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**Exploring the Impact of Pura Vida on Participant Environmental Behavior and
Engagement in Grand Teton National Park**

By

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Abstract

Pura Vida is a program that aims to address the National Park Service vision to enhance stewardship and engagement by connecting Latino youth to Grand Teton National Park (GTNP). This study explores the impact of Pura Vida on participant environmental behavior and engagement in GTNP. A review of the literature indicates that there is a gap in current research connecting environmental behavior and youth engagement within a sociocultural context. Qualitative and quantitative data was gathered to enhance understanding of how and why Pura Vida has had an impact on participants. The data suggest that participants in this group demonstrated positive environmental behavior and enhanced engagement in Grand Teton National Park as a result of their participation in Pura Vida. This research is intended to provide the three institutes associated with Pura Vida, a) Teton Science Schools b) GTNP and c) Grand Teton National Park Foundation, with a resource to assess programmatic outcomes and future evaluations. In addition, the study provides the NPS with recommendations for potential pathways for building the community of diverse groups within national parks.

This research is inspired by and dedicated to the participants of the Pura Vida program, the Teton Science Schools and Grand Teton National Park, and to my loving family and friends.

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Chapter 1

Introduction

“In our second century, we will fully represent our nation’s ethnically and culturally diverse communities. To achieve the promise of democracy, we will create and deliver activities, programs, and services that honor, examine, and interpret America’s complex heritage. By investing in the preservation, interpretation, and restoration of the parks and by extending the benefits of conservation to communities, the National Park Service will inspire a ‘more perfect union,’ offering renewed hope to each generation of Americans.”

- *The National Park Service: A Call To Action* (2011: 5)

In August of 2016, The National Park Service (NPS) will celebrate its 100th year of stewardship and engagement. In looking ahead to a second-century vision, the NPS aims to create a “more perfect union” by better representing the culturally diverse communities of the United States. This is a key element of the *Call to Action* (U.S. NPS, 2011) because there has been a lack of representation of cultural and ethnic groups in the NPS since its creation in 1916 by President Woodrow Wilson (U.S. Census Bureau, 2014). Public land was created for and is owned by the public. The NPS understands that if public land is to remain relevant to future generations, than the agency must create concrete initiatives to diversify the Service.

Many action programs have already been set in place to advance this NPS mission. More specifically, in 2010, Grand Teton National Park (GTNP) formed a partnership with the Teton Science Schools (TSS) to create a program, known as Pura Vida that would better engage Latino youth with GTNP. The population of Latinos living

in Jackson, WY, a GTNP gateway community, is almost one-third the total town population, yet GTNP visitor demographics do not reflect this distribution (U.S. Census Bureau, 2014).

Pura Vida, which receives its primary fiscal support from Grand Teton National Park Foundation, aims to “dissolve barriers between the Latino community and GTNP by offering extensive outdoor learning experiences, leadership training, and wilderness recreation. Service projects provide hands-on opportunities to improve the park and spark discussions about the importance of stewardship” (Grand Teton National Park Foundation, 2015). The weeklong program is free of charge, non-residential, and serves Latino/a middle school and high school youth. Activities include hiking, canoeing, community service, guest lectures, presentations from GTNP staff, and a family dinner and celebration. By providing youth with the opportunity to participate and develop leadership and communication skills, the program has the capacity to advance participant environmental stewardship. For the purpose of this study, positive environmental behavior is used to describe behavior that advances environmental stewardship based on a continuum that ranges from negatively impacting the environment to a more positive end of conserving the environment.

The interaction of people’s values, beliefs, attitudes, and knowledge within a sociocultural context results in environmental behaviors that directly or indirectly impact the natural world (National Audubon Society, 2013). Researchers such as Kollmuss and Agyeman (2002) have created a wide range of models in an attempt to categorize and explain these factors, yet it is difficult to incorporate all the elements that influence behavior. Stern (2000) suggests that organizations aiming to influence environmental

behavior among individuals should understand the social and cultural elements of the target population in order to create an effective program structure.

Pura Vida was designed to cultivate positive environmental behavior within a lens that honors Latino culture and advances concepts of place-based education. Latino youth participants are encouraged to take ownership of their learning, draw connections between their culture and nature, and apply leadership skills to take effective action. Since its creation in 2010, the program has seen an increase in interest, as noted in the increase of the number of participants from 19 in 2010 to 48 in 2014, and has served 86 individual participants. This program has the potential to create environmental leaders who understand the importance of connecting stewardship and culture.

Statement of Problem

There is an underrepresentation of diverse groups among the NPS workforce and visitors. Pura Vida was created to address this issue and to effectively engage the Latino population living in the gateway communities of Grand Teton National Park. The goal of this study is to provide a formal evaluation and documentation of the impact the program has had on participants.

Statement of Purpose

The purpose of my research is to understand how this place-based education program has had an impact on Latino youth in terms of their environmental behavior and engagement in the national park. My research will focus on the Latino population of a GTNP gateway community within a sociocultural context. Exploring the cultural values of Latinos will provide better understanding of *how* this group connects to the natural

world (Henderson, 2007). Understanding this connection is critical for interpreting data from my study.

I conducted an evaluation through the collection of both quantitative and qualitative data. This allowed me to have indirect and direct contact with participants to assess participant attitudes and behavior (Alkin, 2004). My study may serve as a resource for TSS and GTNP staff in discussing pathways for improving programmatic outcomes (2004).

Research Question

The objective of my Plan B research was to explore the following question: What impact has Pura Vida had on participants in terms of their environmental behavior and engagement in Grand Teton National Park?

Background and Rationale

I am invested in this research because I believe that engaging in nature provides a range of health and wellness benefits. I enjoy the opportunity to learn about my natural surroundings as a way to draw connections between people and ecological processes. In addition, I enjoy outdoor recreation because it allows me to challenge myself mentally and physically. My connection to nature is personal and has inspired me to work to conserve and protect open spaces. Every person has the right to connect with the natural world to foster personal growth and to enhance their own relationships with people and ecosystems.

Latinos commonly report family and the environment as core values. I am particularly fascinated with Latino culture because I also place high value on the relationship I have with my family and the natural world. In 2011, I worked as an

AmeriCorps field instructor for the Pura Vida program. This provided me with the opportunity to get to know Latino youth living in communities outside of GTNP and opened my eyes not only to the unique cultural practices of the population, but to the lack of diversity within the National Park Service. From my experience with Pura Vida, it was apparent that participants enjoyed spending time with one another and their family outdoors. I also became aware that prior to the program, many students had never visited GTNP, despite living just outside the park. It was through thoughtful discussion with participants that I was informed about some of the physical barriers, such as lack of transportation that prevented them from accessing the park. Understanding the relevance and necessity of Pura Vida made me sincerely invested in my participants and the program.

Study Limitations

There may be limitations to my study because it targets a young and culturally specific population. These youth may be anxious about the research process and formal reporting and documentation of the data, which could have influence on their responses. In addition, the majority of participants are native Spanish speakers and learned English as a second language, and thus there is potential for a language barrier. Participants are self-selected and had to have been able to receive postal mail. While the Latino population in this region is significant in proportion to the total population, it is still small in relative numbers. The participant pool in this study consisted of 6 alumni out of a total of 86 possible alumni participants. Due to the low response rate, this study is limited in scope and may have limited application. In addition, the landscape in the GTNP area is dominated by protected land because it is a part of Teton County, which is made up of

only 3% private and 97% public land (U.S. Census Bureau, 2014). This geographic characteristic could have influence on the environmental attitudes and behavior of the Latino population.

Key Terms and Definitions

There are several terms I will employ in this assessment of Pura Vida, in order to describe how the program has impacted participants:

Attitudes: Judgments that represent a person's evaluation of a particular subject (National Audubon Society, 2013).

Environmental behavior: "Types of behavior that change the availability of materials or energy from the environment or alter the structure and dynamics of ecosystems or the biosphere" (Steg & Vlek, 2009; 309).

Knowledge: "A justified true belief, or opinion combined with reason" (Hilpinen, 1970; 109).

Place-based education: "The process of using the local community and environment as a starting point to teach concepts... across curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education... enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens" (Sobel, 2010; 23).

Values: "Desirable, trans situational goals that serve as guiding principles in people's lives. They are points of reference in decision making" (Dietz, Kalof & Stern, 2002; 354).

Chapter 2

Literature Review

Introduction

My literature review explores the complexity of environmental behavior and youth engagement within a sociocultural context, and evaluates different sources of information to establish connections across the elements of the framework. The literature identifies key elements that have influence on behavior, and ways of engaging youth and Latinos in the outdoors to encourage positive environmental behavior. In addition, methods of qualitative and quantitative research are discussed because they are effective techniques for understanding human behavior and social phenomena (Creswell, 2013), which are two relevant aspects of the research conducted in this study. This chapter evaluates different sources of information to establish connections across the elements of the framework.

I used research databases, including Google Scholar, ERIC, and Academic Search Premier to find literature that connected three framework constructs: sociocultural context, environmental behavior, and engagement. I used a limited number of terms in my search to focus my study. When all three search terms were combined, there was no available literature on these constructs as they pertain to youth. Other researchers could find more literature on these constructs, as research in this area spans across a wide range of academic fields. Table 1 shows the number of articles for peer reviewed research in these areas. The last row demonstrates the gap that is in the literature. The following

review covers each construct individually in relation to the research question to address this gap in the literature.

Table 1

Preliminary Search of the Literature for the Elements of the Theoretical Framework

Construct	Google Scholar	ERIC database	Academic Search Premier
Sociocultural Context	40,100 results	685 results	2,583 results
Environmental Behavior	86	0	34
Engagement	46	21	1
Childhood Engagement	0	0	1
Middle School Engagement	0	0	0
High School Engagement	0	0	0
Adolescent Engagement	0	0	0
Young Adult Engagement	0	0	0
Youth Engagement	0	1	0

Sociocultural Context

The sociocultural context of this study refers to the physical, social, and cultural environment where someone lives. These elements influence how people identify with and understand their environment (Van Enk et al., 2005). Based on personal knowledge, coupled with cultural background and social interactions, they construct borders to make

sense of the world (Tzou & Bell, 2012). Tzou and Bell (2012) define these *borders* as, “distinctions whose main effect is to demarcate one group from another – to create categories” (p. 266).

These borders reflect individual and societal views that classify experiences. People can transition across borders when knowledge is relevant to their personal or cultural world (Aikenhead, 2001). The way in which a person perceives their social and cultural position in society influences behavior, as indicated by Benson (2003): “The nature of my identity - both personal in the sense of how I am to and for myself, and the social in the sense of how I am to and for others, is directly connected to the sorts of action I am likely or unlikely to perform” (p. 70). Sociocultural context is key for understanding how youth connect to nature, and for identifying entry points for empowering youth to demonstrate positive environmental behavior (Gruenewald & Smith, 2014).

Environmental Behavior

A combination of factors, such as values, efficacy, sense of belonging, and exposure influence environmental behavior (Duerden, 2010). For the purpose of my research, the terms “environmental” or “environment” are used in reference to the physical or natural world. According to Stern (2000), environmentally significant behavior, referred to here as *environmental behavior*, is behavior that either has a direct or indirect impact on the environment.

There are a number of factors that influence people to model *positive* environmental behavior, which is when a person acts in a way to conserve or be a steward of the environment. This behavior can be manifested in a range of ways. Monroe

(2003) classified these behaviors into four categories: (a) environmental activism, (b) political behavior, (c) consumer behavior, and (d) ecosystem behavior. Monroe's categories show that there is an array of opportunity for individuals to demonstrate positive environmental behavior.

In considering an individual's actions, it has been assumed that if a person possesses particular knowledge then they will act in a way with regard to that information (Frick, Kaiser & Wilson, 2004). Environmental advocacy groups bring attention to environmental challenges in hopes that if people know about an issue, they will be inspired to resolve that issue. However, this linear model of behavior is insufficient because people's actions cannot be predicted simply by their informational knowledge (Duerden, 2010). There can be social, emotional, and physical factors that lead people to act in a way that contradicts what they know or value.

Rather than assuming a linear model, it is critical to consider a web of factors having influence on environmental behavior (Kollmuss & Agyeman, 2002). Taking a closer look at these elements reveals their significance and highlights their place in the larger puzzle of understanding behavior.

Values, Attitudes, and Beliefs. Values are considered a moral compass or guide for morally appropriate behavior, which can influence beliefs and attitudes based on experience and understanding (Schultz, Gouveia, Cameron, Tankha, & Franek, 2005). While these elements can guide behavior, there may be confounding variables that either permit or confine an individual from acting a particular way (Blake, 1999). For example, a person may want to help the environment by volunteering for a stewardship project, but may be unable to participate due to lack of transportation or economic restraints. Thus it

is important to consider other elements, such as efficacy, when analyzing human behavior. Efficacy is the ability to produce a result or change, and it can be manifested by self-efficacy or collective-efficacy (Taberero & Hernandez, 2011).

Efficacy - Self-efficacy. The belief that a person is capable of doing something on their own is known as “self-efficacy,” and the belief that their action will actually make a difference is called “outcome expectancy” (Bandura, 1994). Knowing that they can make a difference, people are often motivated to practice positive environmental behavior (Zimmerman, 2000). However, a person cannot behave in a certain way if they do not have the skills, knowledge, or resources to do so. Osbaldiston & Sheldon (2003) posit that people engage in a behavior when they feel they have the power to create a change. In other words, individuals need to feel that they have the independent power or agency to make a difference in helping the environment. Competence, autonomy, and relevance of a task satisfy individuals’ needs, which can in turn have lasting impact on behavior (Osbaldiston & Sheldon, 2003).

