 2018 backpacking trip to Yosemite National Park required us to drive along rural highways which had sprouted scores of Trump signs in recent years. Noticing this, Osman turned toward me in the van and gave me a look that seemed to say, “Where exactly are you taking us?” Farther down the same highway, we passed a woman who stood on the side of the road behind a beat-up sedan with mismatched paint as she discussed something with the local sheriff. I observed that the sheriff was a large, white man and that the woman appeared to be of Mexican descent. Was she receiving assistance because her old car had

broken down or had she been pulled over on the pretext of a broken taillight because the sheriff thought she didn't belong here? It could very well have been the former, but I saw how two of the students looked at each other when we passed that scene. I opened my mouth to say, "Oh no, it's not like that, you'll see," wanting to allay any fears about the journey ahead. But I caught myself—because they knew better than I did what it might be like. How many times had these young men or their family members been pulled over and harassed for driving with the wrong color skin? I wanted to say something to show that I understood their concerns, but I couldn't find the right words. Was this the time to speak out against social injustice, when the rest of the youth were asleep in their seats and when I had no idea where to take the conversation? Did I need to say something to reaffirm my credentials as a white ally? Based on the many hours of positive interactions that I had had with Generation Green youth over several years, I felt that I had reached the point where youth comfortably regarded me as a member of the school/program staff and not as some random white guy who just showed up one day. I felt like I did when I was teaching at Muir. I felt totally comfortable and accepted in an environment where all the participants were youth of color. I felt like I belonged in Generation Green. But those two scenes on the highway suddenly made me uncomfortable, just as they probably made the youth sitting next to me uncomfortable in a different way. As I reflected on this situation from the back of the van, I realized that this discomfort was probably a good thing—a necessary reminder that these youth will probably never have the luxury of being totally comfortable in these places. I get to enjoy these scenic country roads with my windows rolled down and the Van Halen cranked up, but these youth must remain vigilant

against potential threats. I don't worry that someone will pull up alongside my car and shoot me to death as I visit a national park, but these young men might have to.

I think about that because a 20-year-old young man I met in Big Bend National Park, Andre Fuqua, later died that way. In July 2012, I spent nine days in Big Bend National Park along the Rio Grande river in south Texas. I had planned to stay there for three days as part of my ongoing quest to visit all the national parks, but the park turned out to be so spectacular that I stayed for as long as I could, knowing I'd probably never get back there. I met Andre who was in the campsite next to mine, and we got to know each other over the course of the next week since we were both traveling alone. We hiked Boquillas Canyon together, waded out to the Mexican border and had some deep chats over the campfire. He was an incredibly kind and generous person, and he reached out to say "hi" several times over the next few years. Whenever I happened to see one of his posts of social media, he seemed to be happily running cross-country races or exploring the great outdoors in south Texas. So, I was stunned to scroll through my Facebook feed one day in February of 2017 and see that Andre had been murdered. His Subaru, riddled with bullet holes, had run off the highway and flipped over; he was found slumped over the steering wheel (Contreras, 2017). Police have not identified Andre's killer, and there are no theories as to why anyone would have wanted to kill him. I read in a news article that his friends called him Gandhi because of his gentle and caring nature; that sounds like the Andre I met. His death could only have been a random act of hate, and I can't help but think that Andre's skin color played a role. I thought about Andre as we drove into Trump country on our way to Yosemite and again on the way home. The youth were now

talking excitedly about all the national parks they wanted to see. Was I helping to ignite a passion for the outdoors that might also put these young people in harm's way?

I reflected on these and many other questions of positionality in my reflexive journal. I thought about my relationship to my participants and my research setting, about how and why I interpreted things the way I did (Creswell, 2013). I thought about what my relationship with each participant was like and why I connected with some of them more than others. I thought about how I chose which participants to interview and whether I had been as objective as I could or if favoritism had played some role. I thought about the different lenses through which I viewed the program—teacher, graduate student, Nature lover—and how these influenced the observations I made (Glesne, 2011). I reflected on the strong emotions—both positive and negative—my experiences with Generation Green evoked; I thought about why I felt a certain way and how that feeling might influence my perception of youth development in the program (Glesne, 2011). I thought about (and suppressed) my urge to wage a vendetta against program managers who had measurably harmed coordinators (e.g. job loss) and youth (e.g. leaving the program) through what I regarded as sheer negligence; I reflected on why I felt this way and what evidence I had for my conclusions. To address these feelings of anger and frustration constructively, I undertook a separate, parallel examination of the program's management. On the positive side of the emotional spectrum, I remained vigilant about the impact that my affinity for Nature might have on my interpretation of interview data. Because I am passionate about John Muir High School and about addressing the injustices this school has endured, I found myself wanting Generation Green to be a success story and for the program to deliver the Nature benefits that I think it should. This had the potential to lead me to present my

findings in a more positive light than the data may warrant. Another measure that I took to increase the trustworthiness of my research was to attempt to identify and address all plausible rival explanations to my interpretation of data (Yin, 2014). One of the silver linings to working with seven different coordinators was that I had seven interested, highly informed people to bounce ideas off regarding Generation Green. Since I had to work on my research somewhere, I often went to the Generation Green office at Muir where I could provide some company/support to the coordinator and where I received the same in return. This afforded me limitless opportunities to yell, “Say, what do you think about this...?” from the mini-office I had carved out for myself in the adjacent storage room. And to check that my coding of interview transcripts was reasonable and reproducible by others, I engaged a friend, who uses qualitative methods in her work, in coding some of this text. After we had both coded several of the same pages, we compared our notes and discussed the reasoning behind our discrepancies. Along with Charmaz’s (2014) advice to code with gerunds, this practice-coding of my own data with a critical friend was what really helped me to identify the patterns in the experiences that participants shared with me. The final method I used to bolster the credibility of my research was the maintenance of a conscientious audit trail (Merriam, 2009). Using my case study databases, I kept track of all the documents generated by my research—field notes, analytic and reflexive memos, interview transcripts, codes, etc.—and the rationale by which decisions were reached from this data. It is my hope that anyone wanting to evaluate the findings presented in this study would be able to arrive at similar conclusions—or at least agree that my interpretations are reasonable—using these source materials.

Chapter 3: Results and discussion

3.1 Overview of themes

Five primary themes emerged from my interviews with Generation Green participants; these themes along with their sub-themes are listed below. To allow for a thorough review and discussion of the supporting data, I am reporting only on Theme 1- Career Development in this publication. The remaining four themes will be the subject of future publications.

Theme 1 – Career development

- a. Assuming greater responsibility and learning to be self-sufficient
- b. Learning essential outdoor skills and academic content in context
- c. Practicing public speaking and developing self-confidence
- d. Meeting conservation professionals and learning about their jobs.
- e. Building a professional network and staying connected to USFS

Theme 2 – Personal rejuvenation

- a. Feeling limited by school and wanting to be engaged outdoors
- b. Visiting new places regularly and doing different things outdoors
- c. Being refreshed by Nature and feeling good physically, mentally
- d. Seeing Nature in pristine condition and experiencing awe, wonder
- e. Becoming more attentive, reflective and appreciating Nature
- f. Revising beliefs about self, world and expanding your horizons

Theme 3 – Authentic experiences

- a. Having senses, emotions engaged and being hooked experiences
- b. Observing plants, animals and appreciating them w/ expert naturalist
- c. Seeing human environmental damage and feeling for animals, Nature
- d. Working hard, making a difference and feeling appreciated for impact
- e. Building vivid memories of program and being able to draw on them

Theme 4 – Supportive relationships

- a. Meeting, being stuck w/ good people and building strong friendships
- b. Sharing experiences outdoors and connecting, bonding through Nature
- c. Discovering self through new people, settings and learning new philosophies
- d. Feeling comfortable w/ self, peers, staff and feeling nurtured by program
- e. Finding support, connection in team activities and receiving encouragement

Theme 5 – Intrinsic motivation

- a. Feeling good about helping Nature and finding a passion in conservation
- b. Wanting to share Nature's benefits w/ those who don't know, lack access

- c. Feeling compelled to teach others to care for Nature, especially children
- d. Coming out of your shell, finding your voice and seizing opportunities
- e. Feeling new focus on school, job and being motivated for work you believe in
- f. Being self-motivated to spend time in Nature and going to see, do new things

3.2 Theme 1 - Career Development

3.2.1 Assuming greater responsibility and learning to be self-sufficient

The Generation Green program reaches youth during adolescence, the critical transition between childhood and adulthood, when youth are leaving behind the nurturance of their early years and learning to act on their own in the adult world. Reannon credits the program with helping her to mature into an adult.

“I think it helps you a lot because with the program it made me feel like that responsibility of an adult. You have to be responsible. You have to wake up every morning on your own to get dressed to go to work. ... I was at that age where I was about to graduate high school. I was almost an adult. At the end of my teen years, it was time to be an adult, and I felt like that opportunity with the Forest Service helped me mature and become an adult to where I had to take on responsibilities by myself. I didn't have my mom or my dad or my grandma to lean on for help, I had to take it upon myself.”

Unlike high school, the Generation Green summer employment program is voluntary; as a result, youth (and their parents) are more inclined to believe that it is the participant's responsibility to arrive at work on time and properly prepared. When Melissa is asked what she's gained from the program, she talks about taking charge of her day.

“Definitely independence ... Every morning, I had to wake myself up and then make my lunch and make sure oh, your shirts are washed, my pants are clean, your boots are ready to go. That's just really important because it shows you not everyone is going to be there every day. If I didn't get there on time, I would have probably got left and had to deal with it because they weren't going to wait on me all day. That's a really important part of it.”

When she says, “I probably would have got left,” Melissa is talking about missing the Forest Service van that departs from Muir High School each morning to take youth up into the forest

for the workday. There is a grace period to allow for L.A. traffic, but on a few occasions, when youth were very late, the group had to depart for the day's work site without them. Those youth left behind missed the whole workday, and a corresponding amount was deducted from their earnings. For teenagers eagerly awaiting what are often their first adult paychecks, this lesson hits home—it means less money for new clothes, college savings, or helping to pay rent. To illustrate the importance of timely, tangible consequences to developing personal responsibility, Reannon drew a comparison between Generation Green and her experiences in high school.

“It just felt like it helped me become more of an adult than high school did because high school was just like the responsibility of doing homework or doing a project, and that's all they taught you. ... If you forgot your homework or if you forgot something you needed, they didn't tell you anything. They were just like, ‘Okay, well, bring it the next day or bring it when you can.’ ... [in the Forest Service], if you didn't bring your work gloves, then you would pretty much pay the consequence because working without them, you'll get blisters or you'll get a splinter ... if you forgot something, you were screwed. You were screwed because you paid your consequences that same day. That taught me a lot.”

