

# Facing the Fear of Climate Crisis: Environmental Education's Contribution to Positive Youth Development and Emotional Resiliency

REPORT OF A MAJOR PROJECT SUBMITTED TO THE  
FACULTY OF ENVIRONMENTAL STUDIES IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF MASTER IN ENVIRONMENTAL  
STUDIES, YORK UNIVERSITY ONTARIO, CANADA

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Submitted July 28, 2016

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## Abstract

We are experiencing the threat of climate crisis, and for many this is causing emotional distress and a sense of powerlessness. For humans to be able to adapt and respond effectively we must build our capacity for critical action. This raises the question about the role of environmental education in supporting the development of confident, engaged young people who are emotionally resilient in the face of climate crisis. Thus, this project sought to answer the question “Are environmental education programs contributing to the positive development of young people?” Semi-structured interviews with environmental educators revealed that positive youth development assets, representing the interpersonal strengths, experiences, relationships, skills or values of young people, are being met through environmental education programs. A focused effort to include as many assets as possible in program design and goals would better help young people develop into resilient, engaged citizens. To assist educators in evaluating the number and level of assets an environmental program is contributing to, I developed two pilot assessments: *Program Self-Evaluation* and *Short-Term Participant Assessment*.

In response to the increasing emotional distress experienced as a result of the climate crisis threat, the second part of the project looked at the role of environmental education in relation to emotional resiliency. A survey with participants of a conservation program explored the emotional experiences pre- and post-program, with results demonstrating that these individuals are experiencing both positive and negative emotions in relation to their understandings of climate change and the ecological crisis. Responses also indicate participants are in possession of some level of emotional resilience, and divulged supports required to bolster or maintain this resilience. Based on these insights, and current literature, a list was generated highlighting methods and approaches that could enhance the ability of the environmental education field to address emotional distress. This paper reasons that environmental education is uniquely positioned to play a key role in the positive development of young, engaged citizens who are emotionally resilient in the face of our climate crisis.

## Acknowledgements

There were many stumbling blocks throughout this journey, thus I am honoured to acknowledge those who picked me up, dusted me off, and walked beside me.

The support of my fellow graduate students was a key component to completion. To my fellow MES graduate students who posted hilarious meme's about academia or offered insights and tricks of the trade, thank you! The laughter and distractions you offered kept me trucking along. I'd like to especially thank Jackie for sitting silently beside me in libraries; it really is incredible the amount you can get done when you don't want to be the first to stop. And to Katherine, a first year MES student I hardly knew, I am offering a huge round of applause and grateful hug for your support and encouragement from afar. You helped me feel like I wasn't alone in this. And a high five for your excellent editing abilities! To my awesome past roomies, Connor, Cyril and Amy, Tara, Meredith – thank you for all your encouragement, kicks in the butt, feedback, laughter and socializing! You made it bearable to be a student in Toronto. Connor deserves a personal acknowledgement too, for helping my brain wrap itself around graphs. To the wonderful Bernadette – who took the time to print this and hand it in for me – you are an incredible person who unselfishly offers joy, generous love, and stalwart support. I am a better person for knowing you.

To the environmental educators who willingly offered their time and insights. I realize your time is precious, and you are likely overworked. I thank you for sharing your passion for educating and the environment! It was a pleasure and an inspiration to speak with you.

I offer my gratitude to my life partner Andrew for believing in me, and telling me I was doing a great job even when I only wrote one sentence after twelve hours in front of the computer. I am deeply grateful to my sister Michelle; thank you for the time and dedication you gave to helping me edit, find articles, and fix all the nitpicky stuff in the final draft. I couldn't have done it without you. A laughing thank you to my Dad for offering to fill the unglamorous job of 'nag' in the final pressure-filled weeks. I send heartfelt love to my awesome Mom for easing the multitudes of pain I experienced by giving much needed neck and upper back massages, a listening ear, and numerous hugs.

Last, but not least, I must say thank you to those who have gave their knowledge and insights freely. Leesa Fawcett, I am honoured to call you my supervisor and my friend. You always offered a smiling face, eager support, and a friendly ear when I needed it. You managed my constantly changing ideas and timelines beautifully, and helped guide me into streamlining my thoughts while keeping all that I wanted to include. For that I am indebted.

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## Foreword

Just last week, I read another article in the news about melting ice caps and diminishing ice flows. My stomach dropped, my heart felt heavy, and I felt at a loss. We have entered an era in which the challenges of climate change will not be escaped, thus it is imperative we acknowledge that community is essential, awareness and education pertinent, and action a necessity if we hope to adapt and thrive.

My personal interest lies in building strong, resilient communities that are host to active and engaged citizens capable of carrying the environmental justice torch and creating a world in which humans, non-human others, and the natural world co-exist in a balanced and life-sustaining way. I recognized early in my career and academic life that to achieve this I would need to get my feet wet in a variety of so-called ‘fields’ of knowledge, thus I consider myself to be an inter-disciplinarian. This also means I am a strong proponent for that approach in both education and research. Too often we fall into silo’s, staying within our own little universe of knowledge, and consequently missing opportunities to learn from and share knowledge with other fields that can connect to our own. Nature doesn’t work like this, so why do we? As a response, or resistance, to this tendency, my final project paper spans numerous academic “fields”, exploring the intersections of positive youth development, mental health and well-being, social action and environmental education.

Unlike many environmental activists, I meandered my way into the environmental justice movement without one of those gloriously touted “a-ha” moments. I don’t have a specific scenario that I can look back to and say “*that was when I decided to take action*”. This doesn’t mean I do not invest myself as deeply as those who can identify that specific moment. This lack of ‘moment’ also does not preclude me from feeling deep sadness and despair at the state of our current ecological health. Yes, I believe the world is full of hope and action, yet we are constantly bombarded with the challenge of climate change in a way that can instill fear, hopelessness and feelings of being overwhelmed. Grappling with these emotions inspired my interest in the emotional health of our society as we begin to fully grasp the extent of climate change and its consequences.

The dual nature of my project came about unexpectedly; it originally began solely focused on youth development and environmental education. During one of my last courses, on Ecopsychology, I read *Beyond Ecophobia: Reclaiming the Heart in Nature Education*, and Sobel’s (2006) valid argument about not teaching the big environmental issues until at least the mid-teens planted a seed. When I began my research on positive youth development I couldn’t help but be side-tracked by articles that addressed the emotional toll that fires and floods were having on people. As I delved deeper, the flicker of simple curiosity burgeoned into a full-fledged opinion that hammered at my brain until I acknowledged it. These questions wouldn’t go away: Are environmental education programs for young people even considering the emotional consequences of learning about the degradation and destruction of our natural home? Are we providing adequate emotional learning so that those jumping in and taking on the challenge of change can ensure they maintain their emotional well-being? Is the reason we see so many people hide away from, or not acknowledge, the severity of the climate change problems connected to a lack of acknowledging our conflicting emotions? Isn’t emotional intelligence and well-being part of positive youth development; why is it not fully addressed?

Laying heavy on my heart and brain, these questions ultimately inspired a second project to emerge. In the following pages you will read about environmental education's impact on positive youth development, and my thoughts on the importance of including emotional resiliency as a key objective in environmental education programs. I hope that you will see the connection I am making, and also reflect on your own emotional well-being under the umbrella of climate crisis. I think we can agree on the necessity of support at a time when we are faced with the human species' biggest social, emotional and environmental challenge. Let's start connecting again.

The area of concentration for my Master's degree was "Environmental Education for Empowering Action". My aim was to explore various frameworks of environmental education to determine how and why it is suited, or not, to inspiring and empowering individuals to take action in the face of our climate crisis. This current project fully contributes to that area of concentration and relates to all three of my components: Environmental Education Praxis; Community Organizing and Social Action; and Worldviews of the Environment and Human-Nature Relations. An aim of the project was to integrate theory with practice, by conveying positive youth development knowledge in an accessible and beneficial assessment tool that is also informed by environmental educators and programs. The two parts of the project addressed the questions of social action, focusing on the emotional and social attributes necessary to building an empowered ecological citizen. Specifically, I explored environmental psychology and child development theories, weaving together their connection in building resilient young people. The interviews and literature uncovered the importance of understanding how various worldviews affect our human-nature experiences. The knowledge I gained in coursework on this topic was reflected and enhanced in my discussions with educators on different program pedagogies, with a clear example being the differences between religion and spirituality. This project also supports my Environmental/Sustainability Education Diploma by focusing on environmental education's impact on the development of young people and emotional resiliency.

## Structure of Project Report

My final project report consists of two separate components encompassed by the umbrella theme of “Facing the Fear of Climate Crisis”. To provide context I begin with a brief history of environmental education and define key terms. I then move on to the first component: Environmental Education and Youth Development. This is a project that explores how environmental education is contributing to the positive development of young people, thus creating engaged and resilient youth capable of managing the climate-related challenges ahead. The output of this project is two pilot assessment tools that non-formal environmental education programs can utilize to inform their structure and content, and to assist in increasing their access to funding opportunities.

The second component: Supporting Emotional Resiliency through Environmental Education, is an exploratory short paper that examines the need for emotional learning to be addressed in environmental education so that we can build a resilient population capable of adapting in the face of dramatic changes in our ecosystem. This section includes a review of the current, and limited, literature on indirect psychological impacts of climate change, the survey results from participants in a community environmental education program, recommendations for future research, and implications for environmental education programs.

## Key Concepts and Terms

### Environmental Education

Environmental education has its roots in nature study and then the conservation movement (Stevenson, 2007; Fraser, Gupta & Krasny, 2015). It came to worldwide prominence after the 1972 UN Conference on the Human Environment in Stockholm. A few years later, in 1975 the Belgrade Charter provided the first international working definition of Environmental Education (EE), and stated that it “should be an integral part of the educational process, aimed at practical problems of an interdisciplinary character, build a sense of values, and contribute to public well-being” (Stapp et al, 1969, 31). Much of the definition was in line with what Stapp et al., (1969) had already developed: “environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution” (30). Shortly after the Belgrade Charter the Tbilisi Declaration (1978) provided guiding principles and key characteristics of EE.

Environmental education is unique in that unlike the claims of traditional pedagogy, it acknowledges it is inherently value-laden; EE embraces its role in shaping values and attitudes towards nature and encourages responsible environmental behaviour (NEEAC, 1996; Russell, Bell & Fawcett, 2000). Many see the goal of EE as that of developing engaged citizens, a term I will define below. While there is an umbrella definition of the goals and aims of EE, there exist numerous ideologies and pedagogical approaches that inform the field (Stevenson, 2007). Indeed, Sauvé (2005) has outlined a full 15 approaches, or currents, to EE, ranging from naturalist to problem-solving, from value-centered to



scientific. Fraser et al., (2015) have also explored conceptions of EE and highlighted various types and purposes of EE programs, which include community nature programs, formal education curricula, outdoor education, and experiential education opportunities.

Environmental education arose within the traditional Western paradigm of education, which is based on ideologies of rationalism and reductionism. This includes concepts such as mechanism, which views the natural world as a machine to be controlled, and the dualism of human/nature, which sets humans apart from nature (LeFay, 2010; Griffin, 1995; Haraway, 2003; Evernden, 1985; Harvester & Blenkinsop, 2010). However, there has been resistance to the Western paradigm of education in more recent decades, with a few environmental educators focusing on exploring holistic, spiritual, and deep connections through integrative and reflexive praxis (Starhawk, 2004; Fawcett & Dickinson, 2013; LeFay, 2006). Furthermore, while some EE programs may continue to follow the “banking” model of education outlined by Paulo Freire (2000), there is often more space in EE for an inquiry-based model that encourages critical reflection rather than pure knowledge transmission. Thus, the EE I advocate for is one where we go beyond simply “telling” students they “belong to the Earth” (Weston, 2004, p. 34), and instead encourage them to cultivate their own curiosity and connection to our natural environment.

Although many may initially think of education as a deliberately undertaken activity within a structured program or space, I reason that environmental education also occurs through media, campaigns, and government communication, in unconscious and un-intentional ways. While I would not place occurrences of this within the *field* of EE, I think it is important to acknowledge the influence that these other methods of environmental education have on individuals and society regardless of whether or not people have other access to EE. Educational discourses such as Popular Education also acknowledge that messaging received in our daily lives, beyond structured educational settings, has a very strong influence on our values, attitudes and behaviours, and so must not be discounted as an educational source (Freire, 2000).

While we can see that EE is a broad framework with a variety of approaches and methods for knowledge transmission, I use the term environmental education in this report to refer to non-formal but structured programs, unless otherwise stated. This includes any environmentally focused education program outside of the formal education system that involves some educational design and intentionality.

## Climate Change

Climate change is a term that most, if not all, people in the industrialized world hear on a regular basis, thus it is important to be clear about what I refer to when I write ‘climate change’ in this report. Put simply, our current experience of climate change refers to the overall warming of the planet at unprecedented rates, tied to the burning of fossil fuels and societal consumption patterns. While there are some individuals and groups of people who continue to deny the anthropogenic causes of climate change, the majority of the scientific community agree that the climate change we are facing is caused by human actions (Doran & Zimmerman, 2009; Pachauri et al., 2014; Oreskes, 2004). Specifically, the United Nation’s Intergovernmental Panel on Climate Change, comprised of top-rated climate scientists, acknowledges that “anthropogenic greenhouse gas (GHG) emissions since the pre-industrial era have driven large increases in the atmospheric concentrations of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and

nitrous oxide (N<sub>2</sub>O)”, and these emissions are what is causing climate change to occur (Pachauri et al., 2014, p. 4).

While the definition above addresses the scientific basis of climate change, I suggest that a more useable and effective definition of climate change involves an expansion of scope. So often when climate change is discussed, the meaning of the term is infused with both current and future potential impacts and consequences. These impacts have been well documented and clearly outlined, and include an increase in droughts, floods and fires, loss of biodiversity on land and in the sea, rising sea levels due to melting sea ice, and more (Parmesan, & Yohe, 2003; Pachauri et al., 2014; Warren, Arnell, Nicholls, Levy, & Price, 2006). These impacts create a feedback loop, compounding the effects of global warming and increasing the speed at which we will experience future impacts. Thus, when I use the term climate change in the following pages, I am using a broad definition, which includes both the basic understanding of the scientific processes of climate change *as well as* the knowledge or experience of the consequences for the ecological planet and our human species.

### Engaged Citizenship

As noted above, a desired result of environmental education is the development of engaged citizens who will take informed action to work towards a healthy and robust Earth and environment. So what is an “engaged citizen”? Riemer, Lynes and Hickman (2014) provide a clear definition - “members of a society who are aware of their rights and responsibilities in society and actively participate in shaping the system norms, resources, regulations and operations that comprise the foundation of their respective society” (p. 554). Further enhancing that definition, they identified three key characteristics of the engaged citizen. Such a person will: 1) have an awareness of how “different parts of the system interact and influence” other parts and themselves; 2) recognize they have influence on the system and its parts; and 3) “have the knowledge and skills to take effective action” (Riemer et al., 2014, p. 554). Interestingly, I find this very similar to Stapp et al.’s (1969) definition for environmental education noted above, minus the direct affiliation to ecology.

When we look at an engaged citizen within the environmental movement, we can suggest that they would have “a state of connection with the issues of climate change that concurrently encompasses cognitive, affective, and behavioural aspects” (Flora et al., 2014, p. 421). Thus, for the purposes of this project report, I use the term ‘engaged citizen’ to mean an individual who is aware of, and connected to, ecological issues, such as climate change and loss of biodiversity, and who actively participates in civil-societal systems to influence outcomes through their own or collective action.