The origins of self-efficacy can also stem from family interactions. The more opportunities a parent gives a child to develop cognitively and physically, the greater the likelihood that the child will act independently (Bandura, 1994). Interaction with family is often the first chance for a child to receive affirmation for their actions. As youth grow older, peers take on a similar role. Within an educational setting, it is critical to create learning environments where youth are supported by their peers and feel capable of achieving understanding (Smith, 2013).

Environmental issues however are often framed in a way that discourage youth from achieving this understanding or finding a resolution because the issues are too

overwhelming to grasp, resulting in feelings of despair (Tzou & Bell, 2012). By framing issues in a way that cultivates self-efficacy, whether it be around a positive or negative issue, individuals will be more likely to attempt to resolve it.

Efficacy - Collective-efficacy. Just as important as self-efficacy is for inspiring a person to act, so too is the cooperation of a group, or collective-efficacy (Bandura, 2000). Every person in a group brings a unique personality, skillset, and array of experiences to share, generating a distinct group dynamic. Outdoor experiences require individuals to work as a team, which, when done well, can strengthen a group's sense of collective-efficacy (Sibthorp & Jostad, 2014). These interpersonal social interactions help to provide a support system, and generate a sense of belonging (D'Amato & Krasny, 2011). Collective-efficacy and a sense of belonging to a group can be a motivating force behind people's actions (Cialdini, 2003).

Sense of belonging. When considering positive environmental behavior, people will often behave in a way that reflects the behavior of the group they are a part of, as it reinforces a person's sense of belonging (Bandura, 2000). When framing an environmental issue then, it is important to recognize the social and cultural elements influencing a person's actions.

Jose Gonzalez (2015), founder of Latino Outdoors, found that a sense of belonging inspires engagement. Latinos place high value on their relationships with both nature and people (Jones & Nichols, 2013). Latinos enjoy the opportunity to spend time outdoors with relatives because of their strong family orientation and deep-rooted cultural connection to the land (Clark, Rodriguez, & Alamillo, 2015). Valuing the cultural connection that Latino youth have with the natural world provides an entry point for

engagement. Youth want to feel that they belong. A sense of belonging validates an individual's place in nature, as stated by Jose Gonzalez "when kids feel like they belong, they step up" (Gonzalez, Guest Lecture, 2015).

Barry Lopez (1990), a well-known American author who writes about nature, makes reference to this idea of *belonging* and describes it as "querencia," which means a place where a person feels safe and confident in who they are. Latino youth have the potential to achieve "querencia" if they are given the chance to identify ways to connect to and immerse themselves within a place or group. When people are emotionally and physically tied to where they live, they become active stewards (Ault, 2008). As mentioned before, this connection or engagement can cultivate knowledge that is essential for resolving environmental issues. In turn, an individual's ability to achieve "querencia," along with exposure to the natural world, can enhance their potential to demonstrate positive environmental behavior (Smith & Sobel, 2010).

Exposure. Simple, physical exposure to the natural world is a fundamental element that influences environmental behavior (Louv, 2005). Hartig et al. (2011) has found that exposure to nature can enhance intellectual, social, physical, and emotional development, and can have impact on an individual's behavior well into the future. The notion that exposure to nature provides benefits is not new, as Hartig et al. (2011) states: "... the idea that the experience of nature is beneficial for health has deep roots in diverse intellectual and professional traditions" (p. 133).

Childhood and adolescence are two critical development stages for youth exposure to the environment (Charles, 2007). During these years of growth, youth experience an increase in mental capacity, and are able to comprehend complicated

ecosystem processes (Dahl, 2004). Outdoor experiences not only help to formulate understandings of natural elements, but can also enhance a child’s potential to model positive environmental behavior, as supported by Wells & Lekies (2006): “... participation with ‘wild nature’ in childhood... has a significant, positive association with both adult environmental attitudes and behavior” (p. 13). Time spent moving outside also nurtures physical and emotional strength, and reinforces self-efficacy.

Teenagers often prioritize social experiences over those in nature because they care about peers’ opinions (National Audubon Society, 2013). This does not mean that adolescents do not care about the environment. Rather, this hierarchy of values denotes the potential for impact if youth can experience the natural world alongside their peers (Wals, Van Der Hoeven, & Blanken, 2009).

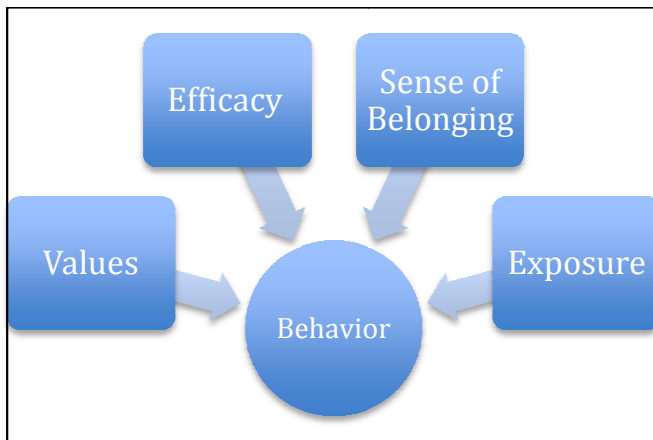


Figure 1. *Elements Influencing Behavior*

Spending time in nature can create a sense of interdependence within a group. This structure can in turn encourage cooperative conduct and be a driving force behind behavior, which feeds into engagement (Sibthorp & Jostad, 2014). Figure 1 provides a visual of those elements that have influence on behavior.

Engagement

Engagement is establishing a sense of investment in or connection to place. It is the act of participating or becoming involved in an activity. Effective methods for engagement, such as place-based education, take into consideration the physical, social, and cultural elements of a particular environment (Marouli, 2002). Youth need to be provided with an educational structure that guides and challenges their thought processes and behavior (Frisk & Larson, 2011). Place-based education aims to address this need by engaging youth in real world problems.

Place-Based Education. Place-based education as pedagogy has the capacity to effectively engage students in learning and tangible experiences (Smith & Sobel, 2010).

According to Smith and Sobel (2010):

Place-based education is the process of using the local community and environment as a starting point to teach concepts... across curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education... enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. (p. 23)

Place-based education enhances knowledge and skillsets that enable youth to function and contribute to community and society as a whole (Woodhouse & Knapp, 2000). The pedagogy of place-based education can be considered environmental education because it aims to increase awareness of environmental issues, enhance knowledge of those issues, and provide the skills and active participatory experience to resolve issues (Tbilisi Declaration, 1977). Content in place-based education is unique to

place. Students are encouraged to build connections across concepts at the local level in order to also make connections on a global scale (Woodhouse & Knapp, 2000). Through place-based education, learning becomes relevant and tangible, and gives youth a reason to invest themselves in their communities and the environment (McInerney, Smyth, & Down, 2011).

Place-based education not only helps to enhance knowledge but also encourages youth to formulate their own attitudes, values, and beliefs about environmental challenges (Gruenewald & Smith, 2014). Through this framework, students become invested in their learning and in turn can take ownership to resolve issues, increasing a sense of self-efficacy. This investment also cultivates a sense of belonging, which, as mentioned before, is another important factor influencing behavior. When considering place-based education programs like Pura Vida, it is important to note that participants' potential to effectively engage in certain activities is also guided by relationships with peers and instructors.

Building trust. The purpose of environmental education is to engage students in learning about the natural world. Building positive relationships between instructors, peers, and community are critical factors influencing an individual's potential for engagement (Arnold, Cohen & Warner, 2009). According to Clark, Rodriguez, & Alamillo (2015), trust is a critical element within relationships that has significant influence on effective engagement. Students need to feel like they are a part of a supportive environment where their voice is heard and respected in order to participate in something they have never done before or feel uncomfortable with. Recognizing this social factor along with how people identify themselves in society highlights the

significance for understanding individuals' experiences within a sociocultural context (Senecah, 2004).

Lack of engagement. Currently, there is a lack of engagement of diverse groups in the NPS, not because the environment is not valued by those groups, but because of failure of identifying entry points for inclusion. The NPS sees very little variation in demographics among park visitors and staff, the majority of which are Caucasian. An outside observer could make the assumption that non-Caucasians do not visit national parks, thus creating a border and misconception about reality. Part of the mission of NPS however, is to break down these borders and engage youth in experiences that enable them to realize their potential to identify with national parks (Clark, Rodriguez, & Alamillo, 2015).

It is critical to recognize *how* individuals identify with the environment in order to effectively engage communities on public land. In popular media, such as adventure magazines and websites, underrepresented minorities are rarely depicted as the front-runners of the environmental movement or outdoor pursuits. Instead, environmentalists are often depicted as liberal, and “green,” and often Caucasian (Garcia, 2007). There is a need to highlight and recognize that other cultural groups, particularly Latinos, *are* also environmentalists and stewards of the land (“Conservation in the West,” 2015).

According to polls from the Colorado College “State of the Rockies Project” (2015), conservation matters to Latinos. Research from the Natural Resource Defense Council indicates that 87% of Latinos believe that protecting natural resources is important (“Hispanic Voter Perspectives,” 2014). Another poll by the Sierra Club (2014) found that 91% of Latinos believe that protecting natural resources protects the health of

families and communities. Latinos have deeply rooted connections to the land and advocate for its protection (“Conservation in the West,” 2015).

The NPS is working to effectively create a sense of belonging in and engagement of Latinos and other diverse groups. In *A Call to Action* (2011), the NPS aims to connect people to public land, improve education initiatives, and enrich the workforce. “Parks for People” (2011) is an example of one initiative created with the intention of eliminating barriers to accessibility and engagement:

The NPS will enhance the connection of densely populated, diverse communities to parks, greenways, trails, and waterways to improve close-to-home recreation and natural resources conservation. We will achieve this through a proactive Rivers, Trails, and Conservation Assistance Program that mobilizes citizens in support of improved access to outdoor areas in at least 50 of the communities nationwide with the least access to parks.

(p. 10)

The purpose of the *Call to Action* (2011) is to provide an entry point for national parks to create programs that enhance sense of belonging among the diverse public.

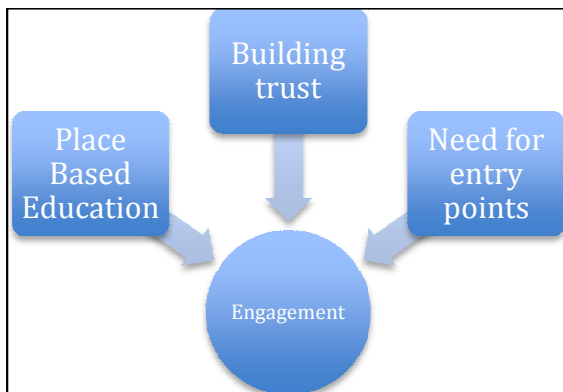


Figure 2. *Elements Inspiring Engagement*

As indicated by the polls from Colorado College (2015), Latinos view protection of natural resources as a fundamental value. Engaging this population and diverse groups is critical for the protection of public lands for generations to come. Figure 2 identifies the elements that inspire engagement.

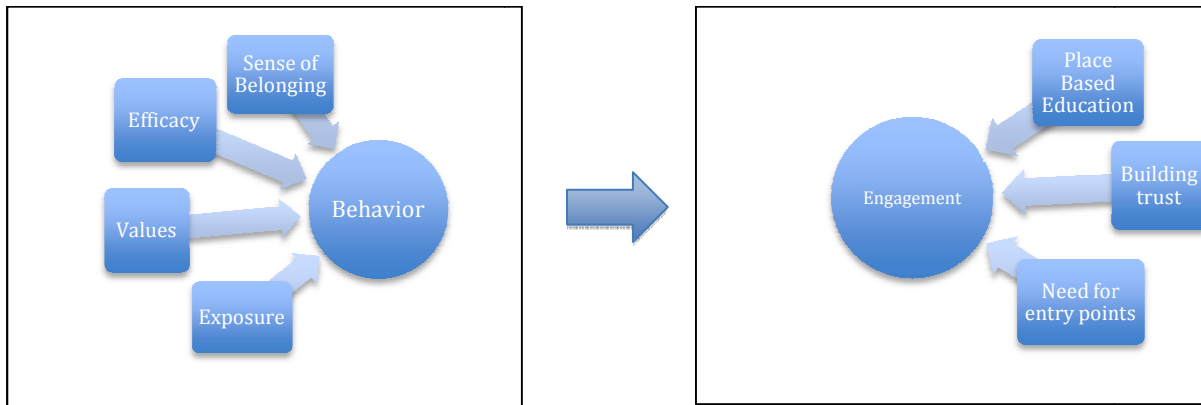


Figure 3. *Elements of Behavior feed Engagement*

This literature identified critical elements – such as values, efficacy, sense of belonging, and exposure – that influence environmental behavior. In addition it reviewed place-based education, trust, and entry points as essential components that can inspire engagement. When elements of behavior are met, individuals can meaningfully engage in activities. Figure 3 highlights the relationship of these components.

This literature has explored avenues for understanding behavior and how people, and more specifically Latinos, relate to one another and the environment. The connection between these elements cannot be understood without the support of conducted research. The next section of this chapter identifies research methods appropriate for exploring human behavior and experiences (Creswell, 2013).

Qualitative and Quantitative Research

Qualitative methods. Qualitative research is an approach used to understand human behavior through the study of personal experiences. As stated by Hancock & Algozzine (2006) in *Strategies of Qualitative Inquiry*, this research is, "... a situated activity that locates the observer in the world. It consists of a set of interpretive material practices that make the world visible... They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to self" (p. 4). This approach is based upon a single bounded system and provides focused analysis.