At the beginning of each fieldwork season, youth are issued their own set of personal protective equipment (PPE) which includes gloves, hard hats, water bottles, work boots, etc. Failure to bring essential items may result in youth not being allowed to work for the day (forgetting a hard hat) or in developing painful blisters (hefting a Pulaski w/o gloves). Youth understand that these are not the contrived consequences of school; instead, these safety practices are a common-sense part of outdoor work that has the potential for danger. In Generation Green, youth learn these lessons in responsibility gradually by experiencing cause-and-effect situations in the workplace. Youth are also positively motivated to meet program standards because they look forward to the rewarding experiences each day offers, such as

visiting a unique part of the forest, socializing and bonding with peers in the van, witnessing Nature's many surprises such as bear sightings, and feeling accomplished after a long, hard day of trail work.

Generation Green also helps youth to step into adulthood because the summer "Careers in Conservation" program (CIC) is a real job, and participants attend orientation and training alongside new adult employees of the Forest Service. This includes training on workplace safety, sexual harassment, CPR / First Aid, history of the Forest Service, as well as background checks. Youth receive bi-weekly paychecks from the federal government, and if they decide to pursue federal jobs in the future, they will have established a record of successful employment with the Forest Service at the GS-1 level. When asked about what she is proud of doing through the program, Melissa talks about working for two agencies that manage public lands.

"The fact that as of now I've worked with two government agencies—with the Forest Service and now LA County [Parks]. That's one thing that's pretty cool. Like, not everyone can say that. ... The fact we got exposure so young. I was 15 working in the Forest Service already getting paid and being a G1. So now, anytime I want to apply, they're like, 'Oh, you have experience with us.' I'm like, 'Yeah, I do. I've done everything before.' So that's really good."

Generation Green participants also appreciate that the program gives them real-life opportunities to find out what they can do on their own, chances that are often in short supply at school. Alondra reflects on the value of being able to test out her academic knowledge in the field.

"Just about everyone can write on a piece of paper and do an activity in class. But to have the opportunity to change that atmosphere and do something outside and apply what you've learned in class to real-life situations or testing it out for yourself instead of just always listening to what other people tell you. And actually seeing it for yourself is- it's not something you can do just on paper with a pencil in a classroom. You actually have to go out and do it yourself or have the opportunity to do it."

In Generation Green, these opportunities often take the form of semi-structured work projects where youth are given a job to accomplish along with the necessary tools and some basic parameters (and safety training). Then they are allowed to work together in small groups to figure out how to go about doing the work. While the youth are working, coordinators move about from group to group, checking on progress and answering questions as they arise. Coordinators are adept at giving youth enough structure to feel comfortable working on their own, but they are also hands-off enough to allow youth authentic opportunities to collaborate, test things out, get stuck, and find solutions. Melissa describes this experience.

“Jason always left it up to us when they were- we’d work with recreation technicians that take care of part of the forest and they’d be like, ‘Oh, we want a block of cement here and the trashcan over it.’ He’d be like, ‘Okay, I can tell you how to do it or you guys can basically do it yourself and figure it out.’ We’d be like, ‘Okay. Let’s talk about it and see what works.’ He’d always instill like, ‘You figure it out, and then talk about it and agree on the best way to do it.’ That was always a challenge to get everyone’s perspective and decide what the best route was.”

An important part of letting youth to put their abilities to the test is to give them ample time to do so. In the high school classroom, we’re frequently in such a rush to cover the mandated curriculum that we don’t give students adequate time for deep learning, and the resulting hodgepodge of misunderstanding calls the whole effort into question. In Generation Green, the time constraints are removed, and youth are encouraged to prioritize mastery. Mariana shares what she learned about how to approach challenging tasks, like building a campfire in the snow.

“That there’s always time to do stuff. You don’t have to rush. Building a campfire can be difficult, but you could do one. Don’t give up. They make you see things in different perspective, like building a campfire, if you were able to do it in the snow, then nothing is impossible ... You were not thinking, ‘I got to hurry up and do this.’ You were just taking your time and waiting till it happened, and when there’s finally

fire, then you feel happy like, 'Yay, I did it!' but you don't rush yourself. You take your time."

Program coordinators also cultivate a growth mindset by letting youth know that it's okay to make mistakes, to have a bad day or to fail at something; the emphasis is on trying to do your best and on learning from past experiences. Drew, Muir's 2017 salutatorian, talks about how Nature's constant flux helps him to feel okay about making mistakes, an essential part of learning and growing that is too often discouraged in school.

"[It] makes it feel stable, makes it feel like I don't have to worry about messing up. ... If you mess up in class, like you mess up one time, that could be like your whole school year gone. Like, you bomb one test, you probably screwed up your whole grade for the rest of the year. But like, you mess up one project out in nature, somebody can probably come along and help you fix it later. ... It's easier to do trial and error outside where you can see it happen, where you can see what your consequences are versus being in a classroom and only thinking short-term like, "Damn, this is gonna be the class that I hate this year."

After each Generation Green workday, there is a short After-Action Review (AAR) where participants and staff gather in a circle to reflect on all aspects of the day—what went well and what didn't, suggestions for improving the next outing, highs/lows of the day for each youth, and shout-outs for excellent work. What makes this AAR exercise so effective is that program coordinators approach it with seriousness and sincerity; they carry it out every single day so that focusing on continual improvement becomes habitual; and they establish and enforce norms of respectful interaction among youth. Altogether, these standards and practices are designed to ensure that youth take their work seriously, and participants almost uniformly strive to meet or exceed expectations set by the program.

3.2.2 Learning essential outdoor skills and academic content in context

The Generation Green program has a unique ability to facilitate learning all day long without having it feel like the often-stifling pedagogy of the school day. Alondra describes how coordinators take full advantage of every teachable moment with youth.

“Every day, despite what we do, is meant to be educational. Careers in Conservation, where first we're supposed to learn- we could be outdoors and still learn, we can be inside and still learn, we can be in the car and still learn on our way to the different places where you go to. And it's just insane how they do that because it's really well structured.”

When youth are working in the forest, there are so many interesting things to learn—both what is explicitly taught and what youth absorb on their own—that it's okay (and expected) for everyone to take away a different combination of insights from a day in the field. There is a foundation of outdoor skills/knowledge that coordinators seek to impart, but they also emphasize that youth should explore their own personal interests. Raymond compares this to the one-size-fits-all instruction provided in school.

“Because, like I said, school's really embedded into you. Like, if you're going to be at school, you're going to learn this and this and that—they force you to learn that stuff. In the Forestry Service program, you learn it at your own time, you learn it in your own way. I learned mine's a whole different way from somebody else's way.”

In school, when teachers are dealing with large numbers of students, youth must often wait to be told what to do; this can render learning a passive, externally regulated affair. In Generation Green, youth encounter fascinating aspects of Nature nearly every day; there's no need to force them learn something because their curiosity is stimulated naturally. With all the resources available through the Forest Service and L.A. County Parks & Recreation, youth can sustain an interest in learning about Nature on their own. Brenda describes encountering a tarantula

hawk on the trail and the satisfaction of learning about it on her own at the Eaton Canyon Nature Center.

“I noticed that there was this bug around us . I was like, ‘Oh, what type of bug is that?’ I was curious. It was something I had never seen before. It was actually a tarantula hawk. That insect actually kills tarantulas and lays [its] eggs on the tarantula, so when the eggs hatch, they actually eat the tarantula, but the mom dies. And I thought that was really cool. ... I just like learning about what animals do and what they do to survive. ... I think you're getting educated in this program, but you don't know it. ... Like how I said I saw that insect, it seemed interesting to me because I did not know what it was. Someone was like, ‘Well, it's called a tarantula hawk.’ So, I came to the library here at Eaton Canyon and I looked it up in the book and I saw about the things that it does. In the end ... it's like something that I wanted to learn. I was like- no one was forcing me to do it. I just wanted to learn more about the animal, and you're learning about it, but it doesn't- it's not like it's an assignment for you to do. You just want to learn about it. It's an animal that you've never seen before, and it- you know, when you see something and you really want to know what it is, that's how I felt about it.”

Generation Green also provides direct instruction by subject-matter experts on a variety of conservation topics through the summer “Careers in Conservation” program and through guest speakers and educational field trips during the school year. Topics covered during the six-week CIC program include: hydrology and water conservation, wildlife ecology and habitat restoration, animal care and handling, indigenous ecological knowledge, and fire ecology. The program typically devotes a full day to each theme, and youth learn different aspects of each subject from agency experts at various locations in the forest. For example, the CIC schedule features a day called “The Journey of Water,” which begins with a trip to the Big Tujunga Dam (elev. 2,287 ft) in the Angeles National Forest. There, hydrologists from the L.A. County Department of Public Works teach youth about the history of dams and flood control in Los Angeles County, about the problems posed by sedimentation after wildfires, and about how the County manages the dams to recharge groundwater resources. After these scientists and

engineers share some of their personal/professional experiences and youth have a chance to talk with them, the group follows Big Tujunga Creek down to the Stonyvale picnic area, which is managed by the Forest Service.

At this creek-side recreation site, youth learn from recreation technicians about the challenges of preserving this heavily visited riparian area against human damage. Youth get to see firsthand the ecological impacts of human recreation—trash litters the ground after busy weekends, trees bear the scars of knife carvings, and even rocks become canvases for graffiti. As an example of how CIC blends instruction into every aspect of the program, youth learn how the rock dams created by visitors seeking swimming holes lead to elevated water temperatures which threaten the Big Tujunga's endangered fish species, the Santa Ana sucker. Forest Service biologists engage youth in measuring the temperature at different locations in the creek using digital temperature probes; to assess the health of the stream, these readings are compared to the preferred temperature ranges of native fish. Next, youth engage in ecological restoration projects (breaking up rock dams, removing trash from the stream, etc.) related to what they've just learned; they do this work alongside Forest Service staff which gives them opportunities to ask any questions that come to mind or simply to have pleasant conversations with caring adults. Drew talks about how learning is aided by having such time for reflection built into the day, which is often not the case in school.

"In school, teachers and students are pretty rushed because you have to understand and learn these concepts within a short amount of time. ... So, it's like, 'Okay, I've got to teach them this entire chapter by the end of today.' But in one class, you only get through the first two paragraphs. ... Not everyone's going to be able to breeze through everything, whereas outside when you're doing things like CIC or Generation Green, you have that entire day or that entire trip to start connecting these ideas that are explained throughout the day. And then if you have questions on that, you ask them as you go along. And it doesn't slow anybody else's progress on it ... whereas in a

classroom, it's like they'll have a person that asks the same question over and over again. So, it's just- it's because they're not engaged."

As a teacher, I can attest to this dilemma. As much as I wanted to ensure that all my students understood the material thoroughly before moving on to new topics, there simply wasn't time on the curriculum calendar. Even if I had been able to wait for everyone to reach mastery on a particular topic, the more advanced students would have grown bored by the slow pace.