### Resiliency

We are hearing more and more about resiliency, so what does that term actually mean? “Resilience is concerned with individual variations in response to risk”, and it is important to note it is not a fixed attribute; individuals can have different levels of resilience at different times of their life in response to changing circumstances (Rutter, 1987). Resilience occurs as a result of a set of skills, such as critical thinking, decision-making, and the confidence in one’s ability to find solutions and take action in future stressful situations.

A person is considered resilient if they have the “capacity for adapting to change and to stressful events in healthy and flexible ways. They show successful responses to challenges and use this learning to achieve successful outcomes” (Catalano et al., 2004, p. 102-103). Tugade and Fredrickson (2004) state that “psychological resilience refers to effective coping and adaptation although faced with loss, hardship, or adversity” (p 320), while Fawcett and Dickinson (2013) expand on that to include “the ability to tolerate, learn from, and transform negative experiences into a fuller, positive self-image, and to be able to engage with internal capacities of resourcefulness and renewal with social well-being in mind” (p. 161).

Across many definitions the three primary components of resiliency are learning, coping and adapting (Krasny, Kalbacker, Stedmen & Russ, 2015; Rutter, 1987; Fawcett & Dickinson, 2013; Tugade & Fredrickson, 2004; Catalano et al., 2004). Furthermore, we can see that critical thinking, decision-making, self-esteem and self-efficacy are key characteristics of resilient people, so we must ensure our EE programs provide opportunities to strengthen these skills and characteristics in the face of climate change realities. Resiliency is important in relation to EE because although individuals can learn about ecology, without resiliency they are unlikely to be able or willing to make a difference.

# Part I

## Environmental Education and Youth Development

### Purpose of Research Project

I chose to undertake a project primarily because I wanted my two years of higher education to have a demonstrable outcome that would benefit my community and my field of interest in a tangible way. Thus, the targeted goal of this component of my research project was tri-fold: 1) produce a useful tool for non-formal environmental education programs that can inform their program design and implementation and increase their potential funding streams; 2) further inform the academic literature with an examination of the intersection of environmental education, positive youth development and evaluation; and 3) bridge the gap between research/academia and practice to demonstrate the positive impact collaborative praxis can have in both areas.

The project was based on the research question “How do environmental education programs contribute to the positive development of young people?” This question required that I identify which assets or constructs within positive youth development are already being met by EE, and which ones EE *should* be contributing.

The goals of this project report are: 1) to help the reader understand positive youth development constructs and how they may be relevant to EE; 2) present the formulated assessment tools; 3) reflect on further improvements and implications of the assessment tool within EE; and 4) provide recommendations for educators, funders, and future research.

### Positive Youth Development

#### WHAT IS POSITIVE YOUTH DEVELOPMENT?

Positive youth development (PYD) considers the physical, intellectual, psychological, and social well-being of young people, which is influenced by multiple actors and settings, such as family, peers, schools, and neighbourhoods (Sesma, Mannes & Scales, 2006). Historically, research on youth development was approached through a problem-solving model, which focused on responding to or reducing problem behaviours (Theokas et al., 2005; Schusler, 2015). In more recent decades, research has shifted to an assets-based approach that focuses on strengths and resources of young people and their communities (Catalano, Berglund, Ryan, Lonczak & Hawkins, 2004; Benson, 2007; Sesma et al., 2006). This integrated

approach addresses the false assumption that young people are well prepared for adulthood just because they are “problem-free” (Schusler, 2015).

## POSITIVE YOUTH DEVELOPMENT’S RELEVANCE TO EE

In my review of literature that discussed the effects of environmental education programs on positive youth development, I found only a few articles dealing with this relationship. This is likely due to a few factors, including the field of EE not prioritizing youth development outcomes in the past (Krasny et al., 2013). More recently though, “an increasing number of EE practitioners are focusing on integrating community concerns into their programs” (Krasny et al., 2013, p. 2). While still a new research area with limited scope, there is growing acknowledgement that EE can provide, and is providing, opportunities for positive youth development, through its pedagogy, ideology, and approach (Schusler, 2015; Riemer et al., 2014; Volk & Cheak, 2010). My hope is that the assessment tool I have developed can demonstrate how environmental programs are *already* contributing to young people’s development into engaged citizens. By understanding positive youth development constructs, educators will be able to better assess their program design and make adjustments that could improve their youth development outcomes (Schusler, 2015).

One example of recent research is a case study from Hawai’i that demonstrated improvement to students’ “critical thinking skills; reading, writing and oral communication skills; familiarity with technology; self-confidence; and citizenship competence” (Schusler, 2015, p. 117), which are all skills that fall within positive youth development constructs (Catalano et al., 2004; Benson, 2007). These results follow the reasoning of Eccles & Gootman (2002), who argued that critical thinking and reasoning skills; good decision-making skills; confidence in one’s personal efficacy; optimism coupled with realism; connectedness or perceived good relationships and trust with peers and adults; and commitment to civic engagement, are all obtainable through environmental action. One growing area of interest that is taking the lead is around how EE can foster well-being of youth from underprivileged and stressed communities (Krasny et al., 2013)

In their evaluation of an EE stream within a formal school setting, Volk & Cheak (2010) found their results added “to the evidence that student involvement in [the environmental instruction stream] develops self-confidence and feelings of improved self-esteem that might not be observed as a consequence of a more traditional school program” (p. 16). Lastly, while longer-term environmental education methods, such as those in the example above, have been shown to improve developmental assets, there are also benefits in shorter-term, high-density, and intensive activities, which can have a significant impact on youth development in relation to a young person’s self-understanding (Riemer et al., 2014).

## THREE POSITIVE YOUTH DEVELOPMENT FRAMEWORKS

### Framework 1: 40 Developmental Assets – Search Institute

Just over 25 years ago, The Search Institute, an organization that researches the “lives, beliefs, and values of young people”, “released a framework of developmental assets, which identifies a set of skills,

experiences, relationships, and behaviors that enable young people to develop into successful and contributing adults” (Search Institute, 2016, “Developmental Assets”). The assets identify environmental and interpersonal strengths that contribute to the health and education outcomes of young people (Benson, 2007). They represent experiences, relationships, skills or values that are considered to “operate similarly for all youth” (Sesma et al., 2006, p. 282). In consideration of different developmental stages, the Search Institute conceptualized a different set of assets for children, youth, and young adults and have developed a survey to assess asset levels for all groups except pre-Kindergarten (Scales, 2014).

The 40 developmental assets for youth aged 12-18 are grouped into eight categories, which are further divided between Internal and External Assets (see *Table 1: Search Institute’s Developmental Assets*). External Assets are those influenced by outside actors, while Internal Assets emerge from within the individual. The full description of the 40 Developmental Assets listed below can be seen in Appendix A.

**Table 1:** Search Institute’s Developmental Assets

INTERNAL ASSETS			
COMMITMENT TO LEARNING	SOCIAL COMPETENCIES	POSITIVE VALUES	POSITIVE IDENTITY
Achievement Motivation	Peaceful Conflict Resolution	Caring	Personal Power
School Engagement	Cultural Competence	Integrity	Sense of Purpose
Homework	Resistance Skills	Honesty	Self-Esteem
Bonding to School	Planning & Decision Making	Equality & Social Justice	Positive View of
Reading for Pleasure	Interpersonal Competence	Responsibility	Personal Future
		Restraint	

EXTERNAL ASSETS			
SUPPORT	BOUNDARIES AND EXPECTATIONS	EMPOWERMENT	CONSTRUCTIVE USE OF TIME
Family Support	Family Boundaries	Community Values Youth	Creative Activities
Positive Family	Neighbourhood Boundaries	Youth as Resources	Youth Programs
Communication	High Expectations	Safety	Time at Home
Other Adult Relationships	School Boundaries	Service to Others	Religious Community
Caring Neighborhood	Adult Role Models		
Caring School Climate	Positive Peer Influence		
Parent Involvement in			
Schooling			

### Framework 2: Categories of PYD Assets - Committee on Community-Level Programs for Youth

In 2011, The National Research Council and Institute of Medicine’s Committee on Community-Level Programs for Youth defined PYD Assets with four broad categories and an outline of indicators, which are included in *Table 2: IMCC Categories* below (Schusler, 2015). Schusler (2015) also provided tangible examples of some asset indicators later in the chapter, which I added to the table in a third column. The examples provided are an excellent resource for educators who may be unclear on indicators that represent the constructs.

**Table 2:** *Institute of Medicine’s Committee on Community-Level Categories*

<i>PYD Asset</i>	<i>Description</i>	<i>Examples</i>
<b>Physical development</b>	<ul style="list-style-type: none"> <li>• Good health habits</li> <li>• Good health risk management skills</li> </ul>	<ul style="list-style-type: none"> <li>- e.g., nutrition, fitness</li> <li>- e.g., Health risk management</li> </ul>
<b>Intellectual development</b>	<ul style="list-style-type: none"> <li>• Knowledge of essential life skills</li> <li>• Knowledge of essential vocational skills</li> <li>• School success/content knowledge</li> <li>• Rational habits of mind – critical thinking and reasoning skills</li> <li>• In-depth knowledge of more than one culture</li> <li>• Good decision-making skills</li> <li>• Knowledge of skills needed to navigate through multiple cultural contexts</li> </ul>	<ul style="list-style-type: none"> <li>- e.g., job preparation, value of hard work</li> <li>- e.g., video production, conducting scientific experiments, public speaking</li> <li>- e.g., energy efficiency, plant science, earth science, butterfly metamorphosis</li> </ul>
<b>Psychological and emotional development</b>	<ul style="list-style-type: none"> <li>• Good mental health, including positive self-regard</li> <li>• Good emotional self-regulation skills</li> <li>• Good coping skills</li> <li>• Good conflict resolution skills</li> <li>• Mastery motivation and positive achievement motivation</li> <li>• Confidence in personal efficacy</li> <li>• “Planfulness” – planning for the future and future life events</li> <li>• Sense of personal autonomy/responsibility for self</li> <li>• Optimism coupled with realism</li> <li>• Coherent and positive personal and social identity</li> <li>• Pro-social and culturally sensitive values</li> <li>• Spirituality or a sense of a “larger” purpose in life</li> <li>• Strong moral character</li> <li>• Commitment to good use of time</li> </ul>	<ul style="list-style-type: none"> <li>- e.g., self-confidence, open mindedness</li> <li>- e.g., patience, persistence, paying attention</li> <li>- e.g., adaptability</li> <li>- e.g., initiative, intrinsic reward</li> <li>- e.g., how to enact change</li> <li>- e.g., vision, thinking ahead</li> <li>- e.g., balancing work load</li> </ul>
<b>Social development</b>	<ul style="list-style-type: none"> <li>• Connectedness – perceived good relationships and trust with parents, peers, and some other adults</li> <li>• Sense of social place/integration – being connected and valued by larger social networks</li> <li>• Attachment to pro-social/conventional institutions, such as school, church, non-school youth programs</li> <li>• Ability to navigate in multiple cultural contexts</li> <li>• Commitment to civic engagement</li> </ul>	<ul style="list-style-type: none"> <li>- e.g. teamwork</li> <li>- e.g., when to “talk street and [when to] talk correctly”</li> </ul>

Adapted from Schusler, T. (2015). “Environmental Action and Positive Youth Development” In Monroe, M. C., & Krasny, M. E. (Eds.). (2013). *Across the spectrum: Resources for environmental educators*. Washington, D.C.: NAAEE

### Framework 3: PYD Constructs – Catalano et al., 2004

Catalano et al. (2004) did an excellent job of identifying and defining 15 objectives of PYD that are consistently found within various programs and measurements. Many of these objectives were incorporated into the assessment tool, and will be explored more in depth in later sections, although you can see a table of definitions and descriptions in Appendix B. According to Catalano et al. (2014, p. 101-102), positive youth development programs will achieve one or more of the following 15 objectives:



1. Promotes bonding
2. Fosters resilience
3. Promotes social competence
4. Promotes emotional competence
5. Promotes cognitive competence
6. Promotes behavioural competence
7. Promotes moral competence
8. Fosters self determination
9. Fosters spirituality
10. Fosters self-efficacy
11. Fosters clear and positive identity
12. Fosters belief in the future
13. Provides recognition for positive behaviour
14. Provides opportunities for pro-social involvement
15. Fosters pro-social norms

## MEASURING EE PROGRAMS

There has been strong criticism on the lack of literature and research addressing environmental education evaluations and assessments (Stern, Powell, & Hill, 2014; Monroe, 2010). Studies that have reviewed existing evaluations and assessments note their poor quality of standards (Fleming & Easton, 2010), and there have been calls for the creation of more consistent and strategic evaluation methods (Carleton-Hug & Hug, 2010). Another noted caution around the current assessments in EE is the primary focus on content and learning outcomes, a theme some researches argue is detrimental to solid evaluations given the complex nature of assessing behavioural change (Wals, & van der Leij, 1997; Thomson, Hoffman, & Staniforth, 2003).

Another challenge of measuring EE programs is that many environmental educators are not highly trained at evaluation; their passion lies elsewhere. Indeed, in one study “not a single respondent could suggest such an indicator [to measure how values shift or behaviors change], and all agreed that work in this field is sadly lacking” (Thomson et al., 2003, p 32). This situation was reflected in my own experience interviewing environmental educators. Interviewees struggled to identify indicators for the various developmental asset constructs, although with a bit of thought they were able to produce a few.

Measurement tools for EE have, in the past, included: the Ecological Attitude Scale (Maloney & Ward, 1973), the Environmental Paradigm Scale (Dunlap & Van Liere, 1978), and the Environmental Concern Scale (Weigel & Weigel, 1978). Like most other evaluations for EE programs, these only explored values, attitudes, and behaviours *towards* nature. More recently, The North American Association for Environmental Education (NAAEE) created a Framework for Evaluating Environmental Literacy, which tests the skills and knowledge of young people (2011). However, research measuring an EE program’s impact on an individual’s development as a *person* is limited. As such the intention of this research is to explore and apply developmental assets frameworks as a way to evaluate EE programs.

## Assessment Tool

### INTRODUCTION

I had a clear idea of what I wanted to produce with this project: an assessment tool that can be used by any EE program of any duration to demonstrate developmental assets growth in their youth. I also had



intended to pilot the tool with one or two programs. However, everything proved to be a bit more complicated and challenging than initially thought, and due to a variety of reasons such as accessibility to programs, and the scheduling and length of programs available, the pilot was not feasible. Additionally, the assessment has taken on a different format than initially envisioned, focusing more on evaluating the program, rather than the growth of assets in young people.

Although a long-term assessment that demonstrates the growth of PYD assets in EE youth was my initial intent, as the project progressed I became hesitant to pursue the goal for several reasons. First, after my interviews with educators, it became apparent that the majority of Developmental Assets as identified by the Search Institute are met through various EE programs. The Search Institute has already developed a full, validated survey for assessing these assets in the general population. While I believe their survey is inaccessible to most EE programs due to high cost, there is potential for researchers to use it. Further research also revealed the potential for EE programs to gain access to longer-term evaluation resources.

Second, the nature of personal development implies a long-term change for the better. Many of the constructs found in the three frameworks proved difficult to assess in programs that are short-term (less than six months). This resulted in having to acknowledging the limitations of an assessment that would be useful for short-term programs, specifically by not including some of the asset constructs. As a result, instead of one assessment tool that would demonstrate the *growth* in assets in the young person, I developed two separate tools that can demonstrate in different ways how an EE program contributes to a young person's PYD assets, namely by providing experiences and settings that support it. These two will be described in detail below. I still believe the envisioned assessment tool would be beneficial for programs that have long-term participation, and hope that I can either work on this in a professional capacity or support organizations to develop their own, or that researchers provide resources to educators.

It is important to note that because the two pilot surveys developed here include only a subset of constructs from the three different youth development frameworks I discussed above, the reliability and validity of any other measurement tool is not transferable to the ones presented here. As a result, these assessment tools are valuable primarily for environmental educators and programs.