Interviews. Interviews are a method used to gather qualitative research data. This approach helps to expose new knowledge, provide depth to the study, and empower respondents to tell their personal story as it relates to the research topic (Gubrium & Holstein, 2002). When conducting interviews, it is the responsibility of the interviewer to remain unbiased so as not to influence respondents' answers. "The collection process can be arduous, but the objective typically is to tap into information without unduly disturbing and, therefore, biasing or contaminating the respondents' vessel of answers" (Gubrium & Holstein, 2002, p. 15). Interviewers should aim to create an environment where interviewees feel they can respond honestly, as Seale et al. (2004) mention; "... if the interviewee feels comfortable, they will find it easier to talk to you" (p. 19). Creating this environment is particularly important during face-to-face interviews.

These face-to-face or personal interviews are an effective technique for recording both verbal and non-verbal data (Knox, 2009). In gathering data, interview questions can be semi-structured to allow for respondents to share stories related to the research that are

important to them. Knox (2009) describes semi-structured interviews as: "... a foundation on which the interview is build but one that allows creativity and flexibility to ensure the each participant's story is fully uncovered" (p. 567).

Quantitative methods: Surveys. Surveys are used to gain additional insight about individual experiences. In comparison to qualitative research, quantitative methods compare separate entities as opposed to a system of entities. As supported by Denzin and Lincoln (2008), "Quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes" (p. 14). Results from the two research method datasets can be compared to verify data across sources, and increase credibility of the research analysis.

Mixed methods. Mixed-methods research is an approach used to connect both qualitative and quantitative research (Johnson & Onwuegbuzie, 2004). Punch (2013) notes that it allows for researchers to, "combine the strengths of qualitative research with the strengths of quantitative research while compensating at the same time for the weaknesses of each method" (p. 303). This method can provide a more complete understanding of a subject (Creswell, 2013).

Conclusion

In my work, I intend to explore the current gap in literature connecting understandings of environmental behavior and youth engagement within a sociocultural context through the use of surveys and interviews. Exploring this gap is critical for understanding how Pura Vida uses elements of behavior and engagement to advance participant environmental stewardship.

Chapter 3

Methodology

My study explores how participants' environmental behavior and engagement in the outdoors may have changed due to participation in Pura Vida. Quantitative and qualitative data were gathered to assess participant experiences. Qualitative data can be seen as a balancing component to quantitative data: "... it is equipped to explore the emotional and interpretive side of environmental experience that research has otherwise avoided, but which forms a necessary complement to a full understanding of not only what people do, but why" (Chawla, 2006; 361).

I used a combination of these two sources to strengthen and verify my data, and then used elements of grounded theory – a systematic approach for collecting, coding and analyzing quantitative and qualitative data – to analyze my data and match it to my theoretical framework (Merriam, 2009). As supported by Charmaz, et al. (2014), "grounded theory begins with inductive data, invokes iterative strategies of going back and forth between data and analysis, uses comparative methods, and keeps you interacting and involved with your data and emerging analysis" (p. 1). Using elements of grounded theory, I was able to identify emergent themes, which helped to direct my data analysis (Glaser & Strauss, 2009).

Population and Participants

To comply with requirements from the Institutional Review Board, Teton Science Schools (TSS) staff conducted the initial step of identifying Pura Vida program alumni using archival data. Youth in the population pool range in age from 12 to 25. Ninety-nine

percent of those 86 participants are of Latino descent, and 47% of those are male and 53% are female. The participants speak English or are bilingual in English and Spanish, and live in communities just outside of GTNP, such as Jackson, Wilson, and Kelly.

Participant Selection

Once Pura Vida participant information was gathered, Pura Vida alumni were sent an invitation, provided in both English and Spanish, to participate in the research. The invitation was sent through the mail so as not to exclude individuals who may not have access to e-mail, and to eliminate any communication barriers in the initial stages of the selection process. In addition, participants received a consent form for potential participants, who were 18 or older, or an assent and parental consent form for those who were 17 or younger. The invitation letter (See Appendix E) explained the purpose of the research and the reason that the individual participant had been selected. The consent and assent forms gave additional information about the research, participant responsibilities, and the confidentiality of all recorded data.

Participants were provided with the option of participating in the research in one or two ways, (a) by completing a survey or (b) by completing a survey and participating in an interview. A self-addressed stamped envelope was provided for participants to return the forms. Participants were given one month to respond before staff from the Grand Teton National Park Foundation made additional follow-up phone calls and sent a reminder e-mail.

Once consent and/or assent forms were received, I contacted potential participants by phone to confirm their agreement to participate. Ten of 86 individuals responded and agreed to be a part of the research. Of those 10 individuals, all agreed to complete the

survey and five agreed to complete the survey *and* interview. Eight of the ten survey respondents were female, and four of the five respondents who agreed to participate in the survey *and* interview were female. As seen in Table 2, this ratio of females to males does not reflect the alumni pool, which was made up of 46 females and 40 males. All respondents were sent a Google survey form to complete, and six of those ten filled out the survey. Those individuals who agreed to be interviewed were contacted by phone to schedule an interview.

Table 2

Participant Response Rate and Demographics

Population Pool	N	Female to Male ratio
Alumni	86	46:40
Agreed to participate in research	10	8:10
Participated in survey	6	Could not be identified
Participated in interview	5	4:1

All of the interview participants were all over the age of 18 and in college. The range of experience these interviewees had with Pura Vida varied: two individuals had more than four years experience, two had one to three years, and one who had participated one year. Interviewees were assigned pseudonyms so as to keep their identities anonymous.

Data Collection - Instruments

Survey. The survey used (See Appendix F) was adopted from the National Oceanographic and Atmospheric Agency (NOAA) Bay Watershed Education and

Training (B-WET) database (2007). The survey was created to be systematic and strategic with the purpose of capturing evaluation data to inform program decision-making. While it was intended to be used for California B-WET education programs, it was also created with as a resource for other organizations to evaluate environment-based education programs (*Education Project Evaluation*, 2007). I received permission from a NOAA California B-Wet Program staff member, Seaberry Nachbar, to use the survey for this research project.

The survey was comprised of a total of 50 close-ended questions. Subscales within the survey were created by authors of the NOAA, *Education Project Evaluation* (2007) and were based on published sources focused on measuring the impact of environmental programs.

The original authors of the survey created the questions so they could be modified according to the geographical features characterizing the program area. For example, (Q:3), under *Identity and Natural Environment Questions*, states: “I am responsible for protecting [forests, rivers, or streams].” This was modified from: “I am responsible for protecting [ocean, coast, and sloughs].” This modification was made because “forests, rivers, and streams” are dominant geographical features in GTNP and the surrounding area.

Each survey subscale is abbreviated with “S” and with a number indicating the sequence it occurred in the survey. For example, *Activity in Nature*, was the first subscale listed in the survey, so it is listed as “(S:1)”. Questions under each subscale are abbreviated with “Q” and given a number.

Table 3

Example Survey Questions and Statements

Environmental Attitude Subscale	Example Question or Statement
(S:1) Activity in Nature	(Q:1) In the past 12 months, how often have you gone outside in nature?
(S:2) Nature Information – Consumption	(Q:1) In the past month, how often have you read a book about nature?
(S:3) Activity in Nature Intentions	(Q:4) How often do you plan to go camping in the future?
(S:4) Nature Info-Consumption Intentions	(Q:3) How often you plan to volunteer to help nature with your school, church, or community club in the future?
(S:5) Attitudes	(Q:1) Spending time in nature is important to me.
(S:6) Environmental Attitudes and Knowledge Scale	(Q:4) To save water, I would be willing to turn off the water while I wash my hands.
(S:7) Identity and Natural Environment Questions	(Q:5) I am responsible for protecting forest, rivers, or streams.
(S:8) Modified New Ecological Paradigm Scale for Children	(Q:4) Plants and animals have as much a right as humans to live.

Participants were able to complete the survey online, and once they submitted their responses, they were assigned a number through Google Forms and their data populated into an excel spreadsheet. I was able to identify trends by calculating the mean of responses for the questions under each survey subscale. I then calculated an adjusted mean by dividing the mean of responses by the total number of points per question. Numbers closer to zero could indicate a negative environmental response, while numbers closer to one could demonstrate a positive environmental response.

Interviews. The interview questions were adopted from doctoral research conducted by Donna Jean Satterlee. She used interview questions to explore and gain deeper understanding about participant experiences in the Shore People Advancing Readiness for Knowledge (SPARK) program (Satterlee, 2010). The purpose of her study was to explore the correlation between participant involvement in SPARK and participant environmental attitudes and behavior.

The Pura Vida program is similar to SPARK in that it is an environmental education program that aims to have an impact on participant environmental behavior. The decision was made to use Satterlee's (2010) research questions because of the overlapping themes and goals between SPARK and Pura Vida. Permission to use and adopt the questions was obtained from Donna Satterlee. The interview questions were abbreviated as "IQ" with a number indicating the sequence order. The questions below are a shortened version of those 10 questions used in the interviews (See Appendix G).

Questions:

1. (IQ:1) How do you experience the environment?
2. (IQ:2) Are you worried or concerned about change in the environment?

3. (IQ:3) Would you be interested in participating in a nature-based program?
4. (IQ:4) What would you hope to learn?
5. (IQ:5) What else would you like to tell me about your environmental experiences?
6. (IQ:6) Can you tell me about some outdoor experiences that you had during your middle school or high school years?
7. (IQ:7) Where are your favorite outdoor places? How often do you go there? What do you do when you are there?
8. (IQ:8) Have you done anything differently as a result of your Pura Vida experiences?
9. (IQ:9) Have you experienced the loss of a natural area that was meaningful to you? Where? What changed as a result of that experience?
10. (IQ:10) What would you change or add to the Pura Vida program? Is there anything you'd like to incorporate for your family or friends?

These series of questions were semi-structured and open-ended to allow for participants to speak about their personal experiences and provide additional detail about subject areas that were relevant or important to them.

In-person interviews were conducted after respondents replied to the surveys. I used a voice memo recording application to capture precise language from interviewees and took notes in a journal to avoid the potential for misinterpretation or bias. Once an interviewee responded to all the interview questions, I stopped the recording and saved his/her file. After interviews were completed, I transcribed the recordings verbatim.

Data Analysis

Surveys. Survey subscales were placed into one or two categories: *engagement* and *environmental behavior*. The decision on how to categorize each subscale was based upon the language of the questions listed under that subscale. (S:1, Q:1) asks, "In the past

twelve months, how often have you gone outside in nature?” This question solicits information about participants’ level of participation, or engagement, in nature, and thus it was assigned to the category of *engagement*. (S:5, Q:5) asks participants to rate their level of agreement with, “Nature makes me happy.” This question pertains to participant’s emotions, or *environmental behavior*. Table 4 indicates the category or categories of each subscale.

Table 4

Categorized Environmental Attitude Subscale

Environmental Attitudes Subscale	Category	
	Environmental Behavior	Engagement
(S:1) Activity in Nature		X
(S:2) Nature Information – Consumption	X	
(S:3) Activity in Nature Intentions		X
(S:4) Nature Info-Consumption Intentions	X	
(S:5) Attitudes	X	
(S:6) Environmental Attitudes and Knowledge	X	
(S:7) Identity and Natural Environment Questions		X
(S:8) Modified NEP Scale for Children	X	

The responses from the surveys were grouped by question and compared using a Likert scale. This scale allowed me to evaluate the level of agreement or disagreement.

Interviews. Similar to the survey subscales, I grouped the interview questions into two categories, *engagement* and *environmental behavior*, to match the qualitative data with the quantitative data (Merriam, 2009). For example, (S:1, Q:1), “In the past

twelve months, how often have you gone outside in nature?” and (IQ:1), “How do you experience the environment?” were both placed into the category of *engagement* because they both relate to how individuals participate or *engage* in the outdoors. Table 6 shows the alignment with the interview questions.

Table 5

Categorized Interview Questions

Question	Category	
	Environmental Behavior	Engagement
(IQ:1) How do you experience the environment?		X
(IQ:2) Are you worried or concerned about change in the environment?	X	
(IQ:3) Would you be interested in participating in a nature-based program?		X
(IQ:4) What would you hope to learn?	X	X
(IQ:5) What else would you like to tell me about your environmental experiences?	X	X
(IQ:6) Please tell me about some outdoor experiences that you had during your middle school or high school years?		X
(IQ:7) Where are you favorite outdoor places? How often do you go there? What do you do when you are there?		X
(IQ:8) Have you done anything differently as a result of your Pura Vida experiences?	X	
(IQ:9) Have you experience the loss of a natural area that was meaningful to you?	X	
(IQ:10) What would you change or add to the Pura Vida program? Is there anything you'd like to incorporate for your family or friends?	X	X

Correlation between interview and survey questions. The interview questions were chosen with the intention to provide supplemental information to the survey questions and/or to provide additional evidence about participant experiences that were not addressed in the survey. Once both qualitative and quantitative data were gathered and examined, I was able to draw correlations between the interview questions and survey subscale questions. Upon examination, all of the interview questions correlated with at least one or more survey question from the same category of *environmental behavior* or *engagement*. Some interview questions correlated directly with only one other subscale topic, while others correlated with one or more subscale topic, as seen in Table 6. Establishing these correlations allowed for me to sort data and compare the qualitative and quantitative results.