Teacher education courses emphasize the importance of checking for student comprehension and of periodically revisiting prior topics, but our K-12 education system is inescapably linear, and students are left behind almost by design. In the Generation Green program, by contrast, the instructional content is presented in an outdoor context where it is most meaningful, and core ideas are revisited throughout the day/program from different angles and by different experts. Further, because Generation Green youth are constantly immersed in Nature, Nature itself provides endless authentic prompts for students to think about the connections among all the concepts they learned previously and for questions to arise out of genuine curiosity.

Most teachers can also relate to Drew's comment that students ask the same questions over and over because they're not engaged. Our K-12 educational system does a good job of convincing both teachers and students that they are to blame for this lack of engagement, as if poor lesson planning and student apathy were the primary culprits. As with the challenge of pacing student learning, the problem of student apathy is not a flaw in the execution of an otherwise sound plan. The problem is the plan itself—to educate youth by having them sit passively for many hours in an environment where it is very cognitively demanding to stay focused enough to learn effectively. Nature, on the other hand, provides an array of stimuli for which humans are evolutionarily adapted (e.g. tree leaves are a soothing sight because our eyes

are attuned to their fractal dimensions), and its engaging-but-not-distracting character, makes it easier for students to write in a journal, listen to a guest speaker, or sit in quiet reflection (Wilson, 1984). The Generation Green program (CIC in particular), provides an optimal physical environment for learning, in addition to a meaningful conservation curriculum and caring educators.

The program also teaches youth the core competencies necessary for working and recreating outdoors, such as how to dress and pack properly, how to use a variety of forestry tools, how to navigate in the wilderness, how to set up a campsite and start a fire, how to provide first-aid and CPR, etc. Priscilla talks about some of the outdoor skills she learned in the program.

“I learned where the water comes from. I learned how to find highways, to get there on the map. I learned certain trail ways that you can take that are not full of people ... I learned about some of the stars. I never put up a tent before. It was so difficult. My tent was lopsided. It was so difficult to put it up. It's easy once you finish it, because honestly you just put two sticks inside the tent and then you nail it to the floor. But, when you first start, you don't realize that that's all you do, but it's easy.”

When Priscilla says, “You don’t realize that’s all you do, but it’s easy,” it reminds me of being eight years-old and watching a friend’s family depart for summer camping trips. Having no idea how camping was done, I thought it took special skills that my parents didn’t have, and I was equal parts jealous and intimidated. In retrospect, it seems obvious that one just needs to set up the tent and sleep in it, but no one told me that back then. So, I can identify with youth who feel daunted about hiking and camping—there isn’t much to it, but you need a caring adult to take the time to show you how. And that’s what Generation Green does—it gives youth the skills they need to feel competent and comfortable outdoors. Adolfo explains how the program

helped him to feel more comfortable hiking in a nearby canyon where poison oak is prevalent (oils from this plant can cause painful blisters).

***“I think it helped me get more experience in the outdoors, and to appreciate more the outdoors. ... It helps me because I could pass it along to some of my friends when we go hiking. Let's say they were to touch poison oak—I would know what to do. They gave us the packages of [Tecnu] cream to put on it . So, I would know what to do then. ... It makes me more confident going into the outdoors. Like knowing which way to go. In Eaton Canyon, we would go up this trail almost every day. When I first went, I would get lost because I didn't really know where I was going. Now I do. You know right from wrong, so you know what you can and can't touch now.*”**

And Raymond recalls using the skills he learned in the program to find his way back home after becoming lost in the forest.

***“And the Forestry Service taught me how to navigate because I remember one time, I went up there with my friends and we listened to somebody else—we made the wrong turn. And we went four hours into the forest, and it was nighttime, and we didn't know where to go because it was pitch black. And then everybody was like, ‘Oh, what do we do?’ I was like, ‘What do we do, what do we do?’ {to self} because nobody knows the way we came. So, I start looking up. I was like, ‘We're close, the road is close.’ They say, ‘How do you know?’ ... [Ray:] ‘Always look up. You see the mountains and stuff around us?’... and I read a map, ‘So we're right here’ {pounds finger on table}. I started looking at it more, and I was like, ‘OK, everybody just follow me.’ We start walking, and I found our way back.”*”**

Perhaps equally important, these outdoor competencies help youth to feel like they belong in these wild places. Hikers on the trails around Los Angeles are more diverse than they are in other parts of the country, but this crowd is still white and affluent enough to make others feel like they don't quite fit in. All their fancy hiking gear can be misleading, however, as the average Angeleno is not particularly well-versed in the outdoors. When youth learn trail etiquette, Leave No Trace (LNT) practices, and other outdoor skills through the program, they realize they have all the tools needed to hold their own on the trail.

3.2.3 Practicing public speaking and developing self-confidence

What I learned from youth about the impact of the public speaking they did through Generation Green was truly eye-opening. It is not just a means to share information and opinions with group of people, as public speaking is commonly understood. Rather, these presentations of various length, purpose and audience give youth authentic opportunities to construct meaning from all their experiences in the program and to incorporate these ideas into themselves at a very formative time in their lives (the adolescent mind is undergoing a metamorphosis of neural re-wiring second only that of infancy). These speaking experiences helped youth to find their voice; they helped them to become comfortable with who they were and the who they were becoming; and they improved youth self-confidence which made them more inclined to seize opportunities. Youth share that one of the most important elements of their public speaking experiences is that program coordinators make sure that youth feel comfortable and safe as they took social risks while learning to articulate themselves. Mariana describes developing her public speaking skills through Generation Green by drawing a contrast to her experiences in school.

“[The Forest Service staff] get you out of your shell. They don't just throw you [out] there, like you have to do it. That's what a teacher would do. Like a presentation—if a kid is not comfortable doing it, it's not going to help them feel comfortable just throwing them [out there]. That's going to make it worse. So, when you're working with people from the Forest Service, they know how you are. So, they give you time and they wait 'til you get out of- little by little, you start to get out of your shell, and when you don't think about it, you're a leader. In school, they just tell you, 'Do a presentation,' but you could be really, really nervous and the teacher won't care because they'll be like, 'It's for your grade.' But they don't do little by little how to get the person out of their shell. They just throw them out there. It makes things worse.”

As Mariana explains, youth develop their public speaking ability gradually, starting by briefly sharing things about themselves at the beginning/end of club activities—name, grade, favorite

things, career interests, highs/lows for the week, etc. Over the course of the year, coordinators gradually employ more complex and personalized prompts (still on topics of relevance and interest to youth), requiring youth to spend more time articulating their thoughts to peers. Having their ideas received warmly and hearing what peers have to say helps youth to feel more comfortable with themselves, knowing that their thoughts/feelings are natural and valued. Joselyne talks about how the Generation Green program helps youth to become more comfortable expressing their thoughts.

“I think [they] always make us talk- at the end of our trip, we say something about what we like about it, what we disliked, just small things like that. Or in our meetings, we have to talk about what we want to do, or the trips that we want to plan. I remember doing that. You just get more comfortable with yourself, you get more comfortable expressing your thoughts, and I feel like public speaking is a lot about being comfortable with what you're going to say. Like, if you don't say the right thing, it's okay, nothing's going to happen, and I think Generation Green definitely does that. Especially, since [they] reassure us that it's okay, whatever you say it's fine, so then the public speaking- you get comfortable with public speaking, slowly, like it doesn't happen from one day to the other.”

Mariana explains how working at the Los Angeles County Fair’s “America’s Great Outdoors” exhibit helped her to work up to being comfortable talking to adults visitors about Nature.

“Little things at first, then the LA County Fair. When we did rotations, I started with the little things like playing games with the little kids, [asking them] ‘What is one of the Smokey the Bear rules?’ and then they would answer and then you'll hand them the bean bag. That's all, little things like that, and then they'll rotate you and put you in a different thing ... and the next thing you know you're talking about how many years we're celebrating for having this wilderness place and stuff like that. So little by little. You start off by talking to little kids, and then the next thing you know you're talking to adults.”

Joselyne noticed that other youth also became more comfortable expressing their thoughts and that their improved speaking ability was catalyzed by their experiences with Nature.

“Also, I've noticed with other students that they don't seem so shy anymore and uncomfortable with talking to people. Like, as the months got along, I remember

[Naomi] becoming more comfortable with public speaking, and also with Philip, I remember having him in other classes and he was just so shy and just to himself, and then when I saw him last Sunday, he seemed like a different person. He was willing to talk first, and he was willing to have a conversation with me. And I want to say that Generation Green contributed to that, yeah. And so it's definitely not just hiking, camping, because the hiking and camping influenced his public speaking, influenced the way he thinks about the environment, the way he thinks that there's a need to save water. It's all part of like being a generation, the generation to just provide so much more, because since Generation Green is informing us about all these problems, now we can contribute [to] that and pass that on to other people, right. That's what I think."

3.2.4 Meeting environmental professionals and learning about their jobs.

As a physics teacher, I often found myself saying to students, “When you get out into the real world...” when I needed to explain why we were doing a particularly onerous calculation of dubious future usefulness. The trouble was, I wasn’t so sure what the real world was like—I only knew what it was like to be a high school physics teacher. The same was true for many of my colleagues. We were trying to prepare students for a world of adult work that we didn’t fully comprehend ourselves. And it didn’t help that the academic content we were teaching was frequently divorced from the context that made it meaningful in the first place. This is what makes the Generation Green program such an influential experience—youth engage in real forestry work (restoring habitat for wildlife, clearing brush to reduce fire danger, repairing trails for hikers, etc.), and then they talk to real-life conservation professionals who enjoy sharing the lessons they’ve learned through years on the job. Joselyne talks about the contrast between her typical experiences in the classroom and the presentation given by the Pasadena fire chief during a Generation Green meeting.

“It was kind of like, I want to say- I wouldn’t say shocking, I want to say it was kind of like really new. Like, I had never been in a club or a meeting like that before. Because I remember the first day there, there was a firefighter there, and I was like ‘Oh my God, this is getting straight to the point,’ and I just remember it was something so different,

it wasn't like the basic education way. Like, I want to say it was like- it was outdoor education, it wasn't like your typical here's English, math. It was just like- it was a different topic, entirely. Like, I don't even learn this in science, like biology or whatever."

Drew vividly recalls listening to Trevor Pell, a California Fish and Wildlife officer, describe his experiences tracking and apprehending poachers, as well as how this helped him to think about his future.

"The fish and game warden came and ... I was just listening to what he was saying. And I could picture it because it was in such vivid detail because he was describing his personal day. And so, when we had to write about it ... I remember writing about like, 'I thought this was really interesting. I think I want to pursue something similar to this.' That's why it stuck with me as to when people ask me what are my career options that I'm looking into, I always say forest ranger and fish and game warden. ... He described it so well to me that I could visualize it and I could picture myself doing that in the future. And I was able to reflect on it through writing in my notebook. And I still do that when I go to Berkeley. I still have my notebook actually in my car."

In addition to learning what it's like to work in various conservation-related fields, participants also get to know these experts on a more personal level through multiple encounters and prolonged visits. Despite busy schedules, these caring individuals make time to share their professional journeys so that youth can learn from their experiences. Youth learn why Forest Service staff chose to work in this field, what aspects of the job they find most rewarding, and how they've handled adversity, among many other things. Melissa describes how meaningful it was to talk with the Supervisor of the Angeles National Forest.