## METHODS FOR DEVELOPMENT OF ASSESSMENT TOOL

### Semi-Structured Interviews

Although I have both professional and personal experience within the environmental education field, I wanted to limit and “check” my own biases, assumptions and beliefs. I also thought it would be helpful to hear from those ‘on the ground’ who could potentially assist in identifying indicators for various assets and share related examples. Thus, I included interviews into my project design with the initial goal to interview 10 different educators. While I was not quite able to reach that goal, I did conduct seven semi-structured interviews with eight environmental educators. The ninth interviewee cancelled due to illness. All interviews were one-on-one, except for a single interview that included two educators.

The educators, three females and five males and ranging in age from early 20s to early-40s, had a variety of educational backgrounds and all currently work in the environmental education field in and around Vancouver, BC. The interviewees represented a variety of environmental education programs, from those in which EE is more of a background and/or place setting for their program, to those with a targeted focus on nature education and personal development (for program descriptions see Appendix C). As my research project was designed to assist out-of-school programs the majority of interviewees (seven) were from programs external to the formal education system. However, because I wanted to ensure I did not miss any insights and/or biases from that perspective, one interviewee came from a formal education system. With the assessment tool intended to be available for all types of programs that included an environment component, I wanted to ensure I reached programs that had different structures, goals, and focus. I thought that this selection of participants was a fair representation of programs that met my broad definition of environmental education.

Length: Each interview lasted approximately one (1) hour, although the interview with two educators lasted for an hour and a half.

Selection: Having worked with and been involved in the environmental field, I used the snowball method to secure interviews, beginning by contacting individuals I knew. If they were unable to participate, or did not feel qualified to do so, these contacts forwarded my request to other educators they felt would be suitable. I personally knew three of the eight participants. <sup>1</sup>

The interviews were transcribed and reviewed for constructs of youth development and indicators of these constructs.

## Results

I received great insight and comments from the educators interviewed. Their examples affirmed my belief that EE is already contributing to the positive development of young people. Some educators also provided interesting viewpoints and anecdotes demonstrating positive benefits that are more challenging to place within the specific constructs. Overall, three key themes arose from the interviews that were not directly related to positive youth development: 1) Program Specificity; 2) EE as privileged; and 3) EE as able to meet all learning styles, which I will discuss before moving on to assets.

### 1) Program Specificity

Many of the educators struggled with the broadness of my definition of EE, and the inclusion of such a wide variety of programs. As illustrated by the following comments, educators were unsure whether their thoughts would be applicable to *all* EE programs, purely due to the field's variety of methods, approaches and structures:

*"I think our program does some pretty specific things that others might not because we see kids on a regular basis and we see their growth"* – Alice

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<sup>1</sup> Ethics approval from York University was obtained. To maintain confidentiality, I have given each educator an alternative name.

*“...if you are going on a trip - that could be outdoor recreation or it could be environmental education but it’s not necessarily the same thing”- John*

*“...it really depends on the program itself and how it’s structured and what the outcomes are” – Chris*

*“I guess it’s hard to speak about EE broadly. I don’t have experience with all frameworks and I can’t say I would agree with all forms of environmental education.” - Tim*

John emphasized that an instructor’s approach is a key factor in a program’s impact, including, *“whether they do a debrief session and how they do them. Whether they include the parents in helping the kids pack or whether they encourage them to let the kids be independent.”*

I do recognize that developing an assessment that is suitable for utilization by a variety of EE program methods and designs is difficult. This challenge is likely due, in part, to the fact that programs have different goals and aims. One program may focus on social and environmental justice while another may focus purely on forest exploration. The assets that these programs will best contribute to would differ. The intention of my assessment tool is to provide an overview of PYD in a program. Consequently, I would suggest that programs approach the assessment as a window into what they are doing well, and to identify areas where they may not be focusing on for now but may want to incorporate in the future.

## 2) EE as privileged

Interestingly, five of the interviewees suggested that EE was a very privileged domain, both from a cultural and socio-economic standpoint.

*“I also see a lot of EE is mostly only accessible to middle class white people. I find EE to be a mostly pretty privileged thing that only certain people can access” - Alice*

*“We have issues of the fact that a lot of environmental non-profit NGO’s are predominantly white folks.” - Michelle*

*“I think it’s important to make it accessible to everyone, so that being an “environmentalist” isn’t to be this ‘warrior’ almost, but to be in our everyday. Make it accessible as possible so that it does work within whatever frameworks your life allows it to work within” – Chris*

Chris elaborated with an example around how he felt the messaging in education prescribes what ‘healthy’ food looks like; his cultural food is very different from this image, and Chris has struggled with that non-inclusive educational message. This example, as in the quotes before, brings forth an important consideration, both in a broader policy and education sense, but also when looking at PYD. The socio-economic privilege, potential exclusion, and inaccessibility of programs could impact the outcomes of EE on PYD. For example, youth who come from middle class neighbourhoods may already have higher numbers of assets and thus would not have as much of a demonstrable growth as youth from disadvantaged neighbourhoods.

## 3) EE meets all learning styles

The multitude of ways in which EE provides an alternative method of learning and reaches those who do not fully engage with the traditional education system was brought up numerous times throughout all

interviews. Often it was in comparison to what happens or is expected in the traditional formal schooling system.

Many mentioned the different skills sets that could be obtained within EE

*“I feel EE offers a different skill set, and different skill base. Like maybe access to different choices. Because you're being outside and being in a lot of different situations when you really have to think fast, and use different skills and really have to use your body” - Alice*

*“There is a lot more opportunity for skills and talents and for people.” - Michelle*

It was also suggested that for those students who may not succeed (ie grades) in the structure of the formal system, there is space for them to do so in EE.

*“It gives opportunity for kids where the public school, regular school, that doesn't work. It enables them to see they totally competent in other skills and they don't have to focus on what they are learning in schools because they can do all these other things.” - Alice*

*“EE opens more possibility and opens different forms of engagement. So options exist for someone who probably thinks options don't exist within a space where everything is prescribed.” - Michelle*

Matthew indicated that EE tends to “recognize different learning types and different learners...respond to different people in different ways.” Paul added to this thought,

*“The kids that don't fit in the mainstream education, they love their communities, sense of community [in the school EE program]. They love being in nature. I struggle though to get anything out of them. They don't write anything. They don't do any work for me but they love being in this program. They love the sense of what they are doing and they'll tell me all the time they don't want to leave...I would say they don't do the mainstream - they don't do the test or write the papers.”*

Paul proceeded to give an example of a group of young boys who worked on a project on their own time over March Break. He gave them the keys to the shed and they produced a windmill for Earth Day. They didn't submit the required journal to go with it, but “*they bought the stuff, and they were super engaged...they were into it, they loved it!*”

This example feeds into the idea that students are personally motivated to learn in EE programs, a comment that arose a few times and could relate to the asset ‘engagement in learning’. For example, in a comparison John made on the extrinsic motivation found within the formal school system around grades, deadlines and diplomas, he stated, “*EE tends to be more like helping kids find their own curiosity and following it. I think EE helps a person follow their intrinsic motivations... what makes them happy*”.

Happiness also came up in relation to outdoor location.

*“Participants directly stated that being outdoors, being in the environment put them in a place where they were more comfortable where they were more - they felt happier” - Matthew*

Responses like these make me truly believe that the methodology of some EE programs can provide the answer to our broken school system. There are many calling on the radical transformation of our education system...maybe we should start with EE.

**ASSESSMENT TOOL DEVELOPMENT**

I structured half of the interviews around the Search Institutes 40 Developmental Assets, and the other half around Catalano et al.'s (2014) constructs of PYD. I hoped to gain insight into potential constructs and indicators from both frameworks, in order to better develop a comprehensive assessment and identify themes. From the eight interviews, I obtained fairly consistent responses indicating which assets/constructs are directly applicable to EE programs, which could be applicable but are too dependent on variables such as program method, length, location, goals, and those which are unlikely to be reached through EE. The assets that were ultimately included in the two assessment tools were selected from the constructs/assets that the educators identified as being applicable to EE specifically. Some groupings of assets changed, and some were renamed or combined if they reflected similar characteristics.

While I will include a selection of supporting comments from interviewees for each asset or construct, a more comprehensive table of quotes can be viewed in Appendix D, where there is excellent data and insight.

Of the 40 Developmental Assets, those which interviewees thought could not be *guaranteed* through EE are listed in *Table 3: Assets Not Guaranteed*. However, I have added an asterisk beside assets that educators thought *could* be met through many programs, but would depend on the goals, priorities, and structure of each program.

These assets were not included in the general assessment. However, this does not mean that programs that *do* meet these assets shouldn't address them in their own evaluations, and include these in funding applications.

It is noticeable that the majority of the assets not guaranteed to be addressed in EE are External, which is understandable considering they arise from outside sources. Thus, it can be argued that EE programs are most able to build young people's Internal Assets, or those that are focused on personal development.

**Table 3: Assets Not Guaranteed**

<b>External</b>	Support	Family Support Positive Family Communication* Caring Neighbourhood Parent Involvement in School*
	Empowerment	Community Values Youth* Youth as Resources* Service to Others*
	Boundaries & Expectations	Family Boundaries Neighbourhood Boundaries
	Constructive Use of Time	Religious Communities <sup>t</sup> Time at Home
<b>Internal</b>	Commitment to Learning	Homework Reading for Pleasure
	Positive Values	Restraint

Similarities can be seen when we look at Catalano et al.'s constructs – the constructs related to external influence were more conflicted for educators, than ones that were internally based. The constructs felt by most to be more difficult to guarantee through EE include: provides opportunities for pro-social involvement, fosters pro-social norms (only when using the definition provided; educators felt pro-social norms by their own definition could be met, i.e. those not specifically related to talking about drugs and sex). The remaining constructs of PYD were felt to be developed through environmental education.

There were some excellent thoughts from the educators on specific assets and constructs, and the assets below are those that educators believe can be met by Environmental Education. While the quotes may have arisen due to the presentation of other constructs/assets, I have placed them within my defined (and reorganized) categories: Skills, Competencies, Positive Participation in the World, Positive Identity, and External Assets. These categories and the assets listed in each are an amalgamation of the various frameworks introduced above, with restructuring based on the interviews; some assets have been combined, some re-titled.

## SKILLS

This category relates to assets that can be learned or developed in a young person, and include: creativity, planning and decision-making, resilience, and self-determination/critical thinking. The more they are exposed to opportunities that support these assets the stronger the skill will become in their personal behaviour.

### Creativity

When we think of creativity in education, we often think of art, music and drama. Within EE, however, creativity can expand into anything. Flexibility in lessons means that an

*“EE program has more time for creativity. It gives the opportunity for doing something different that you wouldn't find in a regular school. We sing a lot and do plays and stuff like that. We are crafting a lot. We are using our hands, which is different. We are using knives...” – Alice*

Many of the educators also highlighted the need for students to be creative in problem-solving (i.e. shelter building, gardening plans). *“Because it's an activity (versus school) there's a lot more space for creativity when something is novel and exciting.” – Michelle*

These statements and insights identify three unique aspects of EE programs and/or curriculum that allow creativity to emerge in young people: time, space, and opportunity.

### Planning and Decision-Making

This asset as defined by Search Institute is a “young person knows how to plan ahead and make choices” (2007, n.p.). This does not give any depth into what the decision making process is about, for example whether the decision has true repercussions. Based on the answers from educators this difference in consequence/impact of decision-making could be important.

When asked if EE contributes to decision-making in young people Alice answered,

*“I say so. It’s planning ahead for how much food to bring and how much water and what clothing they should wear based on the weather. I mean the parents I think do some of that, but it’s the kids that will experience being really cold if they don’t have enough clothing.”*

She highlighted that the repercussions of decisions are distinctly felt by the young person, which would encourage them to think about their decisions in the future. It also suggests that the decisions being made affect the young person in real life, a thought taken up by John and Sarah who said,

*“A good EE program will [contribute to decision-making skills]. And they make real decisions, not artificial decisions. Like who is navigating for the day, who’s cooking...”* (John),

*“...should we kill this rooster...”* (Sarah),

*“...versus you can do this worksheet or that work sheet - because that doesn’t affect anybody else.”* (John)

These comments highlight the question of whether the decision being made is simply a choice between two options, with no real repercussion or impact, can it be considered a skill or asset? Educators indicated that the type of decision-making and planning that happens in some forms of EE programs (particularly those based in the outdoors) are those that truly bring a positive learning to the young person. Thus, when thinking of planning and decision making as an asset we should also consider the significance or magnitude of the decision.

## Resilience

The concept of resilience was introduced in the Introduction of this report, but as a quick reminder it means that an individual is capable of experiencing a challenge and can come back from it with new knowledge or strength. While educators struggled to identify how we could recognize resilience within their students, they all agreed that EE plays a strong role in building resiliency.

*“I would say, looking at the students who have gone through the program, that they are resilient. I think in the sense that they become more whole beings and they become critical thinkers a bit more. I think they start to understand that they’re seeing things and understanding things that are important and that empowers them. I think that builds resiliency.”* – Paul

Some educators even acknowledged that it is a key goal of their program:

*“Resiliency is one of the identified features of our program, that’s what we’re in for really, to build up resiliency in youth.”* - Matthew

*“Resilience is ultimately what I think a lot of this work, nature connection, provides for people.”* - Tim



## Self-determination/Critical Thinking

Catalano et al. (2004) defined self-determination as “the ability to think for oneself and to take action consistent with that thought” (p. 105). Critical thinking follows this, and means one is able to objectively assess a situation and form your own thoughts and ideas. I placed the two together because they are interconnected and relate, as both highlight not “following the herd” and having the courage to voice one’s own thoughts and opinions.

EE *should* ensure it fosters self-determination and critical thinking otherwise, as Chris argued, “*it runs into the danger of just becoming almost like a cult, like - ‘this is the way it’s supposed to be’.*”

Environmental issues are especially complex, often involving multiple interests around social, economic, environmental and cultural issues.

Paul also supports the idea that EE develops critical thinkers, giving the reason why it may be especially effective:

*“there’s a transformation and I think the environmental education is a piece of it because it’s relevant to the world they’re living in and to what they’re going to inherit, essentially. So they start to understand the world in a different way.”*

Tim shared that he has received...

*“...that feedback from parents...that you are cultivating critical thinking. I think the way we do that is that we are so question based. When kids ask me a question I answer with another question that makes them ask another question and then they answer and are like ‘oh!’.”*

Thus it can be the structure and pedagogy of EE that fosters critical thinking, or the topic itself and its relevance to lived experience.

## COMPETENCIES

This category includes assets that relate to the functioning of a young person, through their emotional, cultural, social and behavioral abilities.

### Cultural Competence

This asset relates to the “knowledge of and comfort with people of different cultural/racial/ethnic backgrounds” (Search Institute, 2007, n. p.), and would be reflected by a young person’s acceptance and support of differences.

While Alice thought that EE’s ability to promote cultural competence “*might be program specific*” she also gave an example of how her program does go about it. “*I know in our program we have a lot of stories from different cultural backgrounds.*”

In contrast, John stated he...



*“...think[s] a lot of EE programs end up at some point talking about other cultures and how other cultures have used plants or animals or have overcome certain challenges, or talk about great rites of passage, coming of age rituals and sharing stories. So maybe in a more real way, in an applicable sort of context.”*

Chris adds to this conversation by bringing up the ability for EE to “challenge other levels of hierarchy, of western knowledge being the dominant over other knowledges that have been around for a long time.” He argued that within the traditional school curriculum “you don’t hear about them [other cultural knowledges] here in North America”, but suggested that this missing piece could potentially be found in EE.