Table 6

Correlations Between Interview and Survey Questions

Interview Question	Survey Subscale Topic
(IQ:1) How do you experience Nature	(S:1) Activity in Nature (S:5) Attitudes (S:7) Identity and Natural Environment Questions
(IQ:2) Are you worried or concerned about the environment?	(S:2) Nature Information-Consumption
(IQ:3) Would you be interested in participating in a nature-based program in the future?	(S:4) Nature Info-Consumption Intentions
(IQ:4) What would you hope to learn?	(S:5) Attitudes (S:8) Modified NEP Scale for Children
(IQ:5) What else would you like to tell me about your environmental experiences	(S:3) Activity in Nature Intentions
(IQ:6) Can you tell me about some outdoor experiences that you had during your middle school and high school years?	(S:8) Modified NEP Scale for Children

Table 6, cont.

Interview Question	Survey Subscale Topic
(IQ:7) Where are your favorite outdoor places? How often do you go there? What do you do when you are there?	(S:8) Modified NEP Scale for Children (S:1) Nature Info-Consumption Intentions
(IQ:8) Have you done anything differently as a result of your Pura Vida experiences?	(S:1) Activity in Nature (S:4) Nature Info-Consumption Intentions (S:8) Modified NEP Scale for Children
(IQ:9) Have you experienced the loss of a natural area that was meaningful to you? Where? What changed as a result of that experience?	(S:7) Identity and Natural Environment Questions (S:8) Modified NEP Scale for Children
(IQ:10) What would you change or add to the Pura Vida program? Is there anything you'd like to incorporate for your family or friends?	(S:4) Nature Info-Consumption Intentions (S:8) Modified NEP Scale for Children

Interviews were used as methodology to identify themes that emerged during the collection of qualitative data. This approach helped me to make discoveries about common and unique experiences that occurred across the participant pool. In addition, this method of analysis guided the direction of the discussion and synthesis of my results.

Chapter 4

Results and Discussion

Results of data collection and analysis focus on the qualitative results and are backed up as appropriate with quantitative results. This data is presented using the emergent themes: (a) enhanced environmental knowledge and leadership skills, (b) environmental concern, (c) economic incentive, (d) love for the outdoors, and (e) interest in other environmental programs. This presentation of results will begin with a summary of the survey data followed by the qualitative results and supporting quantitative data. The discussion will focus on the benefits and challenges stemming from Pura Vida and areas for future research.

Survey Results

The quantitative data from the surveys indicated that the participants exhibited positive environmental responses. The adjusted means suggest that individuals' participation has led to an increase in engagement in the outdoors and enhanced positive environmental behavior. All but one survey subscale topic indicated a mean that correlated with a positive environmental response. (S:2) *Nature Info-Consumption* was the one subscale that did not show a positive correlation and produced an adjusted mean of 50%. An example question under this topic was, "In the past month, how often have you read a book about nature?" (S:2, Q:1). Participants' average response was "once" as opposed to "never," "weekly," or "daily."

Conversely, the means of the remaining seven subscales indicated a positive environmental response. For example, the adjusted mean of (S:6) *Environmental*

Attitudes and Knowledge Scale questions was 90%. An example statement from this section was, “To save water, I would be willing to use less water when I bathe” (S:6, Q:1). All six participants responded “true” to this statement. Table 7 is a summary of the survey data. Recall that the adjusted means were calculated to be able to compare data across subscales.

Table 7

Mean of Environmental Attitude Survey Subscale Topics

Survey Subscale Topic	Mean	Total Points per Question	Adjusted Mean (%)	Total Number of Questions
(S:1) Activity in Nature	3.23	4	80	5
(S:2) Nature Info-consumption	2.00	4	50	5
(S:3) Activity in Nature Intentions	2.26	3	75	7
(S:4) Nature Info-Consumption Intentions	2.30	3	76	6
(S:5) Attitudes	4.26	5	85	7
(S:6) Environmental Attitudes and Knowledge Scale	1.8	2	90	9
(S:7) Identity and Natural Environment Questions	4.5	6	75	5
(S:8) Modified NEP Scale for Children	4	5	80	6

Emergent Themes

The program has served to benefit participants, but there are still remaining challenges for participants in engaging in certain activities and behavior. The emergent

themes were placed into one or two groups, *benefit* and/or *challenge*, indicating the outcome effect.

Table 8

Emergent Themes and Outcomes

Emergent Theme	Outcome
Enhanced Environmental Knowledge and Leadership Skills	Benefit
Environmental Concern	Benefit
Economic Incentive	Benefit
Love for the Outdoors	Benefit and Challenge
Interest in Environmental Programs	Benefit and Challenge

Benefits

Enhanced Environmental Knowledge and Leadership Skills. One of the goals of Pura Vida is to *enhance environmental knowledge and leadership skills*. Pura Vida allows youth to get to know different areas in the park while facilitating activities that give kids the chance to practice newly acquired skillsets. Recall that Hartig et al. (2011) identified that exposure and knowledge about the natural world can influence behavior, as Yolanda mentioned, “Pura Vida exposed me to all the great things GTNP has to offer. I started getting involved in other similar programs, which also helped expose me to the environment but also gave me leadership skills.” She also mentioned that Pura Vida enhanced her communication skills when she participated in activities that required teamwork. Other participants echoed similar responses about how Pura Vida exposed them to where to go and what to do in the park.

Participants also enjoyed and benefited from the opportunities to lead, as when Adelina said, “Teaching high schoolers to be leaders and to show middle schoolers around GTNP and to kind of be their guides. This stood out to me because it gave me a skill, a leadership skill that I could use in the future.” Similarly Bella commented, “Staying and camping and actually learning to stay there and how to take responsibility and take care, I think that’s really helpful, and it makes you be like oh mom, I wanna go there. And like tell your parents to do it.” This feeling of having to take responsibility was supported in the surveys as indicated in Figure 4. This is congruent with research from Corral-Verdugo (2002), which states that when youth feel competent, they may be more willing to engage in a behavior or activity.

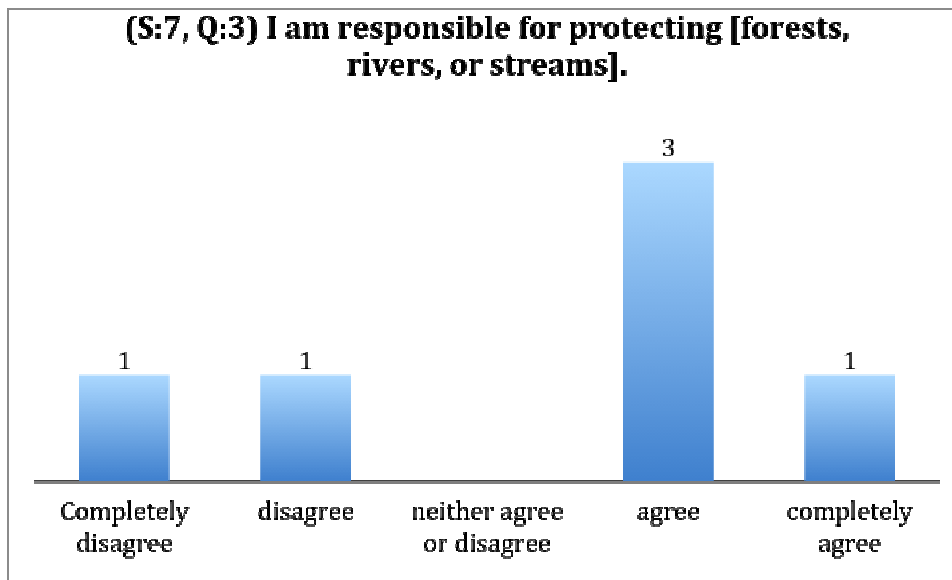


Figure 4. Number of Participant Responses: Identity and Natural Environment Questions, Question #3

Environmental concern. Participants are worried about the state of the environment. They commented on climate change, littering, and pollution. This theme, *environmental concern*, emerged from responses like the following: “I am worried

because we don't see that much snow. Summers are getting hotter. I don't know what's going to happen in the future... I want to have kids who are able to experience everything I experience," said Bella. Participants were genuinely concerned about how others have treated the environment. Yolanda expressed this feeling when she stated, "I am concerned about the environment because people don't realize how much harm littering can do... like throwing a cup outside their backyard," and then she later said, "I would be open-minded to see [learn] what's going on in the environment, like pollution." Some even mentioned that Pura Vida taught them about the importance of picking up trash and respecting outdoor trails and spaces.

These concerns and attitudes were also reflected in the survey questions. All six respondents agreed with the statement, "I have asked my family to recycle some of the things we use" (S:6, Q:6). And all participants agreed to the statement, "To save water, I would be willing to use less water when I bathe" (ST:6, Q:1). Participants also indicated that they plan to volunteer more often in the future to help the environment as indicated in Figure 5. Literature from Schultz et al. (2005) highlights this connection between attitudes of concern and experience.

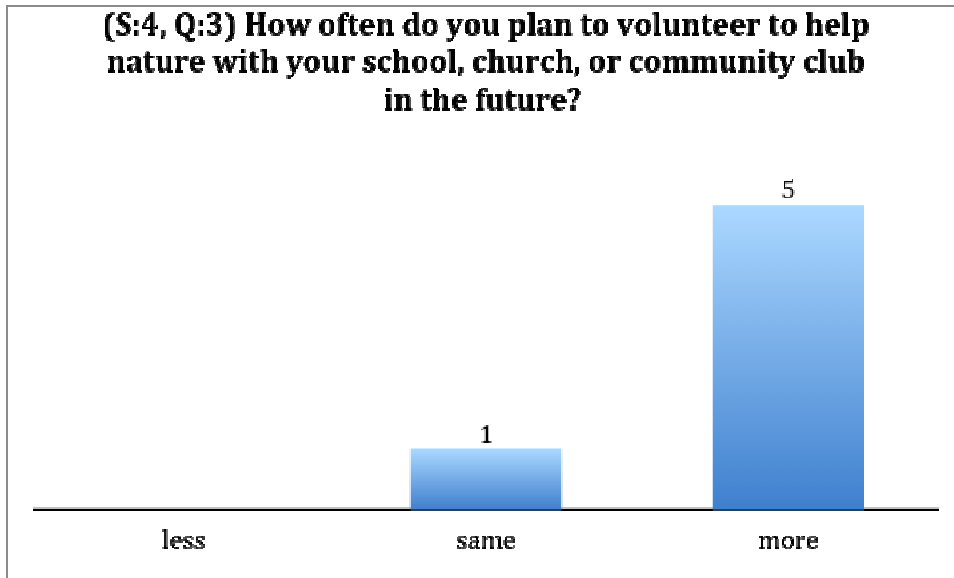


Figure 5. *Number of Participant Responses: Nature Info-Consumption Intentions, Question #3*

Economic Incentive. *Economic incentive* was not a topic that was addressed in the survey but became an emergent theme. Providing economic enticement to partake in the program remains a primary reason that youth have been able to participate. Marco said he was able to participate because it was free and because information about the program was provided in Spanish. He also mentioned, “Free programs like Pura Vida give kids something to do.” José said that he had participated in other environmental and outdoor programs, but those programs got too expensive so he decided to do Pura Vida. José also commented on the issue of financial constraints: “Sometimes parents think they have limited resources or have to buy stuff, but Pura Vida is willing to lend resources out to get kids out there.” These results demonstrate that Pura Vida has provided participants with opportunity to engage in the outdoors without having to consider potential financial restraints.

Benefits and Challenges

Love for the outdoors. The emergent theme, *love for the outdoors*, was expressed by all of the participants. Interviewees were enthusiastic in their responses, especially when asked the question, “How do you experience nature?” Adelina told me, “I love being outdoors!” And Marco stated that he, “really want[s] to teach other people to take advantage of living in such a natural place.” Bella stated, “Pura Vida helped me understand that I love being outside. It gave me my own space, away from my mom and sister.” Other participants mentioned that they enjoy trail running, hiking, and meditating outdoors. Interviewees were also eager to express how much joy they felt when spending time outside.

The surveys generated a similar response, as when almost all respondents indicated, “strongly agree” to the statement, “I like to be outside” (S:5, Q:7). There were similar responses in reply to “I like nature” (S:5, Q:6), and “Nature makes me happy” (S:5, Q:5). All participants agreed that they not only loved being outside but also intended to go outside even more in the future as indicated by Figure 6. Recall that Hartig et al. (2011) underlined the array of emotional and physical benefits that people can obtain from participation in the outdoors.

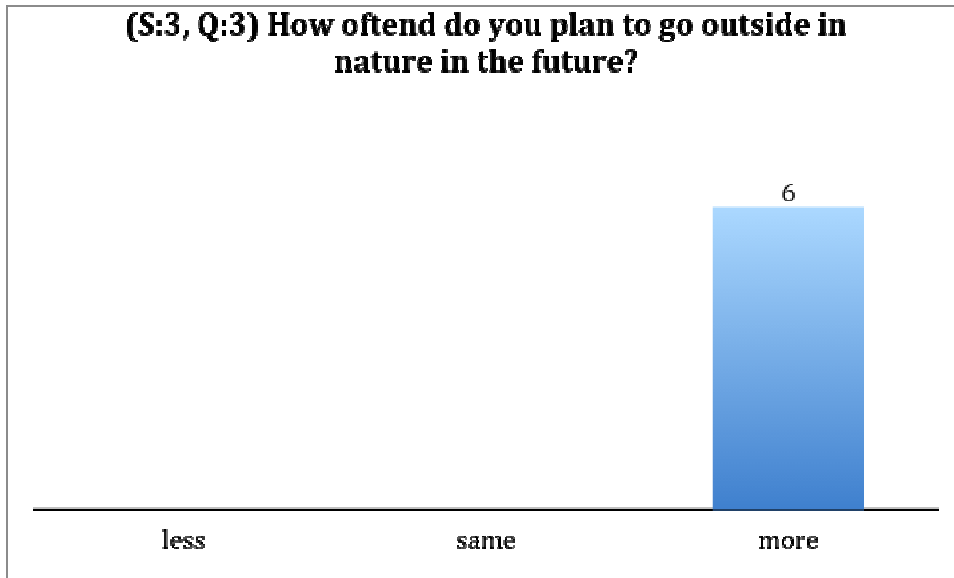


Figure 6. *Number of Participant Responses: Activity in Nature Intentions, Question #3*

Inclusion of Family. Participants loved having their families included in the outdoors during the Pura Vida program. Parents enjoyed spending time with their children outside and vice versa, as Marco expressed, “I love the inclusiveness of bringing your families into GTNP. That’s a big benefit because not many programs do that... Parents enjoy seeing accomplishments and hearing about their kids and their experience... [It] gives chance for parents not to be home and to be active.” Participants were excited to share information with their families about where to go and what to do. Bella said, “My mom loved the family component and was excited for it every year.” And finally Yolanda commented, “Pura Vida gets Latino families outside in nature... Trying to bring more families and diversity into the park has been something that I’ve really loved and would like to continue to do.”