"One thing I always loved about the program is the people we've met. One of my favorite people is ... Forest Supervisor Mr. Contreras, Thomas Contreras. I met him multiple times and he's just such a nice person. And to think his responsibility in the forest- he has to manage so much land and he's just the most humble, nicest person ever. I met him like once and then the next time I saw him, he was like, "Oh, I remember you." And I was just like, "Oh, you do?" This is cool. And yeah, I just met him [on] multiple occasions and I even had just a talk with him one day in his office where I went to visit him, and it was just really nice getting to know people and seeing what they do for a living."

Melissa also explains how meeting Forest Service professionals from different branches of the agency helps her to envision being successful in a variety of careers.

“The people we met. One day we’d meet, like I said before, Mr. Contreras who was the Forest Supervisor, and then we’d meet the fire chief, and then we’d meet firefighters, and we’d meet the rec techs. All of that. I just saw all their jobs and I was like, ‘I could probably do any one of these.’ It’s like there’s so many choices and they’re all like basically doing the one common thing which is helping preserve Nature.”

Similarly, Luis shares how working alongside Forest Service staff at the “America’s Great Outdoors” exhibit of the Los Angeles County Fair motivated him to think about his future.

“Working directly with the staff was great because I got to know more about them and more of the kind of fieldwork they do, and they really got me interested in what I wanted to do too. Also, the firemen that used to come and volunteer too. That was fun. I remember one year a fire broke out, the first year I was there, I think. They came to volunteer, the firemen. As soon as they saw the fire break out, they sprinted out of there really quickly. That was really cool to see.”

In addition to inspiring youth to pursue conservation careers, the professionals that youth meet through Generation Green also provide a clear-eyed look at what it’s really like to do those jobs. As a teacher, I frequently encountered students with what seemed like unrealistic expectations of their chosen fields. But who was I to say what these jobs would be like? I didn’t have any first-hand experience to share. I could only ask thoughtful questions to encourage students to reflect on their decision-making processes. Unfortunately, this is a problem for our educational system across the board—we claim to be preparing youth for their future careers, but we give them very little exposure to the everyday realities of these professions. In Francisco’s case, he wants to be a wildland firefighter, but he is naïve to the dangers involved. When asked what he was proud of doing through Generation Green, he talks

about discussing his career plans with a Forest Service fire fighter and the value of receiving frank advice.

“Probably meeting one of the fire fighters who told me how to get in and what to do. Because I was like all excited, I was like, ‘Oh, I’m going to be a fire fighter!’ He was like, ‘Dude, dude, calm down.’ He was like, ‘Calm down’ in Spanish [¡Cálmate!]. He was like, ‘Dude, you know, this job is hard, it’s not easy, okay. You can die, and you put yourself at risk. So, don’t get too excited, okay?’ It’s a lot of work, he said, it’s not easy. He’s like, ‘Just go home, graduate, and do everything you need to do, go to college, and then come back here, okay, when you’re ready.’ I was like, ‘Okay.’ That hit me pretty good. ... So, he made me think when I got home, sometimes you can’t just get too excited ... You’ve got to look ahead—what’s going to happen? It was pretty deep what he told me.”

Although youth occasionally receive such a reality check from program mentors, they also receive plenty of encouragement to pursue their passions despite the challenges involved. One of our most compelling discussions was with Eugene, the Supervisor of Monrovia Canyon Park, who accomplished a difficult mid-life career change. Previously a professional tattoo artist, Eugene felt called to work in Nature, and he had the tenacity to pursue the additional education and training this required. Up to his neck in tattoos (literally), Eugene’s physical appearance can make an impression before his thoughtful words do. Thankfully, not every HR department judged this book by its cover; Generation Green participants listened in rapt attention as Eugene shared his journey to becoming a park ranger. His story resonated with Generation Green youth, many of whom know what it’s like to struggle and to be judged unfairly. Alondra recalls how Eugene described the obstacles he faced in becoming a park ranger.

“We went to Monrovia Canyon, two days ago, and we met with this guy named Eugene, who was one of the park managers. And his story was very wonderful to listen to, and we learned a lot from him because he in particular went through a lot of struggles getting to where he is now, because not a lot of people would hire him. He got, I think, 16 rejections from people. He got 16 rejections and some of them were

just volunteer positions. And even Hector who's one of the coordinators for the Careers in Conservation program this year told us how he had told him when he first met Eugene, he wouldn't hire him. But Eugene proved him wrong. And he ended up being hired because of determination and persistence. So, from that talk alone, we just learned that, you know, there's challenges that come in the way, but if you really have the determination and you really show you're willing to put in the effort in what it is you want to accomplish or do, you can really- you can make it happen."

By meeting people like Eugene with whom they can identify, youth develop the belief that there are viable paths to conservation careers for people like them and that their persistence will be rewarded. This belief is grounded in the trust that program mentors establish by making youth feel valued and worth their time. Raymond describes what it was like to interact with Forest Service staff.

"I met a lot of great people up there too who didn't have that look on their face like, 'Ugh, he's back again' {sigh of disgust}. I ask them [something], and it's like 'Yeah, [of course] Ray' {upbeat, affirming tone}. They would just tell me everything they know, because they were just happy to tell me, not just, 'Ugh, here we go again, he's back today.'"

When Raymond says, "Ugh, he's back again," he's describing how some teachers would react to his entry into the classroom. A teacher should not make a student feel this way—period. However, Raymond did play a role in this dynamic—elsewhere in our interview, he admits to cutting up in class to distract from his shortcomings. Such mischief is often the result of a student's need for adult attention or his/her difficulty with an assignment, but when a classroom contains 30+ students, it's very hard for a teacher to meet everyone's needs. By contrast, the Generation Green program provides youth with abundant opportunities to interact with Forest Service staff one-one-one or in small groups. As a former teacher, it was eye-opening to see youth who caused distractions in the classroom behave quite differently in the outdoors where they had a stimulating environment and direct interaction with caring

professionals who wanted to share their time. Raymond credits such experiences with motivating him to work for the Forest Service.

“[The Forest Service workers] were happy to tell students what department they specialize in and what do they do. ... One of the guys I met specializes in the nursery department. He told me everything I need to know; he knows every little thing about the trees that I never knew. He can take a look at a tree and tell you how old it is. I said, wow that's a talent, that's a talent right there. Yeah, I was one that really liked going to the nursery. I didn't want to leave that place because that guy taught me so much. ... So them teaching me everything, it's just like I know there's something more out there to learn than this. Now I really see myself working for the Forestry Service and just being out there. I tell everybody that. I want to work up there. If not work up there, I want to be up there, you know. One or two things, it's a stress reliever and you're helping the Earth, that's my thing. Once I realized those two, it's like, I love this place. I would come back to this place anytime.”

When Raymond talks about the nursery department, he's describing working alongside staff from the Forest Service and the L.A. County Fire Department (Forestry Division) at the “America's Great Outdoors” exhibit at the Los Angeles County Fair. There, a small tree nursery was set up to distribute thousands of Italian stone pine seedlings to visiting schoolchildren and families. Working at this exhibit represents a unique developmental experience for youth because they engage in meaningful public outreach alongside forestry staff, and then they can process these experiences with staff during the periodic lulls in visitors. During periods of intense activity—when throngs of children descend on the exhibit—Generation Green youth do the same work as the adult forestry staff: distributing seedlings, providing instruction about planting and care, and educating youth about forests and fire. Observing this exhibit station was always enjoyable because the children are thrilled to receive their trees and because they blurt out funny, inadvertently profound interpretations of the natural world as they engage with Generation Green youth and forestry staff. After one school group departs, there is typically a period of calm before the next wave of children arrives. This gives youth and forestry

staff an opportunity to talk informally, often to reflect on humorous things that were said by the previous group of children, or to help youth polish their presentations for the next group.

In this teaching-learning feedback cycle, youth have a genuine interest/need to learn about forestry so that they can help to educate the schoolchildren who are visiting. Youth enjoy working with these kids because they bring a *joie de vivre* to the whole exhibit and because youth find it meaningful to pass on to the next generation what they've learned about protecting Nature. Youth also appreciate that teaching children is a low-stakes opportunity for personal growth; the children do not pass judgment—they're just happy to explore the exhibit and to be learning outdoors. As a result, youth feel free to try different approaches as they hone their lessons, and they receive immediate feedback from a friendly crowd. The youth naturally look to forestry staff for guidance in improving the content and delivery of their talks with the schoolchildren, and this helps to establish an authentic mentoring relationship, which the staff find rewarding as well. Because youth and forestry staff work together at the same task (outreach) and because they represent public land management agencies, youth get a taste of what it's like to work as adult. Forestry staff introduce themselves to youth by their first names, and they often share lunch with youth. In this way, youth get to see not just what these forestry jobs are like but what these staff are like as people as well. Further, by having prolonged and repeated contact with forestry staff, youth come to understand these individuals in relation to their jobs—how they carry themselves as people and as professionals, how their personalities mesh with their jobs, and whether these staff are people they want to emulate. Mariana describes what it was like getting to know employees of the Forest Service.

“You realize that the Forest Service people, the people that work there, they love what they do. They're not like other people thinking about, ‘I make good money.’ They

don't think about that. They love what they do. ... They'll take time out of their work to make you learn new things. They're not like, 'I'm off schedule.' They'll still want to keep teaching you. ... Because each individual has their own personality, but their personality is good. Like, you just realize how much they care for what they do. They care for everything—the animals and pretty much everything. Because they don't see a tree that's just a tree. They see it as more than just a tree."

In addition to working with adult Forest Service employees, Generation Green youth also try out these roles by putting on the Forest Service uniform. Youth are issued several sets of clothes for different program functions (e.g. real Forest Service uniforms for public events), and they take pride in being regarded as Forest Service employees.

"I always liked wearing the uniform. People always looked at you differently. ... It made me feel different because a lot of people knew who we were. They'd ask us for help. They'd ask us questions, and they knew we were people they could come to. Then other people were scared to approach us, where we'd have to be like, 'Do you have a question? Because you look completely lost.' And they'd be like, 'Oh, you're here to help us?' And we're like, 'Yeah, we're here.' It felt good helping people and then helping them realize that there's people out here that you can contact; if you're lost, there's someone always here."

3.5.5 Building a professional network and staying connected to USFS

In addition to the internal assets that Generation Green helps youth to develop, program participants also gain invaluable contacts and relationships with professionals throughout the Forest Service and at many other agencies (the National Park Service, the L.A. County Fire Department – Forestry Division, the California Department of Fish and Wildlife, the Bureau of Land Management, etc.). These caring individuals, often selected by program coordinators for being particularly supportive of youth, are happy to share their experiences and insights about careers. They frequently give out their professional and/or personal contact information, and they encourage youth to contact them if they need further advice or help finding a job in the future. The accessibility and support offered by these professionals further enable youth to

envision themselves in conservation careers because they know they have advocates in these agencies. Adan describes how his program coordinator, Jonar, encourages youth to get to know the staff from other agencies they're working with at the "America's Great Outdoors" interagency exhibit at the Los Angeles County Fair.