One thing EE programs should be very cautious about is teaching about other cultures not their own in a way that continues the colonialism characteristic of our Western history. When bringing other cultures into environmental education, it is beneficial to include other voices and worldviews.

### Social Competence

This asset is based on the set of interpersonal skills that facilitates friendships or relationships, including the ability to “integrate feelings, thinking and actions” (Catalano et al., 2004, p. 103) into positive interactions. This was one asset that educators were able to provide very clear examples of behaviour within their programs that matches this asset.

*“I know people who come into those programs or space-place learning or in very particular constructed programs who are kind of closed up individuals who don’t feel belonging or do not interact very well with others. But many years later or even at the end of their programs...they are able to interact more openly. You do see changes, but minor changes depending on the program as well.” – Chris*

*“The teachers would comment about what a great camp. [About] a person who might be a bit socially outcast – ‘wow, what a great camp they had’. You see how they interact, they’re talking to people, they were engaging.” – Paul*

### Emotional Competence

Emotional competence is the ability to regulate and express emotional experiences. It indicates a young person is capable of identifying and responding to “emotional reactions in oneself and others” (Catalano et al., 2004, p. 104).

Chris believes EE can contribute to emotional competence “because we are talking about serious issues affecting lives and survival” and argues that “without that [emotional connection] the program would be pretty weak.”

Matthew describes how his campers contribute to each other’s emotional competence,

*“Because they are able to receive the support of witnesses, or just having somebody listen to your story instead of informing you what you should do or giving you advice...for some of them it might be the first time being able to talk about those things because it’s based on family or it’s based on*

*friends back at home and its very personal. So, by being removed they're able to gain some strength by sharing that piece. And for some participants it's moving past it."*

Tim provided some very interesting examples of how emotional competence is learned through natural places and his own reflective style of facilitation.

*"Emotional competence is a huge one! The example that comes to mind is being in the forest – again, because it's a responsive matrix, a lot of times what you put out there will be reflected back at you. An example is, if you are angry and go crashing through the bushes then you get wacked in the face from a branch 'cause you were not paying attention. I feel like it's a direct reflection of the emotion that you bring to a situation, and an impersonal response. I ask "How did that feel? What happened there? Next time do you think you could try something other than running off, like maybe sitting down. Doing sit spot. Breathing?"*

### Behavioural Competence

This asset is defined as the ability of a young person to communicate well and to manage conflict effectively. Catalano et al. (2004) relate it to "effective action", meaning that the young person can assess a situation and then participate positively in it. Chris indicated that the topics included in various EE programs provide an opportunity for behavioral development.

*"Sometimes a lot of discussion happens around challenging ideas, and challenging identities. That can be confrontational so there is a need to learn how to communicate in a way that you don't cause conflict, and to deal with tense situations. To deal with conflicting ideas and conflicting structures even within society."*

Matthew gave an example of how they support behavioural competence when he discusses conflict resolution skills...

*"...we teach those...the idea is how to move from conflict to conversation and how do you use objectivity and how to attach emotion to things properly to resolve conflict. To not get into an argument with people but to have an actual conversation. For me as a participant, I know that's a piece I used as a teenager. Like going back to my own friend groups being like, 'hey I know how to do this. And then being able to solve a conflict amongst my friends."*

## POSITIVE PARTICIPATION IN THE WORLD

Unlike the internal focus of Positive Identity below, and the personal development side of the Competencies and Skills categories above, this category focuses on a young person's outward thoughts and actions. It relates to how the young person is as a human being in the world. Do they contribute in a positive way and hold positive values?

### Service to Others

This asset was not a strong one for EE, although many agreed that EE could potentially "give them different opportunities to help out in different ways within their community." - Alice

For others, they hadn't even considered looking at what they do from the perspective of service to others. From our discussion they determined they would in the future "pitch it more to the kids on the farm that we are going to go do this as service to others" (John) so as to build their understanding of their impact.

### Constructive Use of Time/ Restraint/ Pro-Social Norms

The idea of "constructive use of time" triggered much discussion on who gets to define what is included as constructive. One educator, John, stated

*"On the farm, when kids feel comfortable there after a couple of days, then you see they all go and do their creative things. Some will be carving and some will be baking, but some will just be sitting there... And they're fully engaged in sitting there and doing whatever they are doing in their head. You can't say that's not constructive."*

In some cases, when I further explained that it was referring to drug use and sexual behaviour the educators got either more frustrated, or countered with the idea that dabbling in those activities could actually introduce more self-confidence, self-efficacy, and ability to stand up for what they believe in. These concerns from educators on what is deemed "constructive" should be considered in future definitions.

Michelle was one of the educators who struggled with the asset definition from the Search Institute and Catalano et al., explaining,

*"I puzzle this one out in my brain...I know that there is a kind of definition in our minds of like what is unruly behaviour and all of this.... if we talk about context one person's version of appropriate behaviour is definitely not appropriate in other people's eyes. I'm always troubled by learning requirements where conduct is policed"*

Although these concerns were brought up, there was also great discussion on how EE does reduce potential for risky behaviours.

*"I think what EE can do is help kids develop independence. And with a strong independence they can say no to certain things like that with peer pressure. And in terms of dangerous situations like a lot of EE programs I think will teach risk management and that sort of thing." - Alice*

*"It [EE] provides a space or option to do things that can take a lot of your time. But it's also feeding those needs or parts of yourself that might otherwise be attracted to ...you know drugs. [Needs] like belonging, community, sense of purpose. Not being bored. Being active." - Chris*

### Responsibility

Although the scope of Responsibility as an asset was limited in the Search Institutes literature to mean a young person taking responsibility for themselves, all educators agreed that a broader responsibility was encouraged in environmental education, including developing a responsibility for others and the earth.

Some, like Alice, suggested it was a natural product of the programs structure - *"In terms of integrity and honesty and responsibility I feel like all of those happen naturally for kids that come to our program, from the stories we tell and from the activities we do."*

Sarah's comment *"When you are doing trip based EE you're responsible for your own self in a way that you are not usually"*, highlights how EE can be different from the traditional school setting in its ability to foster a sense of personal responsibility in students, primarily because they are removed from their comfort zone and do not have their parents to fall back on.

### Engagement in Learning

Young people are actively engaged with learning, and are committed to their school. All the educators were highly supportive of this being relevant to what EE does for young people. Sarah indicated that students who participate in EE programs have a *"commitment to their own learning curiosity."* This curiosity is demonstrated within simple stories like Alice's: *"Kids take their parents to their special spots, or teach them plants, or go for a walk in the forest."*

Matthew explained that the place the education occurs plays a role in engagement, because *"for a lot of kids coming from places that are city or more urban, that experience [being in the forest at a camp] – it put them in a place where they were more willing to participate with the camp overall."*

John emphasized the difference between the traditional school setting motivations and an EE programs learning motivation. In EE kids are intrinsically motivated,

*"...using their own motivation [for] learning on their own at home, trying to figure something out. Students are going home and still thinking about what they were learning about in school that day or actually wanting to know more, and looking it up themselves, spending their own time adding to their knowledge base."*

This is in contrast to the traditional school setting, in which young people are extrinsically motivated by grades and the absolute requirement they must hand in assignments. This does not mean that the content learned in EE programs isn't useful in the traditional education system. An example from Alice indicates it can be:

*"Their parents say if they have some sort of home school project they will choose to do it on something they have learned at nature schools so that they are actually do like research on particular species or something because we have been talking about it in nature school or because we saw it or something like that."*

The ability to relate the content to one's own life seems to be one of EE's most unique factors in its ability to contribute to the assets.

### Morals/ Social Justice

Chris gave the definition of morals and social justice, when he explained how EE contributes to this asset in young people:

*"There is a development of right and wrong, understanding morals on the cause and ethics around some issues. It helps you become a critical thinker."*

Alice highlighted some actions the students take after being in the program awhile, which she indicated demonstrate they have developed a moral justice that goes beyond themselves.

*“They definitely have a wider scope of the rest of the world and not just their internal self” because “they stand up for something that’s unfair, they will stand up for the protection of a special place in the forest.”*

### Caring/Empathy/ Sensitivity

Again, the place-based focus of some EE programs was indicated as an important initiator of this asset development. In particular EE can provide unique opportunities that allow for the sharing of experiences together, and an understanding of how positive, caring behaviour is needed.

*“Kids are put in different situations with people, they are not just in a classroom doing independent work. It’s like ‘ok we have to work together as a group, we have to figure this out together’. So I think there is a lot of situations that come up where having empathy and being sensitive to other people’s needs is pretty important and seen as a valuable skill within the community we are trying to create with the kids. I think it shows in how they start relating to other people and other people in their home”- Alice*

Sarah mentioned that *“often you’re just in a different environment...and as soon as you are out of your comfort zone you require empathy skills to be used with each other.”* She went on to explain that *“On longer, trip based EE there is more vulnerability. There is more opportunity to show caring to each other. I think connecting to nature has an inherent link to caring in general.”*

This connection to nature also has the ability to extend caring to beyond just human- human interaction, as noted by Alice:

*“Also just a natural beginning to care about the natural world around them, like they start to care about the wild being or plants. They point out to other kids ‘oh we can’t go there because there is a bird’s nest’. And they start making those connections, like wanting to care about those things.”*

Tim explained further that

*“Compassion looks like someone intervening when another child is tearing a branch off the plant or tree. Or a child creating a ceremony and burial for a dead bee. Just feeling sadness when they experience death or when they see suffering in other life forms. It’s thinking beyond themselves.”*

This thought highlights the spirit of empathy – placing yourself in another’s (human or non-human) position.

### Spirituality

The Search Institute provides the heading ‘Religious Community’ under Constructive Use of Time. This differs slightly from Catalano et al.’s statement that PYD programs ‘foster spirituality’. The opposite responses these two framings produced may be indicative of the culture in Vancouver or Canada as a whole, the educators themselves, or another influence. The educators who were presented with Religious Community all had similar resisting reactions and hesitated or disagreed with it as an asset for EE to contribute to.

This response differed significantly from those presented with spirituality as an asset, all of whom agreed it is a strong component of EE, in part because *“It requires a reflection around connection to the outside, not just connection to the inside”* (Chris). Tim explained,

*“I really feel the work I do fosters spirituality. Spirituality in my mind is being more defined like being a part of or belonging to something larger than yourself. Just...it’s inherent of the work, feeling like ‘heey, it’s not all just about you.’”*

And Michelle suggested that when EE brings in spirituality it is *“deeper and more interesting”*. Thus, due to the assertion that EE *“is the place where kids can learn to understand nature and how everything is connected”* (Paul), and my own belief that religion is not a necessity for individuals to feel a spiritual connection beyond the earthly plain, I concur with the educators that support ‘Fosters Spirituality’ as an outcome of EE programs.

## POSITIVE IDENTITY

These assets relate to how the young person sees themselves as a person and in relation to the expectations of their world.

*“These kids become confident, become outspoken but at the same time very humble like. They talk about nature and being humbled by nature, showing appreciation about what nature does for us”* - Paul

### Self-Efficacy

Self-efficacy means that a person believes they can accomplish something through their own actions. Michelle felt *“this is a really important one. A really important way is through modeling”*. She offered an example of learning to grow food,

*“I think that’s a really transformational thing cause it’s like a new thing you were able to achieve and so in that sense youth feel more empowered to do it again, seek out the opportunity, to tell others about it.”*

Tim also provided an example on building self-efficacy through EE:

*“There are these thresholds that are imposed by natural conditions that kids can work towards [overcoming] and not take personally. When they achieve that (building fire) then they experience self-efficacy. Especially when they are... mentored in a way that supports growth through failure and it’s not seen like failure. It’s more of a step towards achieving that goal. But when they finally do achieve that goal they definitely feel self-efficacy and then take that and apply it to other things around them.”*

### Self-Esteem

Self-esteem at the core is essentially an expression of self-love; does a person feel good about themselves? Many educators indicated that EE’s tendency to accept people where they are, and provide opportunities

that are suitable for all skills and abilities allows self-esteem to develop in almost all participants. Alice said,

*“In terms of self-esteem I think that EE can give people opportunity to do things they wouldn’t experience in other aspects of their own life which gives them like a really positive outlook on... it enables them to feel really capable and that in turn can up their self-esteem for sure.”*

Paul shared what he’s noticed in his students, which he believes indicates higher self-esteem:

*“The kinds of things I have seen is kids who – I see a lot in their writing but I also see it a bit in their behaviour. They start to worry less about what other kids think and how they fit in and start to understand the context of the world. A different view of the world and their place in it.”*

### Sense of Purpose

The sense of purpose suggests that the young person has goals and dreams; that they feel they can, and want to, contribute to something. Interestingly, the educators indicated that this sense of purpose often went beyond the young person’s own life to helping the broader world.

*“I feel like EE can enable kids to change their ambition through their goals to be more beneficial to the rest of the world.” – Alice*

*“I strongly believe it’s because of the...they feel empowered because what they are doing is relevant. And when I talk about relevance I talk about how am I going to be in this world? How am I going to be as a human being? What is my connection to nature through EE, through justice and fairness?” – Paul*

### Fosters Belief in the Future

The asset implies that a person has hope and optimism, and research has indicated that positive belief in the future predicts “better social and emotional adjustment in school and a stronger internal locus of control” (Catalano et al., 2004, p107). Many of the educators mentioned how their students would share at the end of their program, their desire to become a nature guide or other career goals related to the environment.

*“I think it can give people more positive outlooks. Give them a sense for different opportunities that are out there in the world or that their life doesn't have to be in a certain way. That there is opportunities and choices other decisions that they can make” – Alice*

And for those students who may have felt constricted with the life choices ahead of them (university, certain jobs), Michelle believes that “EE opens more possibility and opens different forms of engagement. So options exist for someone who probably thinks options don’t exist within a space where everything is prescribed.”

One of the most moving and insightful comments came from Tim, who shared these thoughts:

*“I think because ...in our programs one of my goals is...we’re focusing on passion based learning, unique interest gifts. And by cultivating those I believe you increase someone’s self-worth and*



*self-efficacy, and in doing that I feel that would lead to hope in the future because you have value in yourself. And if it's a community where that happens for everyone, then everyone is valued, and you value others. I guess that one thing as a mentor is, I'm trying to...when I see a gift and I try to cultivate a talent I express that to them and they decide what they do with it. If they believe their gifts are valuable and they have value in the world, then they want to share those."*

## EXTERNAL ASSETS

These are defined as assets that others provide for the individual. Rather than a development within the person, these assets are supports, approaches, or experiences that help the individual live positively.

### Youth as Resources

This relates to how youth are included: as individuals that can contribute to their community/world versus as a person who can't offer anything of value.

*"I think there is a lot of potential in programs like this to make youth feel like they can be resources. To give them useful roles in the community." – Sarah*

In sharing about actions his students take within the community Paul expressed *"the ultimate goal is the kids to get involved so they have an outlet to create change, positive social change, that empowers them and they feel good about."*

This asset was one that educators felt may be program dependent, although there should be opportunity within the program itself for youth to be given useful roles.

### Safety

Many educators mentioned students who were scared of going into the forest on their first day, but who were sneaking through the forest and jumping into bushes by the end. In this regard, Sarah suggested that *"EE could really contribute to expanding where a young person feels safe. Where you can go comfortably."*

However, beyond physical safety many educators highlighted the ability of EE programs to put emphasis on emotional and mental safety too.

*"Our whole thing is about creating a safe space. We have an activity the first day...where we establish what we want to experience this week and what we don't want to have here this week. It's a social contract essentially." – Matthew*

Tim's explanation of safety in his program went even further...