Participants placed high value on the inclusion of friends and family as indicated in Figure 7, but there are still remaining challenges faced by families to actually be able to attend the Pura Vida family event, as highlighted by Yolanda’s comment; “It’s easy to

say that we're going to bring our families into the park but when you do it you realize its really hard because of work schedules or transportation, or the fact that the families don't know [much about the significance of the evening event]." Some parents may not have the time because of economic challenges, as expressed by José: "My mom doesn't have time to spend in the outdoors because she wants to provide for us so that we can do the things we want. She works seven days a week." Other participants responded similarly and expressed that their mom or dad could not engage in the program because of work.

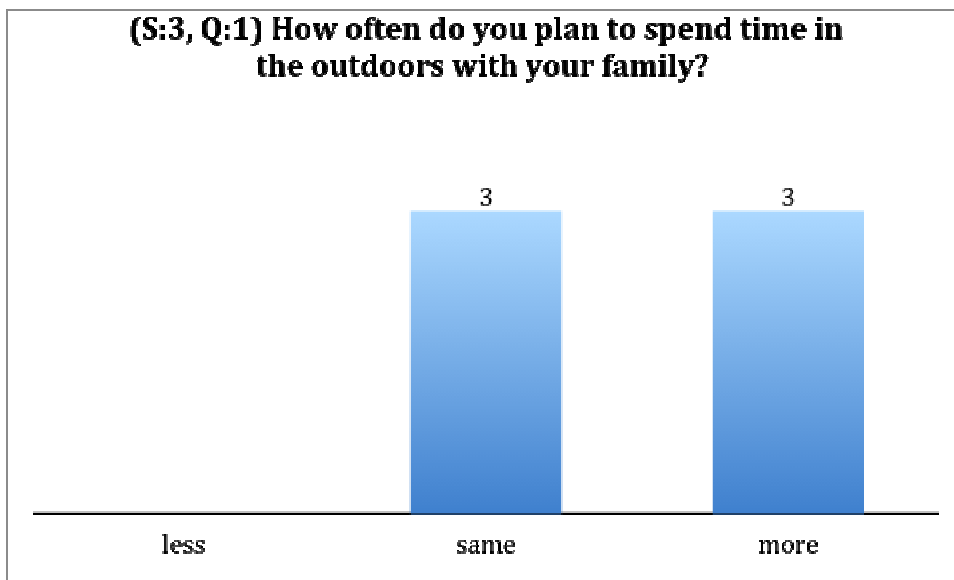


Figure 7. Number of Participant Responses: Activity in Nature Intentions, Question #1

Safety concern. While participants expressed that they loved spending time outdoors with friends and family, and hope to participate in more activities in the future, they are still limited in their capacity to engage in certain outdoor activities because of concerns about safety. This theme was not touched upon in the survey and emerged during the collection of qualitative data. The interviewees said that they would love to go outdoors more often and explore GTNP but do not feel safe because they do not have anyone to go with or have not completely acquired the skills to perform certain activities,

like camping. Marco said he wanted to learn “how to be outdoors more, like safely or on my own.” Marco felt he would go outside more often if he had these skills or if he had friends who were interested in going outside with him. He and other participants also said that other friends and family may feel the same way and that they do not know how to be safe in the outdoors or what precautions to take to mitigate risks. Bella echoed this concern when she said, “Sometimes I go for a walk by myself but I don’t do this in GTNP because I don’t feel safe and am too scared.” She also said, “[I] wish I could do more but I don’t have the knowledge. My family doesn’t camp... and they don’t have knowledge about safety.” As indicated, participants were able to experience GTNP when they were with the Pura Vida program but did not feel safe to engage in the park alone. These findings suggest there is a need for increased opportunities for engagement beyond their time with Pura Vida.

Interest in Other Environmental Programs. A final theme that emerged from the collection of qualitative data was the interest in participating in other environmental programs, such as the Youth Conservation Corps or National Park Service Academy. Marco commented: “During the summer, I wanted to get involved with Pura Vida and kinda (sic) help out and work for NPS or do NPS Academy because they do good stuff with teenagers or just people or kids in school.” Another participant, Bella, mentioned that she had been a part of the Youth Conservation Corps and loved her experience. Others expressed that they are interested in these types of programs because it would give them the chance to enhance their professional skills and to engage in stewardship projects. In general these participants felt a sense of belonging to the program and wanted

to be involved in similar environmental initiatives. Recall Cialdini (2003), who noted that a sense of belonging can be a motivating force behind people's actions.

Unfortunately, many interviewees expressed that they do not always have the opportunity to take action or pursue certain professional development opportunities because of their legal status. Adelina mentioned this issue when she said, "Because of my legal status [Deferred Action for Childhood Arrivals], I can't work in the National Park or government agencies. It's a huge barrier." Bella expressed similar concern; "I want to volunteer as a translator [for NPS] but it's difficult as a DACA student." Deferred Action Childhood Arrivals (DACA) is an American immigration policy that was created by the Obama administration in 2012. This policy allows for immigrants who came to the U.S. as children and who meet a list of guidelines to be lawfully present in the country but not as legal citizens ("Consideration for DACA," 2015). The interviewed participants of Pura Vida would like to participate in comparable programs to Pura Vida, but often do not meet the minimum job qualifications because of their legal status. This is a remaining challenge for many of the participants and a potential barrier to increasing engagement of diverse groups within the NPS.

Importance of Pura Vida

Pura Vida appears to have increased participants' positive environmental behaviors and their engagement with the natural world. The program considers the sociocultural context of the young Latino population and addresses cultural values, such as the inclusion of family, as a way to build stronger, more meaningful connections between individuals and their experiences. Research by Ewert et al (2005) supports that youth can formulate positive values associated with the outdoors when spending time in

nature with friends and family. Pura Vida specifically targets youth in middle school and high school because these adolescent years are a critical time in shaping a child's environmental behavior (Dahl, 2004).

Data suggest that the theme of providing *economic incentive* for participants is a key part of program success. This matches literature from De Young (2000), who emphasized the importance of providing incentive to inspire engagement. Pura Vida has gained a reputation of being inclusive because it recognizes the potential financial restraints experienced by the Latino community and is free of charge. By eliminating financial barriers and providing access, Pura Vida introduces participants to places in Grand Teton National Park that they otherwise would not have known about.

Benefits of Pura Vida

Based upon survey and interview data, participants have gained benefits as a result of their participation in Pura Vida. Tables 7 and 8 in Chapter 4 show the success of the program based upon the positive environmental responses that emerged from the surveys and the emergent themes from interviews. These responses indicate both enhanced positive environmental behavior and increased engagement in the outdoors and GTNP.

It is evident that participants love spending time in nature. The program has proven to be a benefit to participants because it provides the opportunity for these youth to do what they love, and for some, even exposed an undiscovered love for spending time outside.

Pura Vida has not only provided youth with the opportunity to engage in the outdoors but has resulted in an increase in participant engagement in outdoor activities as

indicated in the qualitative and quantitative data. Participants were able to break down pre-constructed social and cultural borders that may have discouraged them from exploring the outdoors, and through experience with the program found relevance between their own attitudes and experiences (Tzou & Bell, 2012). Recall research from the National Audubon Society, which states that establishing connections across cultures, and creating a sense of belonging and purpose among individuals can be a stimulus for engagement.

Participants are willing to engage in more outdoor activity, not only on their own and with friends, but also with their families. Participants enjoyed the inclusion of families in the program because it gave them a chance to show their parents and siblings what they have learned. Families in turn have also enjoyed the opportunity to get to know GTNP with their children.

Responses supporting the emergent theme of *environmental concern* indicate another benefit of the program. Participants are not only concerned about changes and damage to the environment but want to volunteer to protect natural spaces after having done stewardship work with Pura Vida (Figure 5).

Data suggests that Pura Vida has also enhanced participant leadership skills and knowledge. Participants enjoyed learning about nature in an outdoor setting, and not only gained knowledge about their surroundings but also developed the leadership skills to teach and communicate effectively. While there are several outcome benefits resulting from Latino youth participation in Pura Vida, some of these benefits also present challenges.

Remaining Challenges

Participants have engaged in outdoor activities more often, but as indicated, it is still difficult to engage families because of demanding work schedules and lingering concerns about safety. This outcome is in alignment with the writing of Barry Lopez (1990), who stresses the importance that youth need to first feel safe in order to connect and engage with place. Pura Vida participants and their families fear potential environmental risks when spending time in GTNP, such as encounters with wildlife. Participants have an understanding of these risks but often do not go because of lack of company and safety in numbers.

An additional challenge for some of these Latino youth when applying for certain environmental or outdoor related jobs is the issue of their legal status. As mentioned, these youth would love to work for the NPS or pursue another environmental position with a government agency, yet are unable to do so because of their legal status of DACA. Those who qualify receive a renewable two-year work permit and exemption from deportation (“Consideration for DACA,” 2015).

Limitations and Recommendations

As indicated, the legal status of DACA is a serious and primary barrier for many youth in attempting to apply for park positions. The NPS should consider this as it attempts to increase recruitment of diverse populations into the workforce. I recommend changes in policy that would allow individuals with DACA status to be eligible for work authorization with the NPS. The creation of this policy would allow for a larger audience of diverse groups to engage in national parks and feel that they have the power or agency to make a difference in helping the environment.

Recommendations for future research. My study was the first formal evaluation of the program, and there remains areas of improvement for more effective evaluation and restructuring of the Pura Vida program. The original intention of this research was to complete an intensive mixed methods study to explore the impact of Pura Vida on participant environmental behavior and engagement in Grand Teton National Park. There was a very low response rate of those who agreed to participate in my research, and thus this study presents a limited scope and potential for a sampling bias. Only 10 of 86 total alumni returned the appropriate consent forms to participate, and 6 of those 10 actually followed through to participate (Table 2). In addition, 4 out of the 5 alumni who participated in the surveys and interviews were female. This ratio is not reflective of the alumni pool, which consists of 46 females and 40 males.

The first year I participated in the program, GTNP park staff member Vanessa Torres, the original visionary of the program, and I visited the local high school to recruit participants. This program was unique from the beginning because of how personal it was. Vanessa knew the kids she was reaching out to and was able to chat individually with them to recruit them to the program. Much of the success of the program since its beginning in 2010 has likely been because of the positive personal relationships between Pura Vida staff, instructors, and participants. Trust and strong rapport are a part of the foundation of the program and continue to be a reason for its success. Due to restrictions from the Institutional Review Board, I was unable to make direct contact with participants to invite them to be a part of my research.

It was difficult to communicate my research through a stack of papers that was sent via mail by me, a researcher living on the opposite side of the state from most of the

participants. These invitations most likely were overwhelming to review or hard to understand without a personal explanation. In reflecting upon my methods, I would recommend a different approach to reaching out to students, other than mailing forms. Research invitations should be handed out by Pura Vida staff during programmatic time, and returned to those staff once appropriate signatures have been obtained. This approach would enable staff to explain the critical aspects of the research and answer any questions.

If Pura Vida staff were able to achieve some success in recruiting research participants through this more direct approach, then I would recommend organizing multiple in-person focus group studies to collect qualitative and quantitative data. These focus groups could be small but numerous to better guarantee breadth and depth in the evaluation. Additionally, research recruiters could aim to organize focus groups that are more representative of the participant population as a whole. Meaning, those individuals providing data should be reflective of the overall male, female ratio, and should have varying years of experience with the Pura Vida program.

This recommended research approach would require at least one year of recruitment and data collection, and a second year of analysis and synthesis. I had a small window to collect and process the data and thus was limited in my ability to effectively recruit and evaluate the program.

Recommendations for Pura Vida. Participants advocate for more variety in program activities and places visited in the park so that each year their experience with the program is new and different. This idea that participants would like to see more of a program progression backs up the power and the need for new curriculum, as noted by

Yolanda: “Pura Vida has been working out for a while now but could use some expanding. Like expose kids to more and new places. This would be a positive component to the program.” Pura Vida has experienced overwhelming success based upon participant numbers, has provided opportunity that participants might otherwise not have had, and is now at a point where staff should focus on designing a program progression through curriculum development.

Since the interviews were conducted, I have been in contact with the interview participants to inquire about their current engagement in the outdoors. The majority expressed that, yes, they would love to be outside more, but still do not have friends to go with or depth of experience to explore the outdoors alone. Pura Vida is an effective program for those in middle school and high school, but there is a need for even more targeted programs to serve these youth in the years beyond their secondary education.