"Networking. You gain networking. You gain social skills. You build, network. At the Fair, Jonar would say, 'Get your network. Network, network.' There are older people here that work with different agencies, older people that work with the Forest Service that will help you one day. ... He'd say, 'Network because some day these people can put in a good word because they'll know who you are because you've met them.' Networking I think would be a big thing. They do emphasize [getting] to know people. You never know, it could be important. Networking is a real big thing."

Alondra shares what it's like to meet people working in different fields and at different agencies and how it's been helpful to build connections with them.

"But we also learned through the people we network with and meet every day in these conservation fields, which is really nice. And I think it's the best experience because we meet so many people from so many different fields and different job titles. From people who work at nature centers, people who are park managers, people who work at the United States Forest [Service] headquarters, people who just do trail maintenance, volunteers, game wardens, firefighters. We learned from all these, we hear and talk to all these different people and their stories are all different. And we learn and network, we learn different things, and we also are able to build connections with them, which is so amazing because if we ever need something, basically to all the people we talked to within the program. They're more than willing to help us out and answer any questions or get us in contact with anyone in their field."

Another benefit to the Generation Green program is that staff from the Forest Service and from other agencies will reach out to alumni to let them know about opportunities for jobs, internships, and volunteering. Melissa talks about what she gains as an alumnus of the WildLink program, which provides youth with guided backpacking trips in wilderness areas of Yosemite National Park.

“A network because I’ve done a few programs. All the time I’m getting e-mails like, ‘We need an intern for this and this, we need a this and this.’ There’s always job opportunities being sent through the people I met throughout [that] time. They’re always sending me job offers. They’re like, ‘WildLink is a life-long thing,’ so anytime they need someone, they e-mail us like, ‘We have this opportunity for someone to come down for 6 weeks. Just apply.’ It’s just like you’re in the circle for the rest of your life. I can go to their Fam Camp (they had a family weekend). I can go to it every year if I want. We get e-mails all the time like, ‘We have an internship opportunity. Just e-mail me personally and I’ll tell them it’s a WildLink kid.’ They help you get the upper hand.”

Reannon describes how staff from the Forest Service still reach out to offer her job opportunities and how it’s been rewarding to remain connected to the agency.

“That felt awesome because even after the program's been over for like two years already they're still keeping in contact with me to see if I want to do this job or if I'm interested in doing something like the Field Ranger internship now. It's awesome because I love working with the Forest Service, I love being outdoors and the fact that I made such a great connection with Jonar and Rob that I'm still keeping in contact with them and even if I don't contact them, they're contacting me. Just that connection of staying in contact with them is awesome. ... They'll send me emails of applications for different positions. It's awesome having those people there because if I have the choice I'd rather go work over there and do something I love than working at the job I hate going to everyday. It's awesome because that [of] connection we all have. It's crazy to have that connection with someone who has the same passion as you do for the outdoors. It's awesome.”

Chapter 4: Implications and Recommendations

4.1 Overview of implications of research findings

When I started my research in 2014, I could not have imagined it would take me so long to complete. From 2014 to 2018, I spent a large part of what was supposed to be my research time assisting program coordinators at Muir so that the program would not severely underperform or collapse due to lack of support from program managers. Having taught Muir

and still feeling very much a part of the community, I couldn't stand to see the Forest Service let down a great group of young people who had totally bought in to the program and who were making the most of their opportunities with the Generation Green. If I had known ahead of time how things would play out—that I'd end up supporting seven different coordinators in trying to make Generation Green everything we believed it could be—I would probably do it all over again. I had the opportunity to work closely with seven amazing, altruistic, Nature-loving people who were equally excited to help kids learn and grow outdoors. I worked with some of them for only a few months before they had to take jobs elsewhere (to save money, the Forest Service hires these “interns” through a non-profit organization, leaving them with no job security and low pay). But in those short periods of time, we experienced things—like meeting the Yosemite ranger Shelton Johnson and watching our youth wake up to new-fallen snow beneath Half Dome—that I remember as vividly as if they happened yesterday and that I will recall fondly for the rest of my life. The “highs” of success—of overhearing youth who had previously never left the city suddenly say to each other things like, “I’m going to do this with my kids someday” at the end of a difficult hike—exceeded anything I experienced as a classroom teacher.

But as I tried to write this report to describe how Generation Green was having these positive impacts on its participants, I couldn't help but see how the exemplary work of every coordinator—and by extension the program delivered to youth—was constantly being undermined by negligence on the part of Forest Service managers above them. And the closer I looked at how the program was being administered by these individuals, the more upsetting it was. As much as I loved the positive things I saw coordinators doing with youth outdoors, I

didn't feel like writing a treatise on the mechanisms of youth development in Generation Green when the program was about to fall apart. It felt self-serving and phony to try to earn a master's degree on that basis. After all, I had undertaken this work to give back to Muir and to increase support for Generation Green. But what the program seemed to need most at this time was someone to objectively document its constraints and to explain to the Forest Service how these issues were negatively impacting youth. So, I parked my thesis and instead began to create a record of all the unnecessary problems that were preventing the Generation Green program from fulfilling its mission as described in Forest Service documents.

My initial intent was to prepare a two-page summary of the issues for the Supervisor of the Angeles National Forest. I set about doing this at his request; he was sympathetic to my concerns and asked for a written description of the problems to pursue the matter up the chain of command (as a Regional workforce diversity program, Generation Green was outside of his oversight). I started by writing down a few ideas in my research journal every day as I talked with coordinators about the frustrations we shared. But as the problems snowballed, so did my summary. I grew determined to make an airtight case about precisely how the program was being mismanaged and what the Forest Service needed to do to make things right for participants. To strengthen my argument that the Generation Green program wasn't living up to its obligations, I first needed to remind the Forest Service what those commitments were. This sent me digging for every piece of documentation I could find that might describe: 1) what the program was supposed to accomplish, 2) what processes would be used to achieve those results, and 3) how the outcomes would be evaluated.

I sifted through all the old files in the Generation Green office at Muir; I reviewed everything that was available on public Forest Service web pages dating back to the early 2000s; and I cultivated an ally in the Supervisor's Office who was able to provide me with relevant internal documents (information that was also accessible through FOIA requests, had I known it existed). As I pieced together the program's history and purpose, I was surprised to find that every document I could lay my hands on described the program only in the most general terms. I could find nothing that would serve as a benchmark to assess how well the Generation Green program at Muir was functioning. This fact, coupled with my observations of program managers' performance, left me with the distinct impression that the Forest Service itself didn't know what it wanted from the program, aside from the public appearance of providing a diversity-focused youth program. During my internet document search, however, I did come across a very relevant and useful publication by the Forest Service's Washington Office entitled "USDA Forest Service Integrated Strategy for Youth." In this document, the Forest Service outlines five strategic goals for its youth engagement efforts as well as nine principles to guide this work. Along with descriptions of these goals, this publication provides implementation options and key outcomes for each goal. Finally, I had a way to hold the Forest Service accountable to its own standards. So, I took my long list of concerns about the program and classified each one according to the strategic goal that was being undermined. With these issues categorized by theme, I finally had an organized way to think about these problems and the relationships among them. The situation felt a little less hopeless, and I was even more motivated to produce a thorough accounting of: 1) the nature and causes of Generation

Green's mismanagement, 2) how this state of affairs was working against the agency's goals for diversifying its workforce, and 3) what steps might be taken to remedy the situation.

As I constructed this narrative, I continued to connect the dots about how the program was being managed, and I realized that some of the conclusions I was reaching would need to be backed up by evidence. This led to several interviews and discussions with coordinators and youth to learn how they felt the program was performing and what needed to change if anything. This wasn't the research that I wanted to be doing, but I conducted it alongside my investigations of Positive Youth Development as an outlet for the feelings of frustration that left me not wanting to finish my original research project. As much as I wanted the Generation Green story to be all good news, that wasn't the whole truth of the program. The same program that could uplift and inspire youth to find their calling in outdoor careers was also capable of discouraging and disillusioning them about the Forest Service. I concentrated on telling the latter story first because I did not want youth to continue to be hurt by losing trusted career mentors abruptly and by losing valuable opportunities when a coordinator was suddenly not available to perform key functions by the deadlines of partner agencies (e.g. recruiting and hiring participants as Los Angeles County "Youth Workers" for the summer "Careers in Conservation" internship which paid about \$2,700—money that youth needed to pay for college or to help support their families). My report on the Generation Green program's problems and possible solutions ended up consuming 37 single-spaced pages. Select passages from that document have been incorporated into this report because I believe the primary implication of my study is that the Forest Service simply needs to stop destabilizing a very positive and powerful career development program. To ensure that these implications follow

from the Results presented previously, I coded my 37-page document according to the conceptual framework I created from my interviews with participants. In the remainder of this chapter, I discuss how Theme 1 – Career Development is being undermined by the way the program is managed, and I suggest methods to address these problems. As discussed previously, Themes 2 – 5 will be the subject of future publications.

4.2 Implications and recommendations for theme 1 – career development

4.2.1 Maintaining relationships which support career development

Generation Green provides youth with life-changing opportunities in the outdoors, but these career development experiences are brought to life only through the trusting relationships that are established between program coordinators and youth and between coordinators and partner organizations, such as the L.A. County Parks & Recreation Department. The findings of this study highlight the importance of preserving and strengthening these relationships which help youth make the challenging transition from adolescent conservation apprentices to adult conservation professionals. I have watched seven different coordinators earnestly develop such relationships with youth, only to see these relationships effectively terminated by the coordinator's departure, which always occurs too soon due to the position's temporary nature and low pay. When this happens, participants suffer both the loss of a trusted career mentor and the loss of the unique outdoor opportunities that are generated through interagency collaboration. This is the opposite of what the literature on Positive Youth Development finds beneficial for youth. Search Institute (2014) scholars list six developmental assets under the category they term "Support." Among these is:

“Other Adult Relationships – Young person receives support from three or more nonparent adults.” Similarly, the Committee on Community-Level Programs for Youth (2002) lists supportive relationships as an important feature of positive developmental settings: “Opportunities for adolescents to experience supportive adult relationships” (Eccles & Gootman, 2002). While the Generation Green program does a wonderful job of building relationships between youth and caring, helpful people in the environmental conservation community, the Forest Service is equally good at carelessly breaking these relationships by failing to support its program coordinators.