*"A big thing for me last year was realizing we are teaching survival but the fundamental most important work I was doing is what people call 'heart work'. Providing a safe space where people can be themselves. Being someone they can trust and feel safe with. And being someone who can see them and try to help them get where they are going. That comes from a knowledge*



*of who they are and that can't happen unless you know the person and have trust. That is usually a product of secure attachment and bonding."*

He made connections to various other assets, including bonding, self-esteem, and positive view of the future. It seems safety is a foundational asset in an EE program; without it there is limited potential to develop or build on other assets.

### Role Models

This asset is an external asset, and represents a person who models positive behaviours and values. All of the educators felt this is definitely something EE would be able to provide, and Sarah explained why:

*"I think adult role models is the most promising one. EE educators tend to be people who have life experience in their field. I think of a role model as being a bunch of things, but one of them is being someone who is passionate about something in life, and EE educators tend to be that."*

### Bonding

Environmental education often has a structure that brings about bonding that may not happen in the standard school setting. In particular, the programs that bring young people outside have the ability to encourage bonding for reasons highlighted by Tim:

*"I feel like facing adverse conditions and challenges and overcoming them is so much of what EE is. In this situation you are vulnerable and you have to trust people. You have to work together and have to communicate. All of those things promote bonding."*

However, even the school program offers opportunity for bonding. As Paul stated,

*"there's definitely a strong sense of community...you see it physically present, you see the bonding. You see they're cooking together; they're doing all sorts of things together."*

It could also be as simple as being able to relate to each other over the topic.

*"I think that there is that connection when you're working towards something like a common cause, you're working on a project, working closely together, that kind of developing togetherness." – Chris*

The assets listed above are those that were believed to be obtainable through environmental education. Thus, they make up the foundation of the two pilot assessment tools I developed, which are explored in more detail below and are included in the appendices.

## ASSESSMENTS

The two pilot assessment tools I have designed are based on frameworks developed by the Search Institute's 40 Developmental Assets (2007), Catalano et al.'s Constructs of PYD (2004), and the IMCC Categories (Schusler, 2015), which are very clear, detailed, and useful. While some content is original, I

must acknowledge that I have primarily re-configured and re-structured their content and ideas to reflect a relevant EE application based on the interviewees insights and opinions. Questions included in the assessments were brainstormed with individuals not involved in the research, but often reflect the same ideas and content as what is included in the three frameworks.

### Tool 1 - Program Self-Evaluation

Environmental education programs can use this template to demonstrate how they are already meeting PYD assets. In addition to their own in-house uses, the results can be included in grants and funding applications. Future work with this would be to develop a full package for programs that includes the following: an introduction to Positive Youth Development, an explanation of all assets EE contributes to, the Self-Evaluation instructions and evaluation form, and suggestions for how results can be used.

The self-evaluation tool is a table that is divided into four columns: Assets, Description, Program Indicators, and Positive Outcomes. The assets included are those that can be directly impacted by the design and/or the methods of a program. The third column is a space in which the program can write the indicators from their own program. It is suggested they attempt to identify between three and eight. If they cannot identify between three and eight indicators, that would suggest that this is an asset they may wish to consider for future development. I would also suggest that the more indicators identified the stronger their impact will be on that asset. Sample indicators are included to provide the program with a starting point in their reflection process. The fourth and final column, is available for programs to provide an example of a positive outcome that is relevant to one of the indicators in that asset category. Inclusion of a tangible outcome on a participant can demonstrate to the funders the programs impact. A sample of the assessment structure and including one component is in *Table 4: Program Self-Evaluation Sample*. The full Program Self-Evaluation is in Appendix E.

Table 4: Program Self-Evaluation Sample

Asset	Description	Structural Indicator (3-8)	Example of Outcome
<b>Safety/ Risk Management</b>	Physical safety; setting/location is safe; provide opportunities to test personal risk boundaries; respectful and inclusive social environment; support for self-expression; open communication	<ul style="list-style-type: none"> <li>○ <b>List 3-8 indicators the program has in place within its structure/design</b></li> <li>○ E.g. at the start of each day instructors define the boundaries of the space</li> <li>○</li> <li>○</li> <li>○</li> </ul>	<p><b>Provide one example of a scenario which resulted in a positive experience for a participant.</b></p> <p>e.g. one participant had never been in the forest before. He was scared because it was dark and he was worried about animals. We talked about how to be safe in the woods, set up a buddy system, and started at the edge of the forest, slowly progressing further in each day. By the end of the week the participant was sneaking alone through the forest to arrive to the program while his parents walked the path.</p>

## Tool 2 – Short-term Participant Assessment

Considering the limited duration of many EE programs, the goal of this tool is to evaluate the program through the young person, and quantify the number of PYD assets the young person was exposed to and/or was enabled to enact. It assesses both the programs level of external assets and the participant’s own experience of internal asset *opportunities* within the program. Thus, while the tool will not demonstrate growth in an asset, it can demonstrate that the *opportunity* existed for the young person to either utilize or practice a skill that reflects assets. The more asset opportunities the young person indicates occurred, the better the score of the program in providing asset building opportunities and experiences. The number of assets that are measurable in this tool is significantly reduced in comparison to what could be assessed for a long-term program. Some assets, for example ‘Sense of Purpose’, are not measurable within a short timeframe or are not measurable through the provision of an opportunity. The assets this assessment addresses include:

Safety	Planning & Decision-making
Boundaries and expectations	Cultural competency
Caring school environment	Self-esteem
Role model	Belief in the future
Caring/empathy	Constructive Use of Time/Pro-Social Norms
Creative activities	Self-determination/Critical thinking
Bonding	Engaging in Learning

The assessment is a Likert-type scale consisting of 33 questions that address 14 assets. Scoring is done according to asset group. If there is more than one question related to an asset the sums are totaled and divided by the number of questions to get the average score. A score of five indicates the program is strongly contributing to the asset, a score of 1 indicates the asset has not been addressed.

A sample of the questions are listed in *Figure 1: Participant Assessment Sample* below. To see the full assessment questionnaire, see Appendix F, and the scoring instructions in Appendix G.

*Figure 1- Participant Assessment Sample*

**Please select the option that best represents your answer to each of the questions about your experience in the [program name] program.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I could be myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt respected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expectations were made clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I knew/understood the rules and consequences for our group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We had a group agreement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Implications

If we teach young people how to be and be well in the world today, then in the future they will be more capable of handling the multi-faceted challenges that will arise due to climate change. We often hear that “the youth are the solution” and therefore the pressure to solve the challenges of climate change is placed squarely on their shoulders. Considering that the nature of the challenges we are facing relate directly to the environment, and it is young people who will need to navigate them, it seems appropriate that EE programs be a major focus for positive youth development initiatives. These programs will build bonds to nature while building bonds amongst young people. They will strengthen ecological knowledge while also strengthening character. EE can, in my opinion, also support youth in developing emotional resiliency, which is further discussed in the second component of this report.

## Environmental Education is a key method to increase PYD assets and best supports engaged citizenship

With the pressures placed on young people, how can we best enable them to become individuals capable of succeeding and thriving in this challenging time?

The literature says that EE has the ability to develop engaged, active and critical thinking citizens. Indeed, Volk & Cheak (2010) found that “Ideas related to citizenship participating were freely communicated by respondents from all four interview groups [Teacher, Student, Parent, Community Member]” (p. 17). To be an engaged citizen you must be aware, believe you can do something, and have the skills to do it. From this supposition it can be argued that positive youth development is a foundational component of engaged citizenship. I would argue that EE does civic engagement well in part because it develops PYD assets so effectively. Additionally, “some forms of EE [non-classroom based] may in fact foster social connectivity, trust, and associational and volunteer involvement, which are all components to the civic engagement or democratic tradition in social capital” (Krasny et al., 2013, p. 5).

The interviews with environmental educators make it apparent that EE is already contributing to PYD. To take this a step further, I suggest that PYD *should* be a goal of all EE programs to ensure the development of the right supports, relationships, and interpersonal competencies that are necessary for the development of engaged and resilient citizens.

## Change our education system

The interviews made it very clear that EE offers a unique educational approach that can provide relevant and engaging educational opportunities for those not successful within the current educational structure. Well-designed and implemented EE programs can meet the needs of all students while also contributing to positive youth development assets and building critical thinking and engagement as citizens. This challenges the idea that “structure is best” and “grades are what matter”.

The idea that a transition into EE methodology and pedagogy would provide a holistic approach that better meets the needs of our students is also supported in the literature. Volk & Cheak (2010) found that students who participated in a special environmental stream of instruction within a formal education setting, “appeared to be more skilled in dimensions of critical thinking associated with environmental education than did students who had no direct experience with the program” (p. 16). This was also demonstrated in the experiences of educator Paul, who regularly identified the ways in which his

students engaged critically with other curriculum; challenging teachers, engaging in thoughtful debates with fellow students, and exploring their own intended complicity in the continuation of inequality and injustice.

It is important to understand that successful EE programs like these in the formal education system could move us away from the transmission-focused approach so inherent in our classrooms. Effective EE educators typically utilize a different pedagogical approach than what is taught to teachers who “teach”. They may employ any, or a combination of, the following approaches: transformative education, social justice, critical thinking, inquiry-based, and experiential learning. If the indication is that EE is beneficial for those struggling in formal education settings perhaps we should begin considering it as the comprehensive approach we need to transform our education system! This is something I definitely support.

## Recommendations for Educators, Funders and Future Research

### More research and evaluation is needed.

At a time when we need to have resilient and engaged youth it is especially important that we begin looking deeper into the relationship between positive youth development and environmental education. If we understand that positive youth development builds strong and resilient youth, and environmental education creates engaged citizens, the combination of the two practices has the potential to make a huge impact on young people’s lives. Thus we need to understand the connection and relationship between PYD and EE better. While general research is beneficial, one area of interest that has arisen from my experience in this project is a comparison of the impact of EE on PYD for students from different socio-economic backgrounds, cultural groups, and urban-rural settings.

Some questions that could be considered are: Would asset development from participation in a long-term EE program be higher among a lower socio-economic group? Does an EE program affect different PYD assets when participants are from certain cultural backgrounds? How does living in an urban or rural setting influence the rate at which PYD assets are gained through EE programs?

### EE’s influence on PYD needs to be conveyed and accessible to educators in a practical way

A theme that not only arose through this project experience but was also one I noticed when I attended the Children & Natures’ Conference in Minneapolis this year (2016), was the need to better emulate the idea of praxis and bridge the gap between academia and practice. At the conference, educators and researchers in an ‘Action Lab Workshop’ brainstormed ways to make research more accessible and relatable to the practice, including online collaboration between countries and a platform with searchable interest areas. It was acknowledged by all that there needs to be better collaboration between researchers and educators so that we can bring theory to practice so that practice can feed theory.

A good starting point would be to look at why educators are not accessing the research that *is* out there. Do they know about it? Is it in accessible language? Do they have time to find it or read it? Is it clear how

the research impacts them? Does it make suggestions on how they can utilize the results? Is it affordable for programs to access the results of research and any related products, such as assessments? On that note, I have to say that while I can understand and respect the need to fund continued research, if the results of the research are not accessible for practical application and use what is the point?! An excellent example of making research available to educators in an easy to understand and applicable manner is Schusler's (2015) list of indicators, which provide tangible examples of program structure that meet PYD settings.

### Increase long-term funding for EE programs

Although governments, foundations and granting agencies are increasingly interested in environmental education programs, funding for non-formal programs continues to be a challenge. In particular, as with most NGO funding opportunities, finances are often provided as seed funding to start a program but not for the operational costs and continuation of programs, a scenario I regularly experienced when working in various non-profit programs (immigrant mentoring, community engagement). This predicament can lead to excellent programs struggling financially, sometimes to the point of shutting down, at a time when they are truly beginning to make big impacts.

I am encouraging funders, of all kinds, to consider long-term investment into EE programs that have PYD components. As demonstrated, environmental education not only teaches ecological literacy but it can contribute to developing resilient young people who are engaged citizens. This is a great case of “double bang for the buck”! Programs that only focus on PYD focus on one thing only. Therefore, environmental education programs that also focus on PYD can exponentially increase a variety of positive outcomes. In this vein I would also encourage collaboration between the fields; PYD organizations and EE programs have much to gain from working together. I believe there is ample opportunity for organizations with a heavy PYD focus to reach out and partner with EE programs, and vice versa. The results for young people would be tremendous.

## Part II

# Supporting Emotional Resiliency through Environmental Education

## Introduction

The following pages are exploratory in nature, with the aim of uncovering areas for future research and highlighting how environmental education (EE) can build emotional resiliency in an era of climate change challenges. It is the second component of my final project for my Master's of Environmental Studies, Education Stream, and a companion to the first component above - *Positive Youth Development in Environmental Education*. It focuses on the intersection of climate change, emotional well-being, and environmental education.

The paper is divided into three sections: Foundation, Research, and Implications. The first section will involve a reflective analysis of my own experiences and purpose in conducting this research and writing this paper. Additionally, I will explore the current literature around psychological impacts of climate change and the role of education. The second section will focus on the research I undertook with a local environmental education (EE) program that provided further insight into and ideas for the discussion around emotional resiliency in our climate changing world. Lastly, in the final Implications and Recommendations section I will explore what emotional learning for our society and education could look like within the field of environmental education and provide recommendations and ideas on how we can develop processes and language to ensure our society is emotionally resilient in the face of climate crisis and climate change.

## Foundation

*"I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that with 30 years of good science we could address those problems. But I was wrong. The top environmental problems are selfishness, greed, and apathy...and to deal with those we need a spiritual and cultural transformation – and we scientists don't know how to do that." – Gus Speth (qtd. in Crockett, D., 2014)*

## PURPOSE OF RESEARCH

The quote above suggests that our 'emotional being' is required for positive change. As a result, we must acknowledge that strengthening our emotional health and well-being should be an integral part of any

education, but in particular within environmental education. We cannot solely count on knowledge, science, money, or technology to be the solution to our predicament.

I regularly struggle with my own despair and deep, aching sadness at our current predicament and continued destruction of our ecological home. There are times when I am so overcome by these emotions that I must distance myself: not reading the news stories, taking a break from volunteering for the causes I believe in, stepping back from the emotional precipice to regroup and recharge.

It's not hard to see why many of us are in emotional turmoil. We are inundated with the climate change 'doom and gloom' and many of us are coming to the full realization of the consequences of human action from current and past decades. The media representations of climate change primarily focus on negative climate impacts (extreme weather, loss of animals, negative health effects) and minimally on solutions and positive action (Seifter, Robbins, & Kalhoefer, 2016). I have found the same approach in the academic literature, with a majority of articles on climate change setting up the doom and gloom rhetoric from the beginning, using words such as severe, crisis, disrupt, harm, threat. And because of the immediacy of our current situation it's very hard not to begin this way; I even did it myself, in the title of this report.

Of course, it can be expected that with increasing climate change experiences and knowledge comes increasing psychological impacts. While there is some work being done in this area, generally speaking there are very few talking about the grief, despair, hopelessness, and other conflicting emotions being experienced as a result of climate change. So when I consider my "WHY" for this paper there are two answers: 1) because so few are looking or talking about this; and 2) because I need the support myself. As an environmental educator, and in consideration of all the factors above, I felt the need to examine the potential for environmental education to contribute to the emotional resiliency and well-being of those they are encouraging to become active and engaged citizens.

Questions I set out to explore: What emotions are people experiencing around climate change and ecological issues and which are being experienced most regularly? Does an EE program focused on positive action reduce the negative emotional responses? Do EE programs even have emotional resiliency and well-being on their radar? What emotional impact is there just from "knowing" about the problem of climate change and can this be countered by the same method that is doing the teaching? How might EE address the powerful emotions that can result from knowing about climate change? How can it best support individuals to cope with and process these emotions and still instill hope?



Figure 2 - David Sipress, (n.d.)