Conclusions

My research suggests that Pura Vida has had a positive impact on these participants’ environmental behavior and engagement in Grand Teton National Park. This program continues to progress to meet its mission to effectively serve Latino youth living in the gateway communities of Grand Teton National Park. As the NPS approaches its second century, it is important to highlight successful programs like Pura Vida so that NPS and communities around the nation can develop their own diversity outreach program initiatives. In addition, this research highlights the many benefits and challenges stemming from Pura Vida, and the significance of understanding sociocultural context to identify how Latino youth connect to nature in order to recognize entry points for engagement. The legal status of DACA is a serious barrier for many youth, and the NPS

needs to find a solution to this issue to effectively enhance recruitment of diverse populations into the workforce.

In looking ahead to 2016, the NPS has the opportunity to build up communities by offering more targeted programs for people of all ages and backgrounds. Well-structured environmental educational programs have the potential to foster a sense of empowerment and agency among individuals. This study serves as groundwork for understanding the potential benefits and challenges that arise from NPS-related programs targeting diverse populations.

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Appendix A

University of Wyoming IRB Proposal Form

<p style="text-align: center;">Institutional Review Board Room 308, Old Main 1000 East University Avenue, Dept. 3355 Laramie, WY 82071</p> <p style="text-align: center;">Phone: 307-766-5320 Fax: 307-766-2608 email: irb@uwyo.edu</p> <p style="text-align: center;">(Electronic submission via email is encouraged.)</p>
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1. Responsible Project Investigator & Faculty Supervisor

Responsible Project Investigator:

Name: Teddi Hofmann

Title: Graduate Student

Department: Science and Mathematics Teaching Center

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Fax number:

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Funding Source (if the project is funded):

Faculty Supervisor (if PI is a student):

Name: Ana Houseal

Title: Assistant Professor

Department: Science and Mathematics Teaching Center

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Phone number: (307) 766-4925

Fax number:

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2. Title of Study:

Exploring the impact of Pura Vida on participant environmental behavior and engagement in Grand Teton National Park

3. Anticipated Project Duration:

November 15, 2014 – November 15, 2016

4. Purpose of Research Project:

In LAY LANGUAGE, summarize the objectives and significance of the research:

The objective of this program evaluation research is to understand the impact that Pura Vida has had on youth participants in terms of their general engagement in Grand Teton National Park. Pura Vida is a partnership program between Grand Teton National Park (GTNP) and the Teton Science Schools that encourages Latino youth to visit GTNP and become ambassadors for the park with their family and friends. The program activities occur during the summer months and are provided completely free of charge. Pura Vida targets two age groups (middle school and high school) of Latino youth living in Jackson, WY. Activities over the course of the week-long program include, hiking, canoeing, community service, and professional development presentations led by GTNP staff.

Currently, the Latino population of Jackson, WY is about 27.2% of the total population (US Census Bureau, 2014), yet the percentage of GTNP visitors does not reflect this, according to the National Park Service (2011). There could be a range of reasons for the disparity, such as lack of transportation to and from the GTNP, conflict of schedules, and unfamiliarity with the area. Pura Vida aims to engage the local Latino population in GTNP to provide better access and encourage environmental stewardship.

As part of this Plan B research, a survey and interview questions will be used to understand the impact Pura Vida has had on participant behaviors and attitudes. The information gained will be complemented by a literature review exploring the significance of engagement as it relates to outdoor experiences, environmental attitudes, and environmental stewardship. The significance of the research is to provide a case study evaluation of the impact of Pura Vida on participant engagement in GTNP specifically for Teton Science Schools and GTNP. This evaluation may also help inform future decisions regarding engaging underrepresented populations in the National Park Service.

Summarize the literature related to this study (no more than two paragraphs):

The population within the United States is becoming increasingly diverse. As the National Park Service approaches its 100-year anniversary in 2016 and assesses its accomplishments and management plans, leaders within NPS are reflecting on how the Parks have engaged communities in recreation, conservation, and preservation. According to recently collected data, Park visitation does not reflect the diversity of the U.S. population (Lorenzini, 2013). To be relevant to future generations, the National Park Service aims to diversify the NPS staff and provide services that will attract visitors of diverse backgrounds (Bonta, 2007). One way to do this and better connect people to place and nature is through outdoor education programs (Aaron, 2009).

Pura Vida is a program designed to meet this mission, by engaging Latino youth in activities in Grand Teton National Park (GTNP) so as to encourage more engagement and representation of the population existing in Jackson, WY, GTNP's gateway community.

Land ethic is not new to Latino culture; it has been a part of the history and folk tales throughout time (Pena, 2005). If national parks and public lands are going to remain relevant, then this ethic needs to be tapped in to and there needs to be an effort within the environmental stewardship movement to connect and serve all people.

An evaluation of the program is being conducted to give participants a voice to improve programmatic outcomes (Fitzpatrick et al, 2011).

5. Description of Human Subject Participants:

A. Age-range and gender: 12– 21 years old males and females

B. Describe how the participants will be recruited and/or selected:

Latino youth who have participated in the program for at least one year are eligible for recruitment and selection. Contact will be made by mail through the Teton Science Schools' staff. In the mail, participants will receive a research invitation letter, along with a consent and/or assent form to be completed if they agree to participate. Participants will also receive a stamped envelope addressed to the RPI's faculty supervisor, Ana Houseal at: 1000 E. University Avenue, Wyoming Hall 404, Laramie, WY 82071. If participants give consent and/or assent, the forms must be signed and returned in the stamped and addressed envelope.

C. Describe the number of participants expected: Up to 77 participants will be recruited, with the hope of a 50% response rate.

D. Incentive to be provided for participation: No incentives will be provided for participation.

E. Description of special classes: N/A

F. Criteria for exclusion from participant pool: Participants must have participated in the Pura Vida program for at least one year. The Teton Science Schools has the contact information of those who have participated for at least one year and will be able to screen for this inclusion criteria.

6. Procedure:

A. Description of subjects' participation: Each participant will complete a survey that will take between 15-20 minutes to complete. Each participant has the option to complete the survey, or complete the interview, or complete both the survey and the interview. The participant will note this decision by checking the appropriate box(es) on the assent or consent form. Of those participants who agree to participate in the interview, they will be assigned a pseudonym, and then 6 subjects will be selected at random to participate. The interview will take between 30-60 minutes. Participants can complete the survey and/or interview in any order.

B. What will non-participants do while subjects participate: N/A

C. What will subjects be told about the research project: Participants will be informed that this is a research project that will satisfy partial requirements for a Master's Degree in Natural Science and Environment and Natural Resources from the University of Wyoming. They will also be informed that the survey data collected will be entirely anonymous. The data will be analyzed to determine the impact on participant engagement as it relates to environmental stewardship. Interviewees will receive questions prior to the scheduled interview. Additionally, participants will be sent a copy of the consent/assent forms with detailed information about their role in the study including risks, benefits, and protection of privacy and confidentiality.

D. Description of deception: N/A

E. Subject time involved: Each participant will complete a survey that will take between 15-20 minutes to complete. Additionally, 6 subjects will participate in an individual interview that is semi-structured and will take between 30-60 minutes.

F. Where will research take place: The surveys will be completed through a Google Form online. Interviews will be conducted in a mutually acceptable public location, or using video-conferencing platforms such as Skype or Google Hangouts.

G. Method of data collection: Survey data will be conducted and retrieved online. Interview data will be collected through semi-structured interviews that contain six to twelve open-ended questions. The Responsible Project Investigator (RPI) will document the participants' answers manually in an electronic document. Video and/or audio recordings will be conducted for those participants who agreed to it on the informed assent or consent form (See Appendix A and C). Following the interview, the RPI will transcribe visual and/or audio-recorded data. General ideas and themes will be highlighted, and placed in common categories. Member checks will be completed with participants by providing them with a copy of the transcribed data. They will be allowed to strike anything that is incorrect and/or that they do not want in the final copy. The RPI will utilize a journal for the entire research process in order to maintain credibility and validity, and to explore the RPI's biases.

H. When and how may subjects terminate participation:

Any participant may choose to withdraw from the study at any point in time by indicating that they would like to opt out of the study for any reason. Participants may withdraw prior, during, or after the survey or interview. They will be able to opt out by indicating their preference to the RPI, Teddi Hofmann, or University of Wyoming Faculty Supervisor, Ana Houseal.

I. Description of biological samples: N/A

J. Description of equipment to be used on or by subjects: Surveys will be conducted electronically using Google forms. Interviews will be conducted in person or virtually using audio and/or video recording.

7. Confidentiality Procedures:

A. Explain whether or not subjects will be identified by name, appearance, or nature of data:

Interviewee subjects will not be identified by name or disclose any other personal identifiers. Interviewees will be given pseudonyms and any identifying information will be eliminated from reports or papers. Surveys will be anonymous and conducted electronically to reduce personal identifiers and the privacy of participants.

B. Explain the procedure that will be used to protect privacy and confidentiality:

The informed assent form and consent form (See Appendix A and C) for interviewees states that only the RPI and the Faculty Supervisor will have access to the visual and/or audio recordings if the participant approves of these data collection methods. The RPI will only use a subjects' numerical code when collecting and transcribing the data, and pseudonyms will be used in the research findings. Only non-identifying background information will be included in the research findings. The RPI will not discuss the subjects' names and/or background with anyone other than the Faculty Supervisor.

Survey Google forms can be set up such that the data is returned to the RPI without any identifying information.

C. How and where will data be stored: Surveys will be submitted electronically and stored on a password-protected computer.

D. How long will it be stored: The RPI shall maintain, in a designated location, the signed informed consent forms, the signed assent forms, and the written research summary, relating to research, which is conducted for at least three years after completion of the research.

E. Who will have access to the data: RPI, Teddi Hofmann, and University of Wyoming Faculty Supervisor, Ana Houseal, will be the only two people with access to the data.

F. Other confidentiality issues: None

8. Benefits to Subjects:

A. Describe the indirect research benefits for the participants:

Participants will have an opportunity to reflect on how Pura Vida has impacted their engagement in Grand Teton National Park.

B. Describe the direct research benefits or state there are no direct benefits to the subjects:

There are no direct benefits to the subjects.

9. Risks to Subjects:

Describe the risks to subjects:

There are minimal risks to participants involved in this proposed research study. It is possible that interviewees may feel some level of embarrassment in their responses regarding engagement in Grand Teton National Park. To minimize the potential risks all survey responses will be entirely anonymous. The above noted risks are minimal due to the probability and magnitude of the harm or discomfort that this research entails, and are not greater than that ordinarily encountered in daily life.

10. Description of procedure to obtain informed consent or other information to be provided to participant:

A. How, when and by whom will the subjects be approached to obtain consent?

Potential participants will be invited to participate in this study via email or mail between February and April 2015. Of those who respond with interest in participating, and are under the age of 18, there will be two separate documents that they receive that will be sent via mail by the Teton Science Schools' staff. Those

two documents are: (1) a parental consent form and (2) a child assent form containing a more complete explanation of the study and expected commitments of participation. The signed parental consent form will be returned via mail to the faculty supervisor, Ana Houseal. For those who respond with interest in participating and are age 18 or older, a consent form will be sent via mail by the Teton Science Schools, and a signed form can be returned via mail to the faculty supervisor, Ana Houseal.

- B. How will information be relayed to subject (read to, allowed to read, audio-recorded, video-recorded)?** Participants will be allowed to read information in each of the electronic surveys.
- C. Provide a description of feedback, debriefing, or counseling referral that will be provided.** The RPI will provide feedback and/or debrief with participants when requested and/or necessary.
- D. Explain the procedure that will be used to obtain assent of children of an age and mental capacity deemed capable of providing such.** For participants under 18, there will be two separate documents: (1) a parental consent form and (2) a child assent form. Each form requires signatures and will be sent via mail by the Teton Science Schools. The assent form and consent form can be returned via mail to the faculty supervisor, Ana Houseal.
- 11A. Attach copies of survey instruments, interview questions, tests, and other pertinent documentation that will be used to conduct the research. Note: Please see the informed consent outline for suggested language for consent forms.**

Appendix B

Participant Informed Consent Form

DESCRIPTION OF THE RESEARCH

I, Teddi Hofmann, am a graduate student at the University of Wyoming completing a Master's in Natural Science Education and Environment & Natural Resources. I am conducting my research under the supervision of Dr. Ana Houseal, to evaluate the impact that **Pura Vida** has had on program participants. I would like to invite you to participate in this research study because you have been a **participant of Pura Vida**.

WHAT YOU WILL BE ASKED TO DO

If you decide to participate, you will be asked to complete a survey, which would take no more than 20 minutes, using Google Forms online, or a paper form to return in a self-addressed stamped envelope. You may also choose to participate in an interview, which would take no more than 60 minutes, and would be recorded. The survey and interview questions will be structured around obtaining descriptive data pertinent to the following research question:

- 1) What impact has Pura Vida had on participants in terms of general engagement in Grand Teton National Park?

RISKS AND POSSIBLE BENEFITS

Participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time. There will be minimal risks involved, and there is no cost for participating. It is possible participants may feel some level of embarrassment in their responses regarding engagement in Grand Teton National Park. Participants may benefit from reflecting on how Pura Vida has impacted their engagement in Grand Teton National Park.

PROTECTION OF PRIVACY AND CONFIDENTIALITY

Surveys are entirely anonymous and conducted electronically to reduce personal identifiers and the privacy of participants. Paper surveys will be transcribed and then destroyed. Pseudonyms will be used for all interview participants to maintain anonymity. The RPI, or responsible project investigator, shall maintain, in a designated location, the signed informed consent forms, the signed assent forms, and the written research summary, relating to research, which is conducted for at least three years after completion of the research. The RPI, Teddi Hofmann, and her supervisor, Ana Houseal, will be the only two people with access to the data, which will be stored on a password protected computer.