When youth lose a Generation Green coordinator, they lose not only a career mentor in the Forest Service but also several other mentoring relationships with first-rate individuals at partner agencies. This is because the coordinator serves as a hub for youths’ connections to an array of other conservation agencies / organizations which want to work with diverse youth in a sustained manner but which don’t have the institutional capacity to provide a program like Generation Green. The Generation Green coordinator provides youth with transportation to field sites across Los Angeles County so that youth can work with staff from these agencies; the coordinator also collaborates with these individuals to create a variety of enriching experiences which weave together learning, mentoring, and hands-on conservation work. The “Careers in Conservation” partnership with the L.A. County Parks & Recreation Department is an excellent example. When youth abruptly lose a Generation Green coordinator at John Muir High School, they also lose access to the wonderful people and supportive relationships at the Eaton Canyon Nature Center.

It takes time and effort for the coordinator and her/his counterparts at partner agencies to build the trust and shared understanding that enable successful partnerships to thrive. When a coordinator departs, the partnership between Generation Green and the partner agency is effectively dead because program managers do not step in to sustain this collaboration or aid in the transition to a new coordinator. This is very frustrating to the staff at partner agencies; they have devoted their time, energy, and goodwill toward building a program and a relationship with the Forest Service only to see their efforts undercut by the loss of a coordinator with whom they've developed a camaraderie and a productive working relationship. This does not reflect well on the Forest Service, and it reduces the quality of the program experienced by youth. When the agency loses the trust of its partners, it risks not being able to restore these relationships. Further, the Forest Service develops a reputation for unreliability within the regional community of organizations engaged in similar work; this serves to limit collaborations with the agency, inevitably reducing the mentoring relationships and career development opportunities available to Generation Green youth.

The youth served by Generation Green should be regarded as valuable partners of the Forest Service; they are eager and effective ambassadors for the agency to a diverse audience of family and friends. The Forest Service lets these partners down when a coordinator with whom they have bonded suddenly departs for a new job because she/he needs predictable employment and a living wage; many youth drift away from the program when this happens. This is particularly hard on youth who have come to rely on the Generation Green coordinator as a caring adult during times of personal challenge or hardship. Catalano et al. (2002) note that bonding is an important feature of Positive Youth Development programs, and it is a

shame that Forest Service does not appreciate the emotional impact of allowing these bonds to be broken suddenly and without justification. At a minimum, the Forest Service should have a “Do no harm” policy for Generation Green because for some youth, the negative impacts of this breach of trust will exceed the short-term benefits they experience in the program.

Underserved students are frequently let down by institutions designed to serve them, such as schools, and the Forest Service feeds into this pattern with its management of the Generation Green coordinator position. The Forest Service publicly touts the positive aspects of these youth-coordinator bonds, and the agency needs to deliver on these commitments by ensuring that these mentoring relationships have sufficient time to reach maturity and to produce the desired outcomes.

Because the Generation Green coordinator is vital to the success of the program, it is imperative that she/he be retained for as long as possible. When she/he has built the program into a sustainable state (this takes about 2 years), certain functions, such as recruitment, take care of themselves, and there is a strong sense of community. Diligent management is still required, but when the program is not in survival mode, the coordinator can devote more time and energy to higher level program processes (e.g. working with teachers to develop curriculum connections, supporting program alumni along college/career pathways). It is especially important for Generation Green to support program alumni as they make the challenging transitions from high school into college and careers, but this cannot be accomplished when there is continuous turnover at the coordinator position. There are two main reasons for this: 1) a new coordinator simply doesn’t know who the program alumni are because she/he is not provided with any records, 2) the capacity to assist alumni stems from trusting relationships

which have been carefully cultivated over time (a new coordinator can't instantly create the kind of bonds that develop from conversations around the campfire). If the Generation Green coordinator could be assured of employment for several years, then she/he would have the ability to manage essential program processes which take place over time scales longer than one year. This would elevate Generation Green to a higher level of performance, ensuring a greater long-term impact on youth and on the workforce of the Forest Service.

Alternatively, when there is a new coordinator every year (or less), the program does not benefit from these more advanced functions because the following things routinely occur: 1) students feel abandoned by the departure of a caring mentor they looked up to, and many leave the program, 2) the Forest Service loses some very talented, hardworking and sincere young people as future employees, 3) the new coordinator spends much of her/his time reinventing the job because essentially no training, guiding program documents or participation records are provided, 4) the new coordinator finds herself/himself in a constant scramble to fill openings in trips/activities (e.g. the Yosemite backpacking trip) with any students she/he can find, some of whom will flake out at the last minute because they have no ties to the program, 5) trips/activities function as isolated events when the program lacks a committed base of participants, 6) students do not benefit from the synergies and articulations among trips/activities that naturally occur when a coordinator has the ability to carefully plan out the year, 7) students do not receive the longitudinal support from program mentors which has been shown to improve college/career success for underserved youth, 8) the coordinator's morale drops when it becomes apparent that there will be no training, support, feedback or appreciation from program managers, 9) the coordinator feels used and discarded when,

having done all the program's hard work, there is no future for her/him beyond the coordinator "internship," 10) the coordinator takes a job elsewhere, and the Forest Service loses a dedicated and talented employee, and 11) steps 1-10 are repeated with a new coordinator and a new cohort of students the following year, if not sooner.

The best way to address these recurring problems and to realize the full potential of the Generation Green program is to retain a dedicated and talented coordinator for a timespan commensurate with the program's youth development objectives—at least 3 years, ideally 5-7 years or longer. If Generation Green is to function as it was intended—as a reliable pathway for diverse youth into Forest Service careers—maintaining the supportive relationships youth develop through the program must be a high priority for the Forest Service.

4.2.2 Guiding youth along pathways to Forest Service careers

These supportive relationships must also be maintained after youth have completed the high school Generation Green program to ensure that youth are successfully making the transition from Generation Green into careers with the Forest Service. The program is intended to help diverse youth make this journey, but I am not aware of many participants from southern California high schools who have successfully followed this college/career path. Through this study, I've found that the Generation Green program does an excellent job of providing youth with strong foundational experiences and of helping youth to envision themselves in Forest Service / conservation careers. However, youth often feel adrift after graduation due to the lack of a formal program / plan for staying involved with the agency. Raymond describes needing some extra support to make the transition from high school to a career with the Forest Service.

“There wasn’t that next step, and that’s the thing it kind of lacked for us. There wasn’t a next step for us. They wanted us to go to school and then come back and then try to get a job over there because we already have our first step in the door to that career in the program. With that- we just needed that extra guidance because we’re still little kids. We need that extra guidance, what can we do next, like at the end of the program ... They never talked about it with us. But if there was a way they actually came and talked to us about it like, ‘If you want to continue this program with us, stay after or come talk to us personally—we’ll find a way for you guys.’ Even if there wasn’t a way probably, but if they kind of had an insight like, ‘Just do this, do that, stay in contact with this person or that person and you can get in.’ If there was a way like that- I wish there was, honestly, I’d probably be there right now.”

By neglecting to adequately support Generation Green graduates in finding their career footing after completing the high school program, the Forest Service is again acting contrary to principles described in the Positive Youth Development literature. The Search Institute (2014) describes two developmental assets which the Generation Green program could more fully cultivate in participants by helping them with transitions beyond high school: 1) “Positive View of Personal Future – Young person is optimistic about her or his personal future,” and 2) “Planning and Decision Making – Young person knows how to plan ahead and make choices.” When youth do not know how to pursue college majors, internships and/or entry level jobs that would help them to stay connected to or employed by the Forest Service, it is difficult for them to visualize their futures with the agency. One participant recalls not knowing what to do to stay engaged with the agency after completing the Generation Green program.

“Everything I expected was there, all the opportunities were there, all the knowledge for more information was there. That was it, just pretty much the only thing I kind of wanted more of was more opportunities like that after the program was over. Because I know that it’s specifically for students, so it’s like okay once we graduate and finish the program, what’s next? What’s the next step to that, to go more involved with the Forest Service? I would probably say that’s like the only thing, after that program is over, it’s like what now? What do you do now? ... I don’t know what to do now. That’s one of the things that gets you confused. Besides that, you love everything about the program. Just when it ends and you graduate high school, it’s

like okay what do I do now, what happens? ... The program ends, they give you awards and then that's it, you're pretty much on your own."

Based on my conversations with alumni and on my observations of program activities, I think Generation Green can help youth to be more self-sufficient in following the pathways to Forest Service careers by providing better college/career training in the Generation Green program. Youth who show interest in studying natural resource management usually do not have deep knowledge of the programs offered by the many colleges and universities in California. Generation Green participants should not have to do all this research from scratch—the program should be able to provide descriptions and contact information for at least ten strong programs at different levels of selectivity. Coordinators should stay in touch with alumni as they attend college, and they might consider inviting alumni to share their experiences with current high school students. The Generation Green program could also use its transportation capacity to take youth on tours of local colleges/universities; additionally, staff from these institutions could be invited to speak at Generation Green club meetings. The program is also failing to help youth pursue Forest Service careers on their own because little/no training on the USAjobs.gov website is provided. This website, which is the gateway to all federal jobs, can be confusing and intimidating for first-time applicants. For youth to feel confident using this website, they should be offered computer-based training sessions where they can create USAJobs profiles, update their resumes, ask questions, and receive feedback. In addition to current Generation Green participants, there are program alumni who would still like to work for the Forest Service but who gave up on the idea because they didn't see a clear path/process for doing so. These alumni would also benefit from regular opportunities to receive help with

their resumes and job searches; these sessions might be combined or alternated with monthly day hikes or service activities to help alumni stay connected with the Forest Service.

To support Generation Green youth after they graduate from high school, the program needs more effective methods to stay in touch with these alumni. Currently, some staff members and alumni contact each other individually through e-mail or text messages (e.g. to recruit or search for jobs), but the program lacks a plan for providing all stakeholders with regular updates on the program and for offering opportunities to stay involved with the Forest Service (e.g. career workshops, volunteer events, day hikes, awards ceremonies, donation needs, staff changes, job/internship openings). Some of this information is posted on the Generation Green Facebook page in piecemeal fashion, but there are drawbacks to this approach: 1) many people no longer use Facebook regularly, and 2) when alumni do see the posts, it's often too late (e.g. the internship deadline has passed or the trip/activity has already occurred). Program alumni have proven to be very valuable resources to current participants, and Generation Green should keep them actively involved with the program. To this end, alumni have suggested that a monthly newsletter sent by e-mail would be very helpful (e-mail is not latest in social media, but almost everyone has/uses an e-mail account).

Although Generation Green participants develop an affinity for the Forest Service, their strongest bond is with their program coordinator. During and after college, the coordinator can play a pivotal role in helping youth to navigate the Forest Service and other federal agencies by recommending internships, by providing introductions to other staff, and by assisting with the federal hiring process (provided, of course, that the coordinator can keep her/his own job). Perhaps most importantly, a student's personal connection to the coordinator helps her/him to

believe that someone in the Forest Service will advocate for her/him. This belief—that you belong in the agency and that someone is looking out for you—is one of the most important elements of the pathway, especially for students of color who have observed that the Forest Service is not a very diverse agency.