## PSYCHOLOGICAL IMPACTS OF CLIMATE CHANGE

*“It seems plausible that when individuals are regularly confronted by urgent warnings about impending ecological disasters, socioeconomic disparities, and political antagonisms and by the frenetic pace of modern life, they are likely to experience attentional fatigue, feel helpless against seemingly insurmountable odds, and curtail social contact with others in their local milieu.” - Stokols et al, 2009, p.187*

The majority of research on the mental health implications of climate change has focused on the psychological impacts of direct climate change experiences, such as those due to extreme weather events (Fritze, Blashki, Burke, & Wiseman, 2008; Doherty & Clayton, 2011; Swim et al., 2009; Kidner, 2009). However, in more recent years, we have also begun to see “an emerging understanding of the ways in which climate change as a global environmental threat may create emotional distress and anxiety about the future” (Fritze et al., 2008, n.p.), a shift that has us focusing more on subjective well-being and indirect impacts (Stokols, Misra, Runnerstrom, & Hipp, 2009; Doherty & Clayton, 2011; Reser & Swim, 2011).

Uncertainty, concern, worry, and fear are stemming from the awareness of climate change, and some suggest that the destruction of the natural world is playing a larger role than acknowledged in the increasing rates of anxiety and depression in the industrialized world (Kidner, 2007). Stokols et al. (2009), highlighted the helplessness “arising from frequent media reports of ecological and sociopolitical dangers in local as well as distant regions” (p. 189). Why is it that we are being affected on an emotional level by climate change and ecological crises?

Historically, “our culture, including mainstream Western psychology, tend[ed] to reduce our pain for the world to personal maladjustments” (Macy, 1999, p. 27). In the past decade, this has begun to shift and Western psychology is acknowledging the intrinsic connection that humans have to their environment and the subsequent emotional toll that ecological degradation has on our self-hood (Swim et al., 2009; Kinder, 2007; Doherty & Clayton, 2011). Unfortunately, there are still numerous compounding factors that contribute to a disregard for, or lack of conversation around, the psychological impacts of climate change, and our ability to express our emotional experiences.

The historical social and cultural structures that are in characteristic of Western cultures is one such factor, and include: specialization, city planning, and technology. The tendency of industrialized cultures to specialize and fragment disciplines “ensures environmental issues are dealt with separately from psychological problems” (Kidner, 2007, p. 125). Thus, it is difficult to find approaches that connect and weave the two areas together. The planning of cities, and the increase in high-rise living, reduces the experience of community and support networks (Soja, 2009). Current technology has allowed us to mask our true experiences through the use of emoji’s, and includes a hidden pressure to show only positive life events on social media. Stokols et al. (2009), also highlight our technology’s unintended psychological consequences, “generated by chronic exposure to information overload” (p. 189), in particular the frequent media reports on the climate crisis.

Another compounding factor is the intangibility of climate change. Because environmental loss can be “intermittent, chronic, cumulative, and without obvious beginnings and endings” (Windle, 1995, as cited

in Kelsey & Armstrong, 2012, p. 188) it can be challenging to articulate experiences and emotional responses to a non-targeted experience. Furthermore, unlike direct experiences of climate change impacts, such as floods and heat waves, the indirect impacts (i.e. psychological effects) are considered “representations” of climate change and are experienced through media, social communication and education, or personal exchanges (Fritze et al., 2008; Swim et al., 2009). This intangible experience of climate change makes it challenging to express emotional responses and feelings.

To further compound this ambiguity, we have an inadequate range of language available to express our emotional responses to climate change (Macy, 1999). We are, thankfully, starting to see this addressed, with new terms being created. Two such examples are: the expression ‘solstalgia’, a term coined by Glenn Albrecht to describe the “feeling of desolation or melancholia about the emplaced and lived experience of the chronic deterioration of a loved home environment” (2012, p. 255); and Kriss Kevorkian’s (2004) term “environmental grief”, created to better explain our emotional response to losing our ecosystems. These terms are framed within emotions we are familiar with in our day to day lives, but are applied directly to our experience of ecological challenges.

## THE ROLE OF EDUCATION

Education around climate change and our ecological crisis is not lacking; indeed, there are many efforts throughout the world to bring ecological awareness to young people, often in an attempt to inspire positive behavioural changes and pro-environmental action (Kelsey & Armstrong, 2012; Flora et al., 2014, Louv, 2008). However, the focus has been on the cognitive and behavioural outcomes of EE programs, without due consideration of potential negative consequences in the affective development of young people. As a result, there are numerous examples in the literature of the negative consequences of EE programs in schools where young people are left feeling despondent and anxious (Orr, 2004; Louv, 2008; Sobel, 1996). Schusler (2014), acknowledged that “poorly guided projects can lead youth to feel disempowered, overwhelmed by environmental problems, and incapable of making a difference” (p. 117).

*“The net effect of piling up more and more of this sort of information about ecological crises is, ultimately, to overwhelm us, perhaps young people – students – especially. Early on we tell them that the world they are inheriting is diminished, dirty, in danger. Again and again we drive the point home. I find that today’s college students are the best informed I have ever known about environmental dangers. They are also the most deeply pessimistic; numbed, evasive, despondent. This too, I am afraid, is a product of doing all too good a job (of a certain kind of) environmental education.” - Weston, 2004, p. 35*

So, rather than the intended goal of connecting children to nature, the “environmentally correct curriculum ends up distancing children from...the natural world. The natural world is being abused and they just don’t want to have to deal with it.” (Sobel, 1996, n.p.). Teaching from a place of fear and doom instills a sense of hopelessness, in large part because we are asking children to care about something that they don’t yet have a relationship with (Uhl, 2003).

However, it's not just students that are experiencing this hopelessness; it is permeating scientific and educational communities (Kelsey & Armstrong, 2012). We must also recognize that "there is a lack of concrete guidance for educators regarding complex issues like climate change in terms of emotive responses learning about difficult issues can incite in young learners" (Kelsey & Armstrong, 2012, p. 187). Considering this, the question Fawcett & Dickinson (2013) ask becomes even more pertinent: "how might environmental educators help learners face the possibility of destructive outcomes with compassions, hope, and courage, rather than with denial, depression and apathy?" (p. 161). Educators may be learning more about the issues themselves as they prepare for a lesson, and may not receive their own emotional support. While the research I will discuss below focuses on participants of an educational program, it would also be beneficial to explore this thought further in future research.

## The Research

### INTRODUCTION

It was quite by accident that the opportunity and idea arose for me to conduct an exploratory survey with participants in an environmental education program that focused on conservation action. I found the program during my search for environmental educators, just under a month before it was to start. I sent a quick email explanation to the program coordinator and within the week I was furiously trying to design a survey that would help answer my questions about emotional experiences.

### ORGANIZATION & SUMMIT

#### CPAWS

The program I collaborated with is part of the environmental education repertoire of the Canadian Parks and Wilderness Society (CPAWS), which has been active for over 50 years in undertaking a variety of campaigns to protect Canada's forests and parks. It is "Canada's only nationwide charity dedicated solely to the protection of our public land and water, and ensuring our parks are managed to protect the nature within them" (CPAWS, 2016, "About"). This organization was perfect for my research on emotional resiliency because their focus is on knowledge dissemination and action and they have numerous campaigns, programs, and resources both online and throughout Canadian communities.

#### Take Back the Wild

The free Take Back the Wild program was launched in 2015 with the goal of empowering young people aged 18-35 to take action on conservation within BC through "leadership training, skills development, cultural exchange, mentorship and support, and networking opportunities" (CPAWS, n.d., "Take Back the Wild"). It offers a weekend of "hands-on training for young leaders in engaging and connecting local communities" that is designed to increase participants' "ability to collectively build capacity and expertise in designing and implementing an effective and efficient conservation project" (CPAWS, n.d., "Take Back the Wild"). As part of the program, participants undertake the development of their own conservation

project and/or campaign with the support of a project mentor. Over 100 young people have participated, coming from a variety of locations and backgrounds and with varying levels of environmental awareness.

The 2016 edition of Take Back the Wild is unique in that it hosts two summits (April in Prince Rupert and October in Victoria) and is an 8-month long program, rather than the program's standard single day summit. The theme for this year was Marine Conservation and Planning, and focused on the Great Bear Sea, which extends from the northern part of Vancouver Island to the Alaskan border. For this program CPAWS encouraged those from the North BC Coastal area to apply, and provided financial support for transportation to the summits. Additionally, they offered seed money for the community projects undertaken as part of the project.

### The Summit

The goals of the summit are knowledge building and skill building related to the year's theme. CPAWS achieves these goals through multiple workshops that target different topics, which this year included: marine planning, how to build a story, government relations, and campaign tactics. The program does not have a specific workshop that addresses the emotional experiences of participants around climate change. However, program staff do open a dialogue on self-care in relation to their project work in the program, demonstrating techniques to recognize and manage stress. They also address the challenges of undertaking environmental action, and are clear on the long-term efforts required to make sustainable change. The techniques that are suggested to maintain well-being primarily focus on the body, such as exercise and eating well.

## PARTICIPANTS

There were eleven participants in the 2016 Take Back the Wild program, comprised of three males and nine females. Ages ranged from 22-35 and backgrounds of participants varied from biologists to students in the environmental field. Everyone indicated that they have a connection to the sea and nature, whether through volunteerism, education or career. Most are located in towns in the north of BC but some are urbanites (Victoria and Vancouver). Three participants identify themselves as indigenous. I am not able to connect demographic characteristics to individual responses, as anonymity was offered. Given the small size of the group and the participants are named on the program website, if I had asked for specific identifying features for each respondent it would be obvious who was whom.

Despite all participants of the program stating that they have an interest in conservation and environmental action, many had not engaged in direct environmental action projects. Thus, the results from this research must be viewed from that perspective. I believe the results could have been different for individuals who had no previous connection to the environmental movement directly, unlike this group who had some involvement with environmental issues through volunteerism, career or education.

## SURVEY DESIGN & CHALLENGES

The goal of the survey was to determine which emotions were being experienced by participants that had joined the environmental education action program, how often (both individually, and in comparison, with the others), and what triggered these emotions. The survey would be issued both pre- and post-program, so that I could do a comparison, thus seeing whether an action-oriented program diminished negative emotions and increased positive emotions, or vice versa, around the experience of climate change.

After reviewing the literature, and reflecting on my own experiences, I began with a list of 15 emotions. With the assistance of one environmental educator interviewee from the other project, I trimmed the list to 10, six of which are negative emotions (hopelessness, despair, overwhelmed, grief/sense of loss, guilty, powerless, anxious), and four of which are positive (empowered, inspired, motivated, hopeful). When I write negative, it does not mean that they are morally wrong and should not be experienced, only that they are opposite on the spectrum to the agreeable feelings of positive emotions (Ben-Zeév, 2010).

The survey included a Likert-type question, a ranking question, and an open-ended series of questions. The full survey can be found in Appendix H. Due to the necessary quick turnaround for the survey to be delivered, I did not have the opportunity to review it with my supervisor. This resulted in two challenges: the misunderstanding of a question and a missed opportunity for capturing demographic information.

After receiving the responses, I recognized that the second survey question: “Of these emotions, which three did you experience most in the past two months (use 1-3, with 3 being the most often)”, could have been improved for clarity. The intent of the question was to have participants list only their top three, and then rank those three in order 3,2,1. Unfortunately five of 11 respondents did not answer it in this way; instead of labeling their top three emotions experienced and then ranking them, the five participants rated all emotions with 1-3. This resulted in eliminating one of my intended analyses of the question. However, the data that was collected was still useable for a separate analysis, which is reviewed below.

I also did not include a section asking for demographic information in the survey. While information was provided by the organization for me to offer an overall perception on the group, if I connected identifying features to each respondents answers it would be easy to determine who was which respondent. However, I did want to match pre- and post-survey answers, and so requested that all respondents choose a nature name they could remember. Regrettably, of the five respondents who answered both surveys, three did not remember their nature name. To resolve this in the future, I would ask for demographic information to be used only for analysis, not for reporting. The unfortunate result of not being able to match individual answers is that it was impossible to determine whether there was any change in an individual’s emotional experiences, which had been an intent of the research.

The selection of the emotions for this question occurred through collaboration with an educator from Part I. I am confident that the emotions included can give some voice to the experiences of the respondents. However, there could be limitations in the labels themselves; Macy (1999) has suggested that

*“the words – fear, anger, sorrow – are inadequate to convey the feelings we experience, for these connote emotions long familiar to our species. The feelings that assail us now cannot be equated with ancient dreads of mortality...their source lies less in concerns for the personal self than in apprehensions of collective suffering” (p. 27).*

Of the eleven participants in the program, eleven answered the first pre-summit survey and five answered the post-summit survey. As a result of the low response rate in the post-summit survey, I did not have enough data to adequately analyze the changes in emotional experiences as a result of the program for the rated questions (Questions 1, 2, and 3). Question 4 responses were written, and Question 5 was only asked in the post-survey, so post-summit answers from both are included in the results and discussion section below.

## RESULTS & DISCUSSION

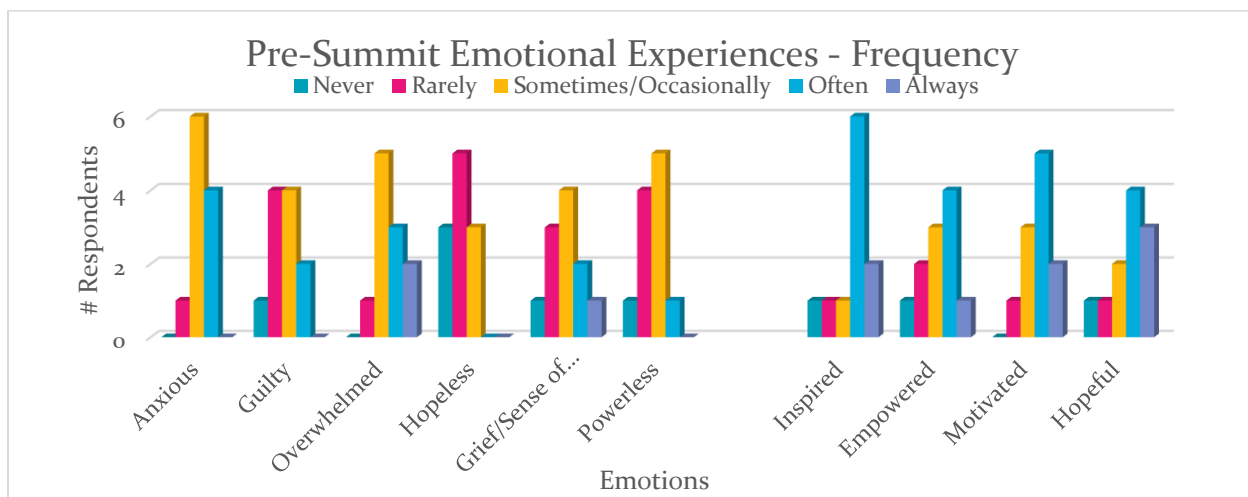
*“How difficult it is to talk about climate change with others. Even people I am close to often seem to want to shy away from the discussion. It is an emotional topic for us spiritual beings, and I feel that it is important to be accepting so that we may be empowered.” – Mushroom (Participant)*

The introductory paragraph to the survey asked participants to answer the questions by thinking about their emotional experiences in the past two months that arose with hearing, learning, seeing, or experiencing climate change and ecological challenges.

### Question 1

Respondents were asked to select all the emotions they had experienced in the previous two months from the list of emotions provided: anxious; inspired; guilty; empowered; hopeless; grief/sense of loss; powerless; motivated; overwhelmed; and hopeful. The graph below, *Figure 3: Pre-Summit Emotional Experiences-Frequency*, show a comparison of how often respondents experienced these emotions, based on a scale of: never; rarely; sometimes/occasionally; often; and always.