CONTACT INFORMATION

If you have any questions about the study or this form, please contact me at (415) 509 - 0913 or thofmann@uwyo.edu, or Dr. Ana Houseal, at (307) 766-4925 or ahouseal@uwyo.edu. If you have questions regarding your rights as a research subject, please contact IRB via e-mail: irb@university.edu *University of Wyoming IRB Administrator at 307-766-5320.*

CONSENT

Your signature indicates that you have read and understand the information provided above, and that you willingly agree to participate. You will be offered a copy of this form to keep for your own records.

Check the box(es) below to indicate how you would like to participate in the study:

I would like to participate in the survey.

I would like to participate in the interview.

Printed name of participant

Participant signature

Date

Appendix C

Participant Informed Assent Form

DESCRIPTION OF THE RESEARCH

I, Teddi Hofmann, am a graduate student at the University of Wyoming completing a Master's in Natural Science Education and Environment & Natural Resources. I am conducting my research under the supervision of Dr. Ana Houseal, to evaluate the impact that **Pura Vida** has had on program participants. I would like to invite you to participate in this research study because you have been a **participant of Pura Vida**.

WHAT YOU WILL BE ASKED TO DO

If you decide to participate, you will be asked to complete a survey, which would take no more than 20 minutes, using Google Forms online, or a paper form to return in a self-addressed stamped envelope. You may also choose to participate in an interview, which would take no more than 60 minutes, and would be recorded. The survey and interview questions will be structured around obtaining descriptive data pertinent to the following research question:

- 1) What impact has Pura Vida had on participants in terms of general engagement in Grand Teton National Park?

RISKS AND POSSIBLE BENEFITS

Participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time. There will be minimal risks involved, and there is no cost for participating. It is possible participants may feel some level of embarrassment in their responses regarding engagement in Grand Teton National Park. Participants may benefit from reflecting on how Pura Vida has impacted their engagement in Grand Teton National Park.

PROTECTION OF PRIVACY AND CONFIDENTIALITY

Surveys are entirely anonymous and conducted electronically to reduce personal identifiers and the privacy of participants. Paper surveys will be transcribed and then destroyed. Pseudonyms will be used for all interview participants to maintain anonymity. The RPI or responsible project investigator shall maintain, in a designated location, the signed informed consent forms, the signed assent forms, and the written research summary, relating to research, which is conducted for at least three years after completion of the research. The RPI, Teddi Hofmann, and her supervisor, Ana Houseal, will be the only two people with access to the data, which will be stored on a password protected computer.

CONTACT INFORMATION

If you have any questions about the study or this form, please contact me at (415) 509 - 0913 or thofmann@uwyo.edu, or Dr. Ana Houseal, at (307) 766-4925 or ahouseal@uwyo.edu. If you have questions regarding your rights as a research subject, please contact IRB via e-mail: irb@university.edu *University of Wyoming IRB Administrator at 307-766-5320.*

CONSENT

Your signature indicates that you have read and understand the information provided above, and that you willingly agree to participate. You will be offered a copy of this form to keep for your own records.

Check the box(es) below to indicate how you would like to participate in the study:

I would like to participate in the survey.

I would like to participate in the interview.

Printed name of participant

Participant signature

Date

Appendix D

Parental Consent Form

DESCRIPTION OF THE RESEARCH

I, Teddi Hofmann, am a graduate student at the University of Wyoming completing a Master's in Natural Science Education and Environment & Natural Resources. I am conducting my research under the supervision of Dr. Ana Houseal, to evaluate the impact that **Pura Vida** has had on program participants. I would like to invite your child to participate in this research study because he/she has been a **participant of Pura Vida**.

WHAT YOUR CHILD WILL BE ASKED TO DO

If you decide that your child will participate, he/she will be asked to complete a survey, which would take no more than 20 minutes, using Google Forms online, or a paper form to return in a self-addressed stamped envelope. Your child may also participate in an interview, which would take no more than 60 minutes, and would be recorded. The survey and interview questions will be structured around obtaining descriptive data pertinent to the following research question:

- 1) What impact has Pura Vida had on participants in terms of general engagement in Grand Teton National Park?

RISKS AND POSSIBLE BENEFITS

Your child's participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which he/she is otherwise entitled, and he/she may discontinue participation at any time. There will be minimal risks involved, and there is no cost for participating. It is possible participants may feel some level of embarrassment in his/her responses regarding engagement in Grand Teton National Park. Participants may benefit from reflecting on how Pura Vida has impacted his/her engagement in Grand Teton National Park.

PROTECTION OF PRIVACY AND CONFIDENTIALITY

Surveys are entirely anonymous and conducted electronically to reduce personal identifiers and the privacy of participants. Paper surveys will be transcribed and then destroyed. Pseudonyms will be used for all interview participants to maintain anonymity. The RPI, or responsible project investigator, shall maintain, in a designated location, the signed informed consent forms, the signed assent forms, and the written research summary, relating to research, which is conducted for at least three years after completion of the research. The RPI, Teddi Hofmann, and her supervisor, Ana Houseal, will be the only two people with access to the data, which will be stored on a password protected computer.

CONTACT INFORMATION

If you have any questions about the study or this form, please contact me at (415) 509 - 0913 or thofmann@uwyo.edu, or Dr. Ana Houseal, at (307) 766-4925 or ahouseal@uwyo.edu. If you have questions regarding your rights as a research subject, please contact IRB via e-mail: irb@university.edu *University of Wyoming IRB Administrator at 307-766-5320.*

CONSENT

Your signature indicates that you have read and understand the information provided above, and that you authorize your child to participate. You will be offered a copy of this form to keep for your own records.

Check the box(es) below to indicate how you would like your child to participate in the study:

I would like my child to participate in the survey.

I would like my child to participate in the interview.

Printed name of parent or guardian

Parent or guardian signature

Date

Appendix E

February 5, 2015

Dear _____,

I am a current graduate student of the University of Wyoming and former Pura Vida instructor with the Teton Science Schools. I am currently working on my thesis and would like to invite you to be a part of my research!

What is my research, you ask?

- I am conducting an evaluation of Pura Vida to determine the impact it has had on participants.

Why have I picked you?

- The National Park Service is looking to improve and establish programs like Pura Vida throughout the United States. Because you are a former Pura Vida participant, you have a wealth of knowledge about your experience with Pura Vida! By participating in my research, you will be helping the NPS reach its mission!

What will you be asked to do?

- You will be given the chance to answer a series of online survey questions and even have the opportunity to participate in an interview if you would like.

What is the benefit?

- The Teton Science Schools (TSS) and National Park Service (NPS) needs you! By participating in my research, you will help expose ways for TSS and the NPS to best serve and connect with Latino youth and families.

Enclosed you will find forms to sign so you will be able to participate in my research. After signing the forms, **please place them in the stamped and addressed envelope and mail the forms ASAP.** If you have any questions about your participation, please contact my research supervisors:

Dr. Doug Wachob, Teton Science Schools

Phone: 307-733-1313

Email: doug.wachob@tetonscience.org

Dr. Ana Houseal, University of Wyoming

Phone: 307-766-4925

Email: ahouseal@uwyo.edu

I look forward to your response!

Sincerely,

Teddi Hofmann
University of Wyoming
Graduate Student

Appendix F

Sample Survey Questions

Activity in Nature

For each question, circle the response that best matches you.
In the past 12 months, how often have you...

1. Gone outside in nature?
 1. Never
 2. 1 to 2 times
 3. 3 to 9 times
 4. 10 + times

2. Spent time in the outdoors with your family?
 1. Never
 2. 1 to 2 times
 3. 3 to 9 times
 4. 10 + times

3. Gone hiking or walking in nature?
 1. Never
 2. 1 to 2 times
 3. 3 to 9 times
 4. 10 + times

4. Watched wildlife?
 1. Never
 2. 1 to 2 times
 3. 3 to 9 times
 4. 10 + times

5. Gone camping?
 1. Never
 2. 1 to 2 times
 3. 3 to 9 times
 4. 10 + times

Nature Info-consumption

For each question, circle the response that best matches you.
In the past month, how often have you...

1. Read a book about nature?
 - a. Never
 - b. Once
 - c. About weekly
 - d. Almost daily

2. Read about nature on the Internet?
 - a. Never
 - b. Once
 - c. About weekly
 - d. Almost daily

3. Talked about nature with your friends or family?
 - a. Never
 - b. Once
 - c. About weekly
 - d. Almost daily

4. Volunteered to help nature, such as trail maintenance or water quality testing, with your school, church, or community club?
 - a. Never
 - b. Once
 - c. About weekly
 - d. Almost daily

5. Read a newspaper or magazine article about nature?
 - a. Never
 - b. Once
 - c. About weekly
 - d. Almost daily

Activity in Nature Intentions

For each statement, circle the response that best matches you.
How often do you plan to do each activity in the future...

1. Spend time in the outdoors with your family?
 - a. Less
 - b. More
 - c. The same

2. Go hiking or walking in nature?
 - a. Less
 - b. More
 - c. The same

3. Go outside in nature?
 - a. Less
 - b. More
 - c. The same

4. Go camping?
 - a. Less

- b. More
 - c. The same
5. Watch wildlife?
- a. Less
 - b. More
 - c. The same
6. Go bicycling in nature?
- a. Less
 - b. More
 - c. The same
7. Spend time in the outdoors with your friends?
- a. Less
 - b. More
 - c. The same

Nature Info-Consumption Intentions

For each statement, circle the response that best matches you.

How often do you plan to do each activity in the future...

1. Go to a museum or other place with a display/exhibit about nature?
- a. Less
 - b. More
 - c. The same
2. Read a newspaper or magazine article about nature?
- a. Less
 - b. More
 - c. The same
3. Volunteer to help nature with your school, church, or community club?
- a. Less
 - b. More
 - c. The same
4. Read about nature on the Internet?
- a. Less
 - b. More
 - c. The same
5. Read a book about nature?
- a. Less
 - b. More
 - c. The same

6. Talk about nature with your friends and family?
 - a. Less
 - b. More
 - c. The same

Attitudes

For each statement, circle a number that best matches how you feel.

1. Spending time in nature is important to me.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

2. Learning about nature is important to me.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

3. I like learning about nature.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

4. I like learning things outside of school.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

5. Nature makes me happy.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

6. I like nature.
 - a. 5 - strongly agree
 - b. 4 - I agree

- c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree
7. I like to be outside.
- a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

Environmental Attitudes and Knowledge Scale

For each statement, check true or false based on your feelings or actions.

1. To save water, I would be willing to use less water when I bathe.
 - a. true
 - b. false

2. I would not give \$15 of my own money to help protect wild animals.
 - a. true
 - b. false

3. If I had the extra money, I would donate \$15 to the World Wildlife Fund.
 - a. true
 - b. false

4. To save water, I would be willing to turn off the water while I wash my hands.
 - a. true
 - b. false

5. I turn of water in the sink while I brush my teeth to conserve water.
 - a. true
 - b. false

6. I have asked my family to recycle some of the things we use.
 - a. true
 - b. false

7. I am frightened to think people don't care about the environment.
 - a. true
 - b. false

8. I do not worry about environmental problems.
 - a. true
 - b. false

9. It makes me sad to see houses being built where animals use to live.

- a. true
- b. false

Identity and Natural Environment Questions

For each statement, circle the number that best matches how you agree or disagree.

1. I am willing to engage in saving the living area and conditions of [forests, rivers, or streams].
 - a. 1 - complete disagreement
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6 - full agreement

2. When I think of [forests, rivers, or streams], I feel disgusted.
 - a. 1 - complete disagreement
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6 - full agreement

3. I am responsible for protecting [forests, rivers, or streams].
 - a. 1 - complete disagreement
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6 - full agreement

4. If there is no fundamental change, environmental problems will be getting worse and worse within the coming years.
 - a. 1 - complete disagreement
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6 - full agreement

5. I know a lot of things about [forests, rivers, or streams].
 - a. 1 - complete disagreement
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6 - full agreement

Modified New Ecological Paradigm Scale (NEP) for Children

For each statement, circle a number that best matches how you feel.

1. Humans have the right to change to natural environment to fit their needs.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

2. When humans disturb nature it often produces terrible results.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

3. Humans are greatly mistreating the environment.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

4. Plants and animals have as much a right as humans to live.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

5. Nature is strong enough to handle the bad effects of modern developed countries.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

6. Nature is very delicate and easily harmed.
 - a. 5 - strongly agree
 - b. 4 - I agree
 - c. 3 - Neither agree or disagree
 - d. 2 - I disagree
 - e. 1 - I strongly disagree

Source: National Oceanic and Atmospheric Administration; Office of National Marine Sanctuaries. (2011). *General Item Bank: Standardized Questions for Education/Outreach Projects*. In. (Ed.). Monterey, CA: National Oceanic and Atmospheric Administration; Office of Marine Sanctuaries.

Appendix G

Sample Interview Questions

For first set of questions I am going to ask about the environment. For the purpose of this survey, I will define the environment as the natural world in which we live.