4.2.3 Providing conservation education that supports college/career readiness

Many of the experiences that youth find meaningful in the Generation Green program can be enjoyed by simply looking at what captures the attention—vibrant fall colors, a thundering waterfall, majestic bald eagles. But an equal amount of Nature’s magic is hiding in plain sight, visible only to the trained eye—a cleverly camouflaged owl, plain-looking plants with medicinal properties, the faint paw prints left by a mountain lion. To ensure that youth get to experience everything that Nature has to offer during their outings—especially knowledge / skills which can aid future college study and careers in conservation—we need to make sure that program coordinators bring a naturalist’s eye into the field. By and large, this has been the case as Generation Green youth have been fortunate to learn from some very knowledgeable individuals. Unfortunately, however, the Forest Service does not have policies and practices in place to guarantee that all coordinators have a certain baseline of knowledge regarding environmental conservation (and the ecosystems of southern California in particular). For example, one of our prior coordinators seemed to know little about the native plants we encountered while working in the Angeles National Forest for six weeks one summer. As a result, participants did not learn much about the unique ecology of this region during their internships. To be fair, this coordinator was well-regarded by youth, and he served them very well in other aspects of the program, such as helping youth to develop their public speaking

skills comfortably. Still, it was a shame to see participants learn so little about the workings of the forest during a Forest Service youth program; if this coordinator had received adequate training and support for environmental education, the youth might have appreciated their experiences in the forest even more.

Through this study, I learned that youth found their experiences with career-focused, outdoor learning to be particularly meaningful and enjoyable. This aligns with the features of positive developmental settings cited by the Committee on Community-Level Programs for Youth, one of which is “Opportunities for skill-building and mastery – Exposure to intentional learning experiences and preparation for adult employment” (Eccles & Gootman, 2002).

Generation Green has the unique ability to educate participants while they are actively engaged outdoors, avoiding many of the limitations of traditional classroom schooling. The program should continue to make good use of context-rich natural settings to develop the skills/knowledge youth will need for college majors and careers in environmental conservation.

To this end, Generation Green now provides a strong “Careers in Conservation” summer internship program through a partnership with the Los Angeles County Department of Parks and Recreation, but during the school year, there is not a well-defined outdoor / environmental conservation curriculum. Valuable learning does occur on a variety of topics (often based on areas of strength for coordinators), but the program has not been approaching the educational aspects of the program in a systematic way during the school year. For example, I think it would be useful for Generation Green to have written policies and procedures for the following: 1) the specific concepts and skills youth will learn during different phases of the program, 2) the best practices for teaching and learning this content, and 3) formal and

informal methods for assessing the program's educational outcomes. Program documents, however, describe the educational component of Generation Green only in terms of the broad topics to be covered during the year (e.g. forest ecology). Given the frequency of coordinator turnover, there should instead be a written curriculum with sufficient substance to be readily implemented and then handed down to future staff. Because program coordinators may have no background in curriculum development, Generation Green could benefit from collaborating with science teachers at partner schools to identify areas where core trips / activities of the program (e.g. stream cleanup in local watersheds) intersect the California K-12 science standards. To support teachers in doing this work, the Forest Service might offer summer stipends for teachers to develop lessons based on the local natural areas where students work and recreate during the program.

Developing curricula with teachers at partner school sites also increases the likelihood that essential knowledge will remain with the program when other partnerships end. For example, the program's environmental educational component has been significantly improved through the "Careers in Conservation" partnership, much of the hard-to-come-by expertise resides with staff at the Eaton Canyon Nature Center. This partnership is at risk because the continued turnover of Generation Green coordinators has eroded the trust of the dedicated staff at the L.A. County Department of Parks & Recreation. Generation Green also risks losing educational expertise if/when Forest Service budget cuts impair the program's ability to pay for outside environmental education experiences. For example, in the fall, Generation Green pays for youth to receive an educational trip to the eastern Sierras hosted by the Mono Lake Committee; in the spring, the program pays Yosemite's WildLink program to provide. Thus,

while Generation Green's educational program is strong currently, there ought to be concern about its sustainability due to coordinator turnover, dissatisfied partners, and possible budget cuts.

I think it would also be useful for coordinators to develop annual plans for professional development based on their needs / interests and those of youth. The Project WET training offered several years ago was excellent, but it was an isolated event—it would help to have more opportunities like this where staff can learn and share best practices for environmental education. In addition to training, staff need expectations and accountability for incorporating environmental education into program activities on a regular basis. Recent coordinators have done a very good job of this, but the lack of defined standards offers no assurance that this performance level will be maintained under different coordinators in the future. During my five years of volunteering with the Generation Green program, I have observed quite a bit of variation in the environmental knowledge of coordinators. I presume it is difficult to find all the skills desired of a coordinator in a single person (e.g. outdoor leadership experience, California naturalist credentials, and experience with diverse youth). But, the program can reduce the need for a coordinator to have a degree in environmental science (or related fields) by collaborating with science teachers at Generation Green school sites. Such a partnership is a win-win—teachers always need help arranging and leading field trips, and a coordinator can benefit from teachers' content knowledge and instructional strategies.

4.2.4 Structuring program activities around career development objectives

Generation Green provides many wonderful outdoor experiences for youth, but I have also come to believe that it is not reaching its potential because program managers tend to

treat the program as a set of discrete trips and activities which repeat annually, rather than as a succession of interconnected developmental experiences which youth accumulate and integrate into themselves, the result of which is lasting personal growth. Understandably, coordinators are often focused on the most pressing day-to-day tasks—such as recruiting youth for the CIC summer program—that must be taken care of to execute all the trips/activities on the school-year program calendar. But the program's everyday activities must also function as part of a larger, longer-term strategy that leads to an acceptable percentage of Generation Green alumni pursuing higher education and/or careers in environmental conservation. Such a plan should ensure that youth will want to (and will be able to) stay involved with Generation Green long enough for the program to have its intended effect. Youth without an outdoor background probably need to spend at least two years in the program to experience all it has to offer without missing an excessive number of school days due to Generation Green trips. If a student spends only one year with Generation Green, there can still be a profound impact on her/his life (e.g. learning how to access and enjoy Nature). But for the program to reliably generate diverse employees for the Forest Service and other conservation agencies, youth need to be involved with Generation Green for more than one year, enabling them to continue to gain outdoor skills/knowledge, build a professional network, and develop a sense of purpose/agency. This is because human development is a complex process which occurs over time through the accumulation and integration of real-life experiences.

As discussed previously, the Generation Green program needs to provide youth with continued support as they make the difficult transitions from high school to college and from college to careers. Unfortunately, however, the program is also losing too many participants

from one year to the next because youth lose trust and interest when a caring and dependable coordinator, with whom they have bonded, leaves without sufficient notice, explanation, or transition. The remedy for this, once again, is to retain dedicated and talented coordinators for Generation Green for an appropriate length of time. The program should also implement formal systems for tracking student participation and for staying in touch with alumni. Even from casual observation of the attendance at club meetings, trips and activities, there are clearly predictable trends in youth participation which should be examined and discussed because they can help to keep more youth engaged with the program over longer time scales. It is a strength of the program that youth are free to choose a level of participation that suits their interests and availability, and it is natural to have some level of turnover simply because high school is such a busy time for students as they try out many different activities. However, the program loses more youth than necessary at specific junctures (e.g. when a coordinator departs), and not enough is done to personally connect with students during these transitions so that they remain involved in Generation Green. While records of attendance are kept for each meeting/activity/trip, this information is not synthesized in a way that allows program coordinators and program managers to easily monitor the flow and involvement of youth over time. I think it would be instructive for Generation Green staff to examine the participation histories of individual students and of whole cohorts to better understand how effectively the program is engaging with youth. Generation Green program documents mention a student tracking database, but I have not seen such a database in use for Muir students. Going forward, I think it would be helpful for participation records to be entered into a single spreadsheet that is shared among staff members and examined regularly as a team. This would allow

coordinators to notice which youth may be drifting away from the program so that coordinators can reach out and address any concerns or barriers to participation they may have.

In my time with Generation Green, I have also observed that the program has a natural cycle of development which starts over with each new coordinator. This process includes the following elements: tabling/canvassing on campus to raise awareness of the program and to recruit participants, taking youth on their first hiking/camping trips, having youth enjoy these experiences and recruit their friends to the program, engaging youth in meaningful employment and personal development through CIC/YCC, building trust with parents/families who encourage younger siblings to join the program, earning the trust/respect of school staff who tout the program/USFS to prospective students/parents and to the broader community, collaborating with school staff on interdisciplinary projects which benefit the forest and the classroom, building partnerships with other agencies and organizations involved in environmental conservation, having youth take the initiative to pursue their own school/community projects with the support of the Generation Green coordinator and school staff (e.g. the Muir courtyard restoration), having youth pursue college majors in environmental conservation and summer internships with the Forest Service, having program alumni return to mentor current participants, and so on until the program has achieved its goal—a Forest Service workforce whose diversity reflects the populations it serves.

It is important to recognize that the goals of the program as described in various program documents vary in difficulty and complexity, and they are accomplished over different time scales. For example, a week-long backpacking trip in Yosemite is a relatively

straightforward, short-term endeavor, yet it makes considerable progress toward the program's goal of increasing youth's appreciation for national public lands (mission accomplished). But other program goals, such as encouraging diverse youth to pursue college/careers in environmental conservation, are not accomplished by single trips/activities. Rather, it is the gradual accumulation and integration of experiences, relationships, knowledge/skills and personal reflection that helps a young adult to find his/her calling in life. The Forest Service must keep this in mind as it makes decisions about funding and staffing this vital program.

Chapter 5: Conclusions

The Generation Green program provides very positive developmental experiences and relationships for youth, particularly regarding career development. When the program is firing on all cylinders, the impact is profound and life changing. But I have also observed many situations where things were clearly not working well, and there was no process in place to: a) document the problem/concern, b) investigate how/why it happened, and c) take steps to prevent its recurrence. I believe the Forest Service should take a closer look at how the program operates and how successful it has been; the agency owes young people a program that lives up to its ideals. Based on my experiences as a volunteer and on my interviews with youth, I can attest to the program's powerful mechanisms of youth development and to the many transformative experiences had by participants. But I cannot make the case that when a certain number of youth enter the program in any given year, an acceptable percentage of them will make their way to long-term careers with the Forest Service or other natural resource agencies (very few do so, in fact). While Generation Green youth ultimately make their own

decisions regarding their futures, I believe that this program—using existing resources—can be run in such a way that youth retention and advancement are greatly increased. Several coordinators have made significant progress in this direction only to leave the agency due to the temporary nature of the position. Once again, my primary recommendation for improving the outcomes of the program is for the Forest Service to retain dedicated and talented coordinators by providing them with adequate pay and job security. To advance beyond that easy step, the Forest Service must *want* to understand how well the program is functioning.