*Figure 3: Pre-Summit Emotional Experiences - Frequency*



The majority of participants (91%) noted having felt anxious in the past few months when thinking about climate change; six respondents felt anxious at least sometimes or occasionally, and another four felt anxious often. Only one respondent, Forest, rarely felt anxious - but their answers were an extreme outlier in all responses (rarely or never for all emotions). Research has indicated that anxiety can play a role in an apathetic response (Randall, 2009). In contrast to this anxiety however, we also see 91% of respondents feeling motivated at least occasionally, with 70% of these feeling motivated often or always. Thus, considering that all respondents had joined the program to take action, their sense of motivation counters their anxiousness, potentially reducing apathetic responses. This feeling is reflective of highly-resilient people who are able to use positive emotions to counter negative ones, often looking to find meaning or lessons learned (Tugade & Fredrickson, 2004).

While three participants acknowledged that they sometimes or occasionally feel hopeless, it is rarely or never experienced by 8 respondents, and no respondent selected 'often' or 'always'. This result was lower than I expected, but could be due to their personal desire to take action and search out other groups and people who are tackling the issues. In contrast to the hopeless responses, the hopeful responses elicited some concern. One participant 'never' experienced hope in the two months prior to the summit, and another only did 'rarely'. How can we utilize EE to reach those who may be feeling hopeless? One study found that successful environmental awareness outreach strategies employ either a "sadness appeal" that is complemented by presenting there is something to gain, or a "hope appeal" presented with the idea that there is something to lose (Lu, 2016).

Overall, the spectrum of negative emotions was mostly 'sometimes or occasionally' experienced, while the positive emotions were 'often' experienced. This indicates that although negative emotions are being experienced, they are experienced in conjunction with positive emotions. Studies by Braniecka, Trzebińska, Dowgiert, and Wytykowska, (2014) found that individuals who "experience positive and negative emotions concurrently were more resilient to stress caused by transitions than those who were characterized as being prone to feeling opposing emotions separately" (p. 1).

Over 81% of respondents had felt hopeful within the past two months; two 'occasionally/sometimes', four 'often' and three 'always'. Perhaps the reason why we see these high numbers in hope is that

*"hope is basically transforming fear into a positive experience in a sense that you can have a sense that you know what you can do...when you can start thinking about your ability to do something, having a plan of action - not necessarily a big plan of action, but have a plan for how you can talk to people, then you cannot feel so threatened. You can feel like you have some agency" (Fraser & Swim, 2014, cited in Hasback, 2015)*

The respondents may have felt hopeful because they had applied for the program within the two months, and so felt they were expressing agency over their emotional experiences.

Unfortunately, with a low response rate (only five participants) in the post-summit survey I could not do an effective comparison of this question. My intent with a pre- and post-survey comparison, was to determine whether participants experienced a reduced frequency of negative emotional experiences and an increased occurrence of positive emotional experiences, which I would suggest would be the expected outcome of participating in an environmental education action program.



## Question 2

**Of these emotions, which three did you experience the most in the past two months (use 1-3, with 3 being the most often)?**

I mentioned above that this question had not been clearly communicated, resulting in misinterpretation by five of the eleven respondents. Regardless of this challenge, I believe that the responses are still beneficial and provide some insight into the most commonly experienced emotions related to climate change.

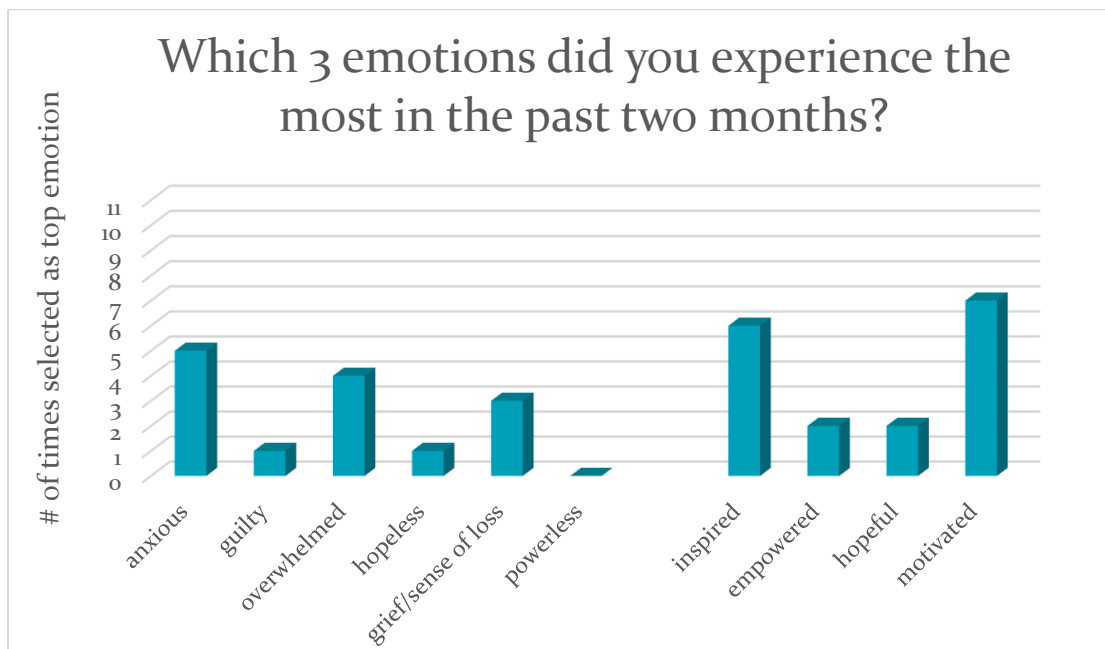
Initially, my intent was to score each emotion based on the rating of 1-3 but to accommodate the range of answers I decided to only look at the three emotions experienced most and disregard the rating of the emotions. For those who ranked only their top three emotions, all three were included in my analysis.

Of the five respondents who gave each individual emotion its own rating (all emotions rated with 1-3):

- Two people rated three of the ten emotions at a level 3; this indicates that those were the top three emotions experienced
- One respondent selected four emotions at level 3; I included all four of these in the tabulations
- One respondent rated six emotions at level 3; because I could not select the top three from this list, I included all in the tabulations.
- One respondent rated no emotions at level 3; because there were no 'most experienced emotions' I did not include the selections rated at a 2 or 1.

Despite the two outliers (one with six top emotions, and one with none) I felt the results balanced fairly well, and adequately reflect the most common emotions experienced by participants in the previous two months, which can be seen in the graph below.

Figure 4: Most Common Emotions – Pre-Summit





I think it is interesting that powerless was not selected by anyone as a top three emotion in the past two months, yet written responses in Question 4 either directly indicate a feeling of powerlessness, or suggest an inability to take action in a more general sense.

*“That we are made to feel powerless, it would cost “too much money/time” – Wolf*

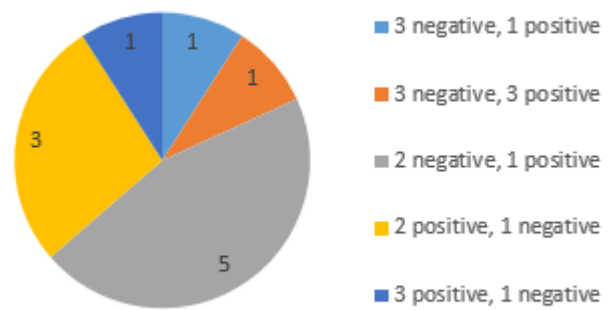
*Feeling the need for direct action, and my own limitation in being able to participate – Lola Swell*

This irregularity could potentially be explained by the level at which powerlessness is felt - a personal versus systemic level. For example, on a personal level one may have more power - ‘I can make small changes myself, but they are small...so I don’t always feel powerless’. In contrast, one may not feel empowered at a higher level, i.e. policy. Of course, the numbers do not mean powerlessness was not experienced at all by respondents over the past two months. The results only reflect that it was not the most experienced emotion from amongst those listed.

I was surprised to not see ‘hope’ identified as one of the most experienced emotions. In Question 1, ‘hope’ was ‘often’ or ‘always’ experienced by 63% of the respondents, yet other emotions were selected as the top three emotions experienced. It is results like these that make me wish I could have also conducted interviews.

Anxiousness and overwhelmed were the two top negative emotions experienced, with grief/sense of loss only a little less. In contrast, inspired and motivated were the top two positive emotions experienced. The fairly balanced levels of positive and negative emotions being most experienced is an important result. Tugade and Fredrickson (2004) indicated that highly resilient people balance their negative emotions with positive ones. In the pre-summit survey, it appears that respondents were fairly balanced in the emotions they experienced the most. Looking at *Figure 5: Balance of Positive vs. Negative Emotions* one can see that the majority of people had either two negative and one positive (three respondents), or two positive and one negative emotions (five respondents), and one person with three of each in their top three. Moving outwards in both directions you then have three negative and one positive, or three positive and one negative. Balanced emotional experiences indicate that participants in the program have high emotional resiliency (Branieka et al., 2014).

*Figure 5: Balance of Positive vs. Negative Emotions*



#'s = number of respondents

The two outliers were Forest and Mushroom. Forest (light blue) selected three negative emotions and one positive emotion, although these were only at a 2-rating. Mushroom (dark blue) had three positive emotions and one negative. This could indicate that Forest is having more difficulty coping with negative emotions related to the climate crisis.

### Question 3

This ranking question had three parts:

- 1) I had the opportunity to share or talk about my negative emotions
- 2) I had the chance to talk about and/or share my positive emotions
- 3) I find it easy to share my emotional experiences around climate change/ecological issues.

The intent of the first two parts was two-fold: 1) determine if there was a difference in opportunities to share positive and negative emotions around climate change; and 2) see if there was a change in opportunity to share emotions after attending the program.

### Comparing Positive and Negative Sharing Opportunities

The question seeks to explore whether the *opportunity* exists to express emotions rather than the *ease* with which a respondent may share. Looking at the pre-summit survey responses in the graphs below, we can see only a slight difference in opportunities.

Figure 6: Pre-Summit Negative Emotion Sharing

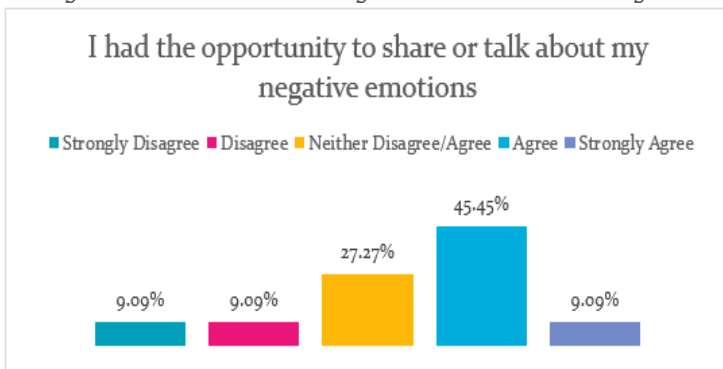
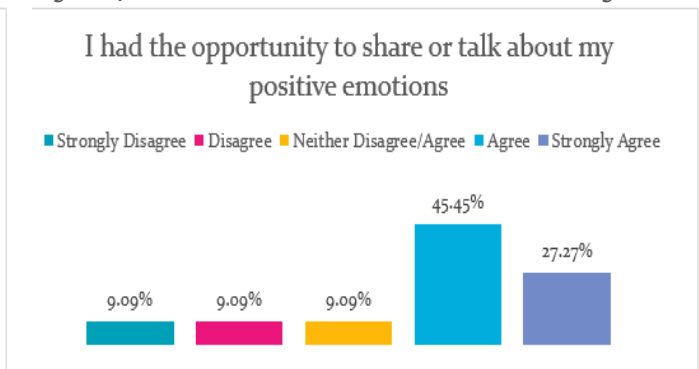


Figure 7: Pre-Summit Positive Emotion Sharing



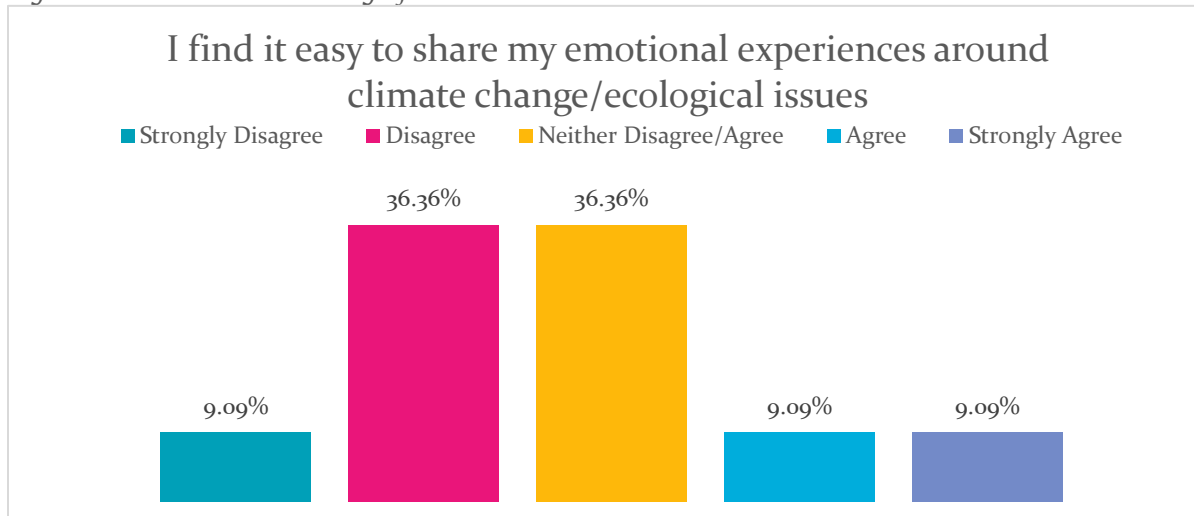
The majority of respondents agreed (45% ‘agree’, 27% ‘strongly agree’) that they had the opportunity to share positive emotions, while only 45% ‘agreed’ and 9% ‘strongly agreed’ they had the opportunity to share negative emotions, as shown in *Figure 6: Pre-Summit Negative Emotion Sharing* and *Figure 7: Pre-Summit Positive Emotion Sharing*. However, this difference is based primarily on an answer of ‘neither disagree/agree’ in response to sharing negative emotions, a limiting factor for accurate analysis with such a small sample. This data indicates that there may not be much difference between *opportunities* to share emotions.

While this question didn’t ask the *ease* with which one shares either negative or positive emotions, there are various reasons it may be easier to express either negative or positive emotions related to climate change. It could be easier to talk about negative emotions because we are mostly being exposed to the negative consequences. We can therefore say we feel sad, frustrated, or worried in relation to situations. However, I feel this type of sharing is only acknowledging surface negative emotions. There may be deeper emotional distress that is more difficult to express. For example, “feelings of loss, because they do not correspond to a cognitively, legally, or economically recognized loss, are difficult to express in dominant forms of discourse” (Kidner, 2007, p. 127). On the other hand, it could be easier to express positive emotions because social media prompts individuals to present a constantly happy persona to the

world. People like hearing and focusing on good things, and will often avoid negative things. Future research could look at the difference between *ease* in expressing negative and positive emotions.

Unfortunately, pre-and post-summit responses to Questions 1 and 2 could not be compared due to low response rate in the post-summit survey. At a glance a data comparison in pre- and post-summit graphs indicates there was an increase in the opportunities for sharing both negative and positive. However, if the additional six answers for the post-summit survey were to be included the percentage would likely change dramatically and could shift the results in either direction.