1. How do you experience the environment?
2. Are you worried or concerned about change in the environment?
 - a. If yes, why?
 - b. If no, why?
3. Would you be interested in participating in other Grand Teton National Park or Teton Science Schools nature-based programs such as:
 - a. Youth Conservation Corps
 - b. The National Park Service Academy
 - c. Other nature-based program
4. What would you hope to learn?
5. What else would you like to tell me about your environmental experiences?
6. Please tell me about some outdoor experiences that you had during your middle school or high school years?
7. Where are your favorite outdoor places? How often do you go there? What do you do when you are there?
8. When you think about the experiences you had with Pura Vida, such as canoeing or hiking, and think about the activities you do now with your friends, family, or on your own, what impact did those Pura Vida experiences have on your current experiences?
9. Have you ever experienced the loss of a natural area that was meaningful to you? Please describe the place? Has your behavior or attitude changed as a result of this experience?
10. What would you change or add to the Pura Vida program? Is there anything that you would like to see incorporated into a program for you and your family or your friends?

Source: Satterlee, D. J. (2010). *Exploring changes and perceptions in environmental attitudes as a result of early learning experiences in the outdoor world utilizing spark, an innovative family learning program* Doctoral dissertation, ProQuest LLC, Ann Arbor.

Appendix H

Survey Responses

Activity in Nature: In the past 12 months, how often have you...

1. Gone outside in nature?

Respondent 1: 10 + times
Respondent 2: 10 + times
Respondent 3: 3 to 9 times
Respondent 4: 10 + times
Respondent 5: 10 + times
Respondent 6: 10 + times

2. Spent time in the outdoors with your family?

Respondent 1: Never
Respondent 2: 3 to 9 times
Respondent 3: Never
Respondent 4: Never
Respondent 5: 3 to 9 times
Respondent 6: 3 to 9 times

3. Gone hiking or walking in nature?

Respondent 1: 10 + times
Respondent 2: 10 + times
Respondent 3: 3 to 9 times
Respondent 4: 10 + times
Respondent 5: 10 + times
Respondent 6: 10 + times

4. Watched wildlife?

Respondent 1: 3 to 9 times
Respondent 2: 3 to 9 times
Respondent 3: 3 to 9 times
Respondent 4: 3 to 9 times
Respondent 5: 3 to 9 times
Respondent 6: 3 to 9 times

5. Gone Camping?

Respondent 1: Never
Respondent 2: 3 to 9 times
Respondent 3: 3 to 9 times
Respondent 4: Never

Respondent 5: 3 to 9 times

Respondent 6: 3 to 9 times

Nature Info-consumption: In the past month, how often have you...

1. Read a book about nature?

Respondent 1: Never

Respondent 2: Never

Respondent 3: Once

Respondent 4: Once

Respondent 5: Once

Respondent 6: About weekly

2. Read about nature on the Internet?

Respondent 1: Once

Respondent 2: Never

Respondent 3: Once

Respondent 4: About weekly

Respondent 5: Never

Respondent 6: About weekly

3. Talked about nature with your friends or family?

Respondent 1: Never

Respondent 2: About weekly

Respondent 3: About weekly

Respondent 4: Never

Respondent 5: Once

Respondent 6: About daily

4. Volunteered to help nature, such as trail maintenance or water quality testing, with your school, church, or community club?

Respondent 1: Never

Respondent 2: About weekly

Respondent 3: About weekly

Respondent 4: Never

Respondent 5: Once

Respondent 6: About daily

5. Read a newspaper or magazine article about nature?

Respondent 1: Once

Respondent 2: Never

Respondent 3: Once

Respondent 4: Once

Respondent 5: Never
Respondent 6: About weekly

Activity in Nature Intentions: How often do you plan to do each activity in the future...

1. Spend time in the outdoors with your family?

Respondent 1: Same
Respondent 2: Same
Respondent 3: Same
Respondent 4: More
Respondent 5: More
Respondent 6: More

2. Go hiking or walking in nature?

Respondent 1: More
Respondent 2: More
Respondent 3: Same
Respondent 4: More
Respondent 5: More
Respondent 6: More

3. Go outside in nature?

Respondent 1: More
Respondent 2: More
Respondent 3: More
Respondent 4: More
Respondent 5: More
Respondent 6: More

4. Go camping?

Respondent 1: More
Respondent 2: More
Respondent 3: Less
Respondent 4: More
Respondent 5: More
Respondent 6: More

5. Watch wildlife?

Respondent 1: Same
Respondent 2: More
Respondent 3: Same
Respondent 4: More
Respondent 5: Same

Respondent 6: More

6. Go bicycling in nature?

Respondent 1: Same

Respondent 2: Same

Respondent 3: Less

Respondent 4: More

Respondent 5: Same

Respondent 6: Same

7. Spend time in the outdoors with your friends?

Respondent 1: Same

Respondent 2: More

Respondent 3: More

Respondent 4: Same

Respondent 5: More

Respondent 6: More

Nature Info-Consumption Intentions: How often do you plan to do each activity in the future...

1. Go to a museum or other place with a display/exhibit about nature?

Respondent 1: Same

Respondent 2: More

Respondent 3: Same

Respondent 4: Same

Respondent 5: Same

Respondent 6: More

2. Read a newspaper or magazine article about nature?

Respondent 1: Same

Respondent 2: More

Respondent 3: Less

Respondent 4: More

Respondent 5: Same

Respondent 6: More

3. Volunteers to help nature with your school, church, or community club?

Respondent 1: Same

Respondent 2: More

Respondent 3: More

Respondent 4: More

Respondent 5: More

Respondent 6: More

4. Read about nature on the Internet?

Respondent 1: Same

Respondent 2: More

Respondent 3: Same

Respondent 4: More

Respondent 5: Same

Respondent 6: More

5. Read a book about nature?

Respondent 1: Same

Respondent 2: More

Respondent 3: Less

Respondent 4: Same

Respondent 5: Same

Respondent 6: More

6. Talk about nature with your friends or family?

Respondent 1: Same

Respondent 2: More

Respondent 3: Less

Respondent 4: More

Respondent 5: More

Respondent 6: More

Attitudes

For each statement, circle a number that best matches how you feel.

1. Spending time in nature is important to me.

Respondent 1: 2

Respondent 2: 4

Respondent 3: 5

Respondent 4: 4

Respondent 5: 4

Respondent 6: 5

2. Learning about nature is important to me.

Respondent 1: 2

Respondent 2: 4

Respondent 3: 5

Respondent 4: 4

Respondent 5: 3

Respondent 6: 5

3. I like learning about nature.

Respondent 1: 1

Respondent 2: 4

Respondent 3: 5

Respondent 4: 5

Respondent 5: 3

Respondent 6: 5

4. I like learning things outside of school.

Respondent 1: 3

Respondent 2: 5

Respondent 3: 5

Respondent 4: 5

Respondent 5: 3

Respondent 6: 5

5. Nature makes me happy.

Respondent 1: 2

Respondent 2: 5

Respondent 3: 5

Respondent 4: 5

Respondent 5: 4

Respondent 6: 5

6. I like nature.

Respondent 1: 3

Respondent 2: 5

Respondent 3: 5

Respondent 4: 5

Respondent 5: 4

Respondent 6: 5

7. I like to be outside.

Respondent 1: 3

Respondent 2: 5

Respondent 3: 5

Respondent 4: 5

Respondent 5: 4

Respondent 6: 5

Environmental Attitudes and Knowledge Scale

For each statement, check true or false based on your feelings or actions.

1. To save water, I would be willing to use less water when I bathe.

Respondent 1: TRUE

Respondent 2: TRUE

Respondent 3: TRUE

Respondent 4: TRUE

Respondent 5: TRUE

Respondent 6: TRUE

2. I would not give \$15 of my own money to help protect wild animals.

Respondent 1: FALSE

Respondent 2: FALSE

Respondent 3: TRUE

Respondent 4: FALSE

Respondent 5: TRUE

Respondent 6: TRUE

3. If I had the extra money, I would donate \$15 to the World Wildlife Fund.

Respondent 1: FALSE

Respondent 2: TRUE

Respondent 3: TRUE

Respondent 4: TRUE

Respondent 5: FALSE

Respondent 6: TRUE

4. To save water, I would be willing to turn off the water while I wash my hands.

Respondent 1: FALSE

Respondent 2: TRUE

Respondent 3: TRUE

Respondent 4: TRUE

Respondent 5: TRUE

Respondent 6: TRUE

5. I turn off the water in the sink while I brush my teeth to conserve water.

Respondent 1: TRUE

Respondent 2: FALSE

Respondent 3: TRUE

Respondent 4: TRUE

Respondent 5: TRUE

Respondent 6: TRUE

6. I have asked my family to recycle some of the things we use.

Respondent 1: TRUE
Respondent 2: TRUE
Respondent 3: TRUE
Respondent 4: TRUE
Respondent 5: TRUE
Respondent 6: TRUE

7. I am frightened to think people don't care about the environment.

Respondent 1: TRUE
Respondent 2: TRUE
Respondent 3: TRUE
Respondent 4: FALSE
Respondent 5: TRUE
Respondent 6: TRUE

8. I do not worry about environmental problems.

Respondent 1: FALSE
Respondent 2: FALSE
Respondent 3: FALSE
Respondent 4: TRUE
Respondent 5: FALSE
Respondent 6: FALSE

9. It makes me sad to see houses being built where animals use to live.

Respondent 1: TRUE
Respondent 2: TRUE
Respondent 3: TRUE
Respondent 4: TRUE
Respondent 5: FALSE
Respondent 6: TRUE

Identity and Natural Environment Questions

For each statement, circle the number that best matches how you agree or disagree.

1. I am willing to engage in saving the living area and conditions of [forests, rivers, or streams].

Respondent 1: 1
Respondent 2: 5
Respondent 3: 6
Respondent 4: 5
Respondent 5: 3

Respondent 6: 6

2. When I think of [forests, rivers, or streams], I feel disgusted.

Respondent 1: 1

Respondent 2: 1

Respondent 3: 1

Respondent 4: 1

Respondent 5: 2

Respondent 6: 1

3. I am responsible for protecting [forests, rivers, or streams].

Respondent 1: 1

Respondent 2: 5

Respondent 3: 5

Respondent 4: 5

Respondent 5: 2

Respondent 6: 6

4. If there is no fundamental change, environmental problems will be getting worse and worse within the coming years.

Respondent 1: 5

Respondent 2: 5

Respondent 3: 6

Respondent 4: 6

Respondent 5: 3

Respondent 6: 6

5. I know a lot of things about [forests, rivers, or streams].

Respondent 1: 1

Respondent 2: 3

Respondent 3: 4

Respondent 4: 4

Respondent 5: 3

Respondent 6: 5

Modified New Ecological Paradigm Scale (NEP) for Children

For each statement, circle a number that best matches how you feel.

1. Humans have the right to change to natural environment to fit their needs.

Respondent 1: 3

Respondent 2: 3

Respondent 3: 2

Respondent 4: 2
Respondent 5: 2
Respondent 6: 2

2. When humans disturb nature it often produces terrible results

Respondent 1: 4
Respondent 2: 3
Respondent 3: 4
Respondent 4: 3
Respondent 5: 2
Respondent 6: 5

3. Humans are greatly mistreating the environment.

Respondent 1: 2
Respondent 2: 5
Respondent 3: 4
Respondent 4: 4
Respondent 5: 4
Respondent 6: 4

4. Plants and animals have as much a right as humans to live.

Respondent 1: 5
Respondent 2: 5
Respondent 3: 5
Respondent 4: 5
Respondent 5: 4
Respondent 6: 5

5. Nature is strong enough to handle the bad effects of modern developed countries.

Respondent 1: 4
Respondent 2: 3
Respondent 3: 2
Respondent 4: 1
Respondent 5: 4
Respondent 6: 3

6. Nature is very delicate and easily harmed.

Respondent 1: 2
Respondent 2: 5
Respondent 3: 5
Respondent 4: 5
Respondent 5: 5
Respondent 6: 5

Appendix I

UNIVERSITY OF WYOMING

Vice President for Research & Economic Development
1000 E. University Avenue, Department 3355 • Room 305/308, Old Main • Laramie, WY 82071
(307) 766-5353 • (307) 766-5320 • fax (307) 766-2608 • www.uwyo.edu/research

February 11, 2015

Teddi Hofmann
Graduate Student
SMTC
University of Wyoming
Faculty Advisor: Dr. Ana Houseal

Protocol #20150211TH00659

Re: IRB Proposal "*Exploring the Impact of Pura Vida on Participant Engagement in Grand Teton National Park*"

Dear Teddi:

The proposal referenced above (proposal received November 11, 2014) qualifies for expedited review and is approved as one that would not involve more than minimal risk to participants. Our expedited review and approval will be reported to the IRB at their next convened meeting February 19, 2015.

IRB approval for the project/research is for a one-year period. If this research project extends beyond *February 10, 2016*, a request to extend the approval accompanied by a report on the status of the project (Annual Review Form) must be submitted to the IRB at least one month prior to the expiration date. Any significant change(s) in the research/project protocol(s) from what was approved should be submitted to the IRB (Protocol Update Form) for review and approval prior to initiating any change. Per recent policy and compliance requirements, any investigator with an active research protocol may be contacted by the recently convened Data Safety Monitoring Board (DSMB) for periodic review. The DSMB's charge (sections 7.3 and 7.4 of the IRB Policy and Procedures Manual) is to review active human subject(s) projects to assure that the procedures, data management, and protection of human participants follow approved protocols. Further information and the forms referenced above may be accessed at the "Human Subjects" link on the Office of Research and Economic Development website: <http://www.uwyo.edu/research/human-subjects/index.html>.

You may proceed with the project/research and we wish you luck in the endeavor. Please feel free to call me if you have any questions.

Sincerely,

Colette Kuhfuss

Colette Kuhfuss
IRB Coordinator
On behalf of the Chairman,
Institutional Review Board