Because Positive Youth Development often takes place in the context of community-level programs sponsored by public agencies or non-profit organizations, program evaluation is frequently cited as a best-practice for ensuring that the day-to-day activities of a program remain aligned with its objectives and theory of change. Eccles and Gootman (2002) note that while program evaluation can have many different purposes and methods, a primary benefit is that they foster accountability. Even the process of deciding how to evaluate a program is beneficial because it can promote dialogue among stakeholders about the goals of the program and about what kinds of data ought to be collected. Given that Generation Green program managers, coordinators, partner agencies, and participating youth see the program from different perspectives, I think it would be useful for these stakeholders and others to engage in an ongoing dialogue around key questions like: What does success for Generation Green look like? What are the key ingredients / core processes for this success and how do we assess or measure them? How well is the program performing relative to agency/stakeholder benchmarks and what evidence attests to this? These questions are challenging to answer because youth development is a complex process which takes place over time. Further

complicating matters is the fact that one of the major goals of youth development is to improve youths' capacity for further development (Hamilton et al., 2004). However, a useful starting point might be the development of both short-term and long-term measures of program success. Below are some possibilities based on my experiences with Generation Green.

Possible indicators of long-term success: Percentage of program alumni who return to work for the USFS or volunteer with the agency after high school or college; percentage of alumni who are working somewhere in natural resource management within ten years of graduating from the program; percentage of alumni who choose environment-related majors in college; percentage of alumni who recreate with their families in the Angeles National Forest or on other public lands; percentage of alumni who attribute to the program significant positive changes in their lives.

Possible indicators of short-term success: results of student satisfaction surveys, number of students attending weekly club meetings; number of students who participate in Generation Green outings; consistency of individual student attendance at club meetings; number of students reached through campus outreach/canvassing; number of community service hours performed by club members; number of day hikes and camping trips taken; percentage of first-time hikers and campers; number of students who pursue conservation-themed senior projects; percentage of students who report increased appreciation and/or decreased fear of the outdoors.

Of course, some of the most powerful aspects of the program, such as how it fosters intrinsic motivation, are difficult or impossible to understand using quantitative measures like those described above. For deeper insights into the program, qualitative methods—such as

interviews and focus groups—should also be used because they can yield rich, explanatory data about how youth perceive the program's impacts and how youth think the program can be improved. The youth served by Generation Green have so many interesting and important things to share about their experiences in the program, but their feedback is not being solicited in any systematic way. As a result, these valuable insights are not being used to drive the program's improvement. Instead, the program operates in essentially the same manner each year—doing much good work but also missing many opportunities for growth and failing to understand/correct some persistent problems which undermine the program's career development objectives. This reflects a sense of complacency within the agency which I believe should be disrupted—to the benefit of youth—by a comprehensive program evaluation.

The lack of evaluation and strategic planning for Generation Green is truly unfortunate because the program could accomplish so much more if its constituent activities were more thoughtfully woven together around a research-based and data-driven plan for improving the program. The Generation Green program is unique in its ability to offer students such contextually rich developmental experiences which can articulate and synergize with each other. But these articulations and synergies don't occur spontaneously—they are brought to life by the coordinator who constructively channels and melds the many interacting factors which shape the program—the principles and practices of positive youth development, the individual youth in the program and their particular needs/interests, the natural areas of southern California and the unique opportunities at each location, the various agencies and organizations devoted to natural resource management, and the curriculum, staff, and dynamics of the schools served by the program. When a dedicated and talented coordinator

harmonizes these factors, the experience for youth is much greater than the sum of the program's discrete components. This is because the program is essentially self-leveraging. That is, what youth learn and accomplish during one real-life experience (e.g. stream cleanup) informs and motivates subsequent activities (e.g. teaching young children about the importance of environmental stewardship). Such interconnected activities, grounded in service to nearby Nature and to local communities, help students to develop the relationships, values, knowledge/skills and goals which will propel and sustain them into college/careers in natural resource management.

When the program gains enough momentum, it becomes self-sustaining—students are eager to participate and they bring their friends, teachers refer students to the program and join the activities themselves, community members and local businesses donate money and equipment, staff from the Forest Service and other agencies volunteer their time and expertise to the program, etc. But achieving this level of enthusiasm and commitment requires the program coordinator to build a strong sense of community and common purpose among everyone connected to the program. At the heart of this effort are the personal relationships that the coordinator develops and maintains with/among these stakeholders. These trusting relationships are an extremely valuable resource which take time and effort to cultivate. If we nurture these relationships by retaining dedicated and talented coordinators, the program will flourish and energize itself; if we don't, the program will flounder and fail to fulfill its mandate to diversify the workforce of the Forest Service.

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Appendix A: Consent to Participate in Research

Title of Study: A Case Study of Positive Youth Development Through Environmental Conservation

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Researcher's Statement

My name is David Herman, and I am a forestry student at the University of Washington. I am asking you to be in my research study because you have participated in the Southern California Consortium (SCC) of the U.S. Forest Service. The purpose of this consent form is to help you decide whether to participate in the study or not. Please read this form thoroughly and ask questions about anything that is not clear. You may have questions about the purpose of the research, what I would ask you to do, the possible risks and benefits, your rights as a volunteer, or other issues. When all of your questions have been answered, you can decide if you want to be in the study or not. This process is called "informed consent." I will give you a copy of this form for your records.

PURPOSE OF THE STUDY

The goal of this study is to learn how young adults who have participated in the Southern California Consortium (SCC) think this program has helped their personal growth. The results of the study will be used to help the U.S. Forest Service to improve and to expand the SCC program. This research is also intended to enable SCC youth to contribute their unique perspectives to the fields of environmental conservation and youth development. This research is motivated by my experiences as a classroom teacher at John Muir High School and as a volunteer with the SCC. Environmental conservation work seems to offer a valuable context for youth development, and I am interested to learn from SCC participants about their program experiences.

STUDY PROCEDURES

If you choose to participate, I will conduct one individual interview with you that will focus on your experiences in the SCC. During the interview, I will ask you approximately ten questions about your environmental conservation work with the SCC. In particular, I would like to know how your experiences with the SCC have been helpful or meaningful to you. You do not need to do any special preparation for the interview; you can answer all of these questions based on your personal experience in the SCC. Some example questions are: What is it like to work for the U.S. Forest Service? What skills have you developed through the SCC? What are you most proud of doing through this program? None of the questions will deal with sensitive or very personal topics. You may refuse to answer any question during the interview. The interview will take about one hour. If it is OK with you, I would like to make a digital audio recording of the interview. Using the audio recording, I will type a digital transcript of your interview which will help me to study and to learn from everything you've shared. This information will enable me to write a report which describes the ways SCC participants find the program to be beneficial.

RISKS, STRESS, OR DISCOMFORT

I need to let you know that a research study may involve some risk to its participants. In this study, the greatest risk to participants is a breach of confidentiality. This could occur if the audio/transcript files of your interview are lost or stolen. Although these files will not contain any information that could be used to personally identify you, you might still experience some stress as a result of such disclosure. To make sure that does not happen, I promise to be very careful with your interview materials. When the audio and transcript files of your interview are not being used, they will be stored securely. I want you to know that I take your privacy and confidentiality very seriously. I hope you will find all of the interview questions easy and enjoyable to answer, but if you feel uncomfortable for any reason, you are welcome to skip a question or to withdraw from the study entirely. Your participation is completely voluntary, and there will be no penalty for declining to participate. If you experience any stress or discomfort as a result of this study, please contact me (David Herman) at (626) 422-6121.

BENEFITS OF THE STUDY

You may or may not benefit directly from this study. I hope that study participants will find it useful and enjoyable to reflect on their SCC experiences. By sharing their knowledge, participants may help the U.S. Forest Service to improve and to expand the SCC program. I will also share my research with the staff at John Muir High School because I think classroom instruction can benefit from the principles/practices which empower youth in out-of-school programs like the SCC. I hope this study will also contribute to increased support for youth conservation work within the Pasadena Unified School District.

CONFIDENTIALITY OF RESEARCH INFORMATION

Your participation in this study will be anonymous. I will not record any information that could be used to personally identify you. However, I will keep the audio recording and transcript of

your interview on my computer drive until the end of my study. When the computer drive containing these records is not being used, it will be stored in a locked cabinet at my house. The audio recording and transcript files of your interview will be permanently deleted from my computer disk when the study is complete.

OTHER INFORMATION

Thank you for considering my study; your participation would be greatly appreciated. However, this study is completely voluntary; you may decline to participate or withdraw at any time without penalty.

RESEARCH-RELATED INJURY

It is unlikely that any injuries will result from this interview, but if you think you have a medical problem or illness related to this research, please contact me (David Herman) right away at (626) 422-6121.

Name of Researcher	Signature of Researcher	Date
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Subject's statement:

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, or if I have been harmed by participating in this study, I can contact one of the researchers listed on the first page of this consent form. I will receive a copy of this consent form.

Printed name of subject	Signature of subject	Date
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When subject is a minor:

Printed name of parent	Signature of parent	Date
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Copies to:

Subject
Researcher

Appendix B: Interview Protocol

Research Question: How do Generation Green youth conceptualize the developmental impact of this program?

- 1) I'd like to start by asking how I should refer to the program. I hear a couple different names used for the program that we worked with—Careers in Conservation, Generation Green, SCC/YCC, etc. What do you call it when you're talking with family and friends?
- 2) How did you find out about this program in the first place?
What made you want to join the program/group?
(Probe: What kinds of outdoor/nature experiences did you have growing up?)
How long have you been with Generation Green?
What led to you sticking with it as opposed to doing something else?
- 3) Can you tell me about the most meaningful experiences you've had in this program?
What makes these experiences so important/meaningful to you?
- 4) What kinds of changes do you see or feel in yourself as a result of participating in this program?
How did the program help these changes to happen?
(Probe: When it comes to helping you grow as a person, how does this program compare to school?)
- 5) What would you say you've gained from this program? How has it helped you?
How did the program help you to gain these things?
How does the program have the effect that it does?
(Probes: How do these gains show up in your life? How are you different as a result of this program?)
- 6) What are you most proud of doing through this program?
What was it that made you feel proud?
- 7) What do you think you'll miss most or look back on most fondly about this program? What are your best memories from the program?

8) Was there anything you wanted from the program that you didn't get? Or that you wanted more of?

(Probe: Is there anything about the program that you think should be changed?)

9) Are there any other ways the SCC has affected you that we haven't discussed?

Are there any other questions I should have asked? - Is there anything else you'd like to add?

Probing questions:

How does that work?

How does that happen?

Can you give me an example?

Can you say more about that?

Additional areas to probe:

When it comes to overall personal development, is Generation Green very different from other youth development programs at John Muir High School, such as marching band, solar boat club and basketball where kids get to work together on something that's interesting/meaningful/fun for them under the mentorship of adults? If so, how?

What's the importance of Nature in the Generation Green program?

What role does Nature play in making Generation Green different from the solar boat club?

How does it feel to be out in Nature? What does Nature do for you?

How do you think your life is different now than it would have been without Generation Green?