Figure 8: Pre-Summit Sharing of Emotion



The final part to Question 3 asked respondents to indicate their level of agreement with the statement – ‘I find it easy to share my emotional experiences around climate change/ecological issues’. The responses are displayed in *Figure 8: Pre-Summit Sharing of Emotion*. I agree with most contemporary psychologist’s, who believe that divulging emotions is a good thing (Salovey, et al., 1995). While 36% of respondents were neutral on this answer, selecting ‘neither disagree/agree’, just over 45% disagreed (9% ‘strongly disagreed’; 36% ‘disagreed’) that it was easy to share emotional experiences on climate change and ecological issues, and only 18% agreed (9% ‘agreed’; 9% ‘strongly agreed’). This indicates that the majority of people struggle to share their emotional experiences related to climate crisis.

Why would sharing emotional experiences be difficult? Do we not have the methods in place? Is there a lack of opportunity or is this a construct of our society (see compounding factors above)? Potential factors could include:

- 1) Having an adequate language to express our psychological responses
- 2) Cultural expectations about expressing emotional responses
- 3) Opportunities: Do we have a safe space, with supports?

It is especially important that we create opportunities to speak about our emotional responses to climate crisis because “when loss remains unspoken, neither grieved nor worked through, then change and adjustment cannot follow” (Randall, 2009, p. 119).

## Question 4

Although each of the sub-questions under Question 4 had their own responses and insights, themes arose from the grouping of positive and negative emotional experiences (hopeful and motivated for positive; frustration, hopelessness, and apathetic for negative).

Positive emotions occurred as a result of community and other people, or not feeling alone, from seeing new technologies or solutions for resolving challenges, through connection with nature and the outdoors, and by participating in or witnessing both local and global action that produces results. Negative emotions were brought about by three general issues: lack of action, lack of personal skills or knowledge, and unsustainable societal values/structures. The inaction and apathy of the government was mentioned numerous times, (*“political apathy”* – Orca) as well as other people not doing anything. A lack of confidence in speaking about the issues with others and effective communication skills was mentioned a few times, such as Salish Seals acknowledgment that they struggled with *“the confidence to speak up”*. Societal values and structures also came out as causing negative emotional responses, particularly in relation to consumerism and unsustainable lifestyles as well as the valuing of the economy over the environment.

A table of all responses can be found in Appendix I (Pre-Summit) and Appendix J (Post-Summit). Below I have offered thoughts on each sub-question and included a selection of responses.

### 4a – *I feel hopeful when...*

Respondents’ answers for hope were themed around two primary inspirations: people/community and positive action/solutions.

Hope that is inspired by others could be brought about by both personal involvement or being a witness. It can stem from more hands-off connections such as meeting people or being witness to action by others, as expressed by Wolf and Orca, as well as having a more personal involvement with others, as experienced by Nautilus and Sea Breeze.

*“I meet people who are engaged in finding/creating solutions.”* – Wolf

*“I see people making positive change.”* – Orca

*“I discovered a local community group that gathers to clean up garbage.”* – Nautilus

*“Getting together with a Climate Change group I joined.”* – Sea Breeze

Positive action that works towards solutions also inspires hope, and often includes others/community.

*“I see or hear of successes (big or small) in industry, policy or divestment”* – Swell

*“Surrounded by peers, others invested in finding solutions (e.g. conferences, classes)”* – Salish Seal

*“When eve I have witnessed action that created a real positive effect on the issues”* – Mushroom

*“My community comes together to clean up”* - Forest

## Post-Summit

Although there were few respondents, the hope-related responses followed the same theme as pre-summit. One respondent, #2, stated that they felt hopeful “at the Take Back the Wild Program”, which focused on action and facilitating community building both in the participants’ locality as well as within the program itself. This response also suggests that environmental education programs have the ability to evoke hope even when confronting and discussing difficult ecological issues.

### 4b - I feel hopeless when...

Themes that arose in these replies included seeing the issues first hand or through media representations, or having to confront the reality of current issues. Another theme was seeing issues that persist or could be easily managed but are not (ie plastic use and garbage disposal).

*“In urban settings, seeing a consumer-driven society, plastic use” – Sea Breeze*

*“I see examples of how our activities are affecting animals and their environment (pictures of dead animals with plastic in their stomachs, starving polar bears)” - Nautilus*

It seems size doesn’t necessarily matter - two respondents indicated the scale of problem is what causes hopeless feelings, while two other respondents indicated seeing or learning about smaller local problems evoked a sense of hopelessness.

*“Think about the scale of the problems” – Orca*

*“Hearing news about big issues (e.g. new projections for sea level rise)” – Salish Seal*

*“I learned the water in the Skeena Estuary is 2 degrees warmer than previous years at this time of year. When I allow myself to realize that we are limited to mitigating the effects of climate change, not stopping it.” - Mushroom*

## Post-Summit

Two of three responses focus on oil deals that directly impact the Salish Sea, which is the area they were focusing the conservation strategy on in the summit. Respondent #1 felt hopeless when they “*hear local First Nations gov’ts have signed on to LNG deals*”. Respondent #5 noted feeling hopeless when they “*think about the numerous threats the coast is facing in light of new LNG proposals, Kinder Morgan, Enbridge’s proposed extension.*” Yet their answer to the query “I felt hope when...” was “*I see other movements making progress or taking action like the Kinder Morgan kayak activists.*” This indicates that an EE program can evoke conflicting emotions related to the same topic and situation. Educators should be aware of this and ensure they are providing a positive counter to the potentially negative emotions aroused.

#### 4c - I felt apathetic when...

I found it interesting to read the answers to this statement, as I felt some respondents may not have fully understand the term 'apathy'. I then realized that I myself was unaware of the full meaning of the word, and so I was keenly interested to learn about its etymology. It is a word derived from *apatheia*, "a Greek word that means, literally, nonsuffering" (Macy, 1999, p. 26). This essentially means that one who is apathetic is one who is unable or refuses to experience pain (Macy, 1999).

Considering that apathy typically arises from an internal emotional state or a desire to not experience an intense emotion, I found it interesting that two respondents suggested that other people played a role in how they felt.

*People give false justifications for their actions* – Sea Breeze

*I see that people want to help but are unable to* – Forest

Apathy also arose for respondents who felt their personal actions did not align with their expectations.

*See how much recycling I generate* - Mushroom

*I was too busy with other things (eg take out food using Styrofoam)* – Salish Seal

#### Post-Summit

Related to Wolf's pre-summit response, in feeling apathetic when '*I am ignored*', Respondent #4's post-summit response indicated they feel apathetic when they "*feel unsupported*".

Three others mentioned apathy arising in response to the issues themselves, lack of support, or paralysis from the scale of the problem.

*"I read extinction stats"* Respondent #1

*"Not having support networks or people who believe in you"* Respondent #4

*"It all feels just too overwhelming"* – Respondent #5

#### 4d - I felt motivated when...

Two themes arose from this question: connection to the natural world, and seeing positive actions and solutions occurring.

Many have acknowledged the power of the natural world to invigorate us and inspire us; indeed, nature-based EE is often used to initiate care and concern for our environment (Louv, 2011; Sobel, 2006; Macy, 1999; Armstrong & Kelsey, 2012).

*"See kids/my son playing outside"* – Wolf

*"Exploring the outdoors (especially at the beach)"* – Salish Seal

*"Every day I breath fresh air"* - Mushroom

Environmental educators hoping to inspire action by young people should consider providing them with numerous examples of actions being taken, or solutions being implemented as this seems to bring feelings of motivation.

*“I see tangible solutions” - Orca*

*“I hear of new discoveries that can have great impacts on the environment (ocean cleaning systems, more powerful/affordable renewable energy)” - Nautilus*

*“I see change and actions being made. When I feel like I have reached out to someone who wants to learn how they can help conserve the environment” – Sea Breeze*

*“I see kids want to help keep things clean” – Forest*

#### *Post-Summit*

An interesting theme emerged in the post-summit survey in response to the question about what motivated participants over the past two months. All four answers mentioned other groups or individuals and taking action. Three respondents indicated their own involvement with other people on actions, and Respondent #5 indicated that seeing others do work is also inspiring. This indicates that community plays a large role in motivation.

#### **4e - The most frustrating thing about our situation is...**

Answers varied, but all responses related to external factors that individuals cannot change on their own.

The majority of respondents were frustrated over larger and more complex situations, action (or non-action), attitudes and behaviours (of individuals and government)

*“That we are made to feel powerless, it would cost “too much money/time” - Wolf*

*“It takes coordinated action, and not everyone agrees what the right action is” – Salish Seal*

*“People’s apathy or the idea that the economy is more important than protecting our environment” - Nautilus*

Two respondents cited specific situations: *“Seeing hereditary Haida chiefs promote Enbridge or LNG” - Lola Swell; “The government refuses to keep trophy hunting closed, this “sport” makes no sense” – Forest.*

Frustration with governments was mentioned twice. One example is Sea Breeze’s frustration with *“Slow political action and slow cultural shift (but it is improving!)”.*

#### **4f - The thing I struggle with personally is...**

Three respondents answered with their own communication challenges:

*“Communication. I am pretty blunt; I think it’s hard for people to palate sometimes” - Old Man’s Beard*

*“Approaching those not ‘in the choir’ about Climate Change and asking people to make changes” – Sea Breeze*

*“The confidence to speak up” – Salish Seal*

Three respondents focused on their own personal limitations in dealing with ecological issues:

*How to make a positive impact - Orca*

*Find the right ways to address macro issues effectively - Tsaanuu*

*Feeling the need for direct action, and my own limitation in being able to participate - Lola Swell*

And two respondents struggled most with other people’s non-action:

*“Other people’s apathy and/or negativity” – Wolf*

*“Interacting/living with other people on a daily basis who don’t even do the smallest things to protect our environment like using reusable items or recycling.” – Nautilus*

### Post-Summit

The high numbers of respondents feeling overwhelmed (demonstrated in Question 1) is very relatable to Respondent #1’s reply to this question: *“Feeling pulled in 1,000 directions at once.”* How could environmental education combat this?

Many respondents expressed frustration or other negative emotions about *“People with apathetic attitudes”* (Respondent #4). This frustration about others may also stem from high self-expectations around demonstrating that one is NOT apathetic. However, when a person cannot meet their own expectations, they can struggle with emotional consequences, such as guilt. Respondent #5 represents this internal conflict, in their response to the question ‘the thing I struggle with personally is...’: *“Enforcing all these strict rules on myself and trying to avoid single use items at all costs when others don’t even think about these things and then feeling extremely guilty any time I break those rules. I.e. get a coffee even though I did not have my reusable mug on me.”*

### Question 5

This question was only asked in the post-summit survey, thus only five respondents answered it. The intent was to determine how participants felt the program affected their emotional experiences. There were four sub-questions, which I discuss below. Sub-questions 1 and 2 will be discussed together.

Table 5: Responses to Question 5

	The Take Back the Wild Program...			
	helped me identify my emotions	helped me process my emotions	increased my concern and worry	made me hopeful
Strongly Disagree				
Disagree			1	
Neutral	1	2	1	
Agree	4	3	3	3
Strongly Agree				2



- 1) The program helped me identify my emotions around climate change and our ecological challenges

Four of five respondents 'agreed' that the program helped them identify their emotions, with one respondent replying with 'neutral'. This was a higher number than was expected, as there was no targeted content within the summit that addressed emotional experiences.

- 2) The program helped me process my emotions related to climate change and our ecological crisis.

Three participants selected 'agreed', while two respondents selected 'neutral'. Again, this was a higher than expected number. The summit agenda included a discussion on how to manage the stress that could arise from undertaking conservation action. However, the program facilitator indicated they don't specifically discuss other emotional experiences or challenges, nor do they include activities that deliberately assist participants' management of psychological responses to the program content.

These responses from Question 1 and 2 indicate that the program, or potentially the people, helped identify and process emotions related to experiences around climate change and the ecological crisis regardless of lack of focused intent to do so. This leads to a few follow up research questions: how did the program help identify emotions? How did the program help process emotional responses to climate change and the ecological crisis? These would likely be answered more effectively through semi-structured interviews rather than a survey.

I'd like to suggest a few potential theories in response to these questions. First, the structure of the program fosters a sense of community and connection around a topic that all are interested in. Having a community that is supportive and understanding of emotional experiences may allow individuals to acknowledge and voice emotions they were experiencing, and potentially to examine them more closely. The program offers a safe space to reflect and share, which can be very different from daily lived experiences. Second, the circumstance of being around concerned individuals that desire to take action would likely lead to hearing about others experiences, frustrations, ideas and hopes. This exchange could consequently help an individual locate their own emotional responses; in effect relating their own feelings and thoughts to those they are hearing about. Finally, there is also the likelihood that the framing of the question was too broad or not clarified enough. It would have been helpful to discuss with others what they thought the questions meant, before releasing the survey.

- 3) The program increased my concern and worry about climate change and our ecological crisis.

Unfortunately, I feel the results from this question (one disagreed, one was neutral, three agreed) cannot be used for any valid analysis, as a result of the wording of the question, which had two variables included, and the subsequent potential variation in interpretation. Although concern and worry are intimately connected, they can be interpreted in a variety of ways. Concern measures care for something, and/or the recognition of severity or importance of something (concern, n.d). Worry is the result of a concern; a distress or anxiety that is experienced from dwelling on something (worry, n.d.). Therefore, I can be concerned about something but not worried, but I cannot be worried without being concerned for something. Ultimately, the inclusion of both 'concern' and 'worry' could cause conflicting answers, or lead the respondent to focus on one over the other.

Related results or conflicts could be:

- Respondent already had high concern but low worry; the program increased the worry but not the concern.
- Respondent had low concern and low worry; the program increased both
- Respondent had some concern and low worry; the program increased the concern, but didn't increase the worry.
- Respondent had high concern and high worry; program didn't increase either because they were already very high

As a result of these potentially variable interpretations, a lesson learned is keeping the number of variables in a question to one, even if they appear similar and are related. If I was to re-write the question I would only include 'worry', as that was the intention of the question – to determine whether the program content increased an individual's worry - i.e. are they thinking about the issues more regularly and dwelling on the distress it causes.

I would expect concern to increase in a program that targets a specific issue, as the program would likely provide details and information that may have otherwise not been known. As a result, a person would more fully understand the state of the problem and its consequences, and concern would increase. Worry on the other hand, would be more variable in relation to the individual and the program design. I would argue that if the program was designed effectively, including options for action and offering hope, then worry would not increase.

#### 4) The program made me hopeful around climate change and our ecological crisis.

All participants agreed (three 'agreed', two 'strongly agreed') that the program made them hopeful around climate change and our ecological crisis.

Although there was no follow up question to ask what the program did to make individuals hopeful, the answers to Question 4 offer some insight:

*"I see community action as a result of our work"* - Post-Summit Respondent #1

*"People are responsive to my initiatives, or conversation"* – Post-Summit Respondent #4

The program's provision of concrete actionable steps and a support network seems to evoke a sense of hope. The program facilitator indicated that as part of the program content they provide information on other successful initiatives and conservation projects. Post-Summit Respondent #5 indicated they were hopeful when they heard about or saw *"other movements making progress or taking action, like the Kinder Morgan kayak activists"*.

A study by Tugade & Fredrickson (2004) found that resilient people use positive emotions to help regulate their emotions from other negative emotions. Thus, when a program can offer positive emotional experiences, such as evoking hope, related to the same topic that is bringing about negative emotional experiences, it supports a resilient response. This is especially important to consider when designing environmental education programs that will support, not hinder, emotional resiliency.

## Individual Responses

Rather than provide a full profile for all respondents (who were ultimately quite similar), I selected the two respondents who were outliers – Forest, who was fairly unengaged in responding and had higher levels of negative emotions; and Tsaanuu whose answers indicated a highly positive outlook and experience around climate change and ecological crisis. Their responses are in *Table 6: Responses to Question 1*.

*Table 6:  
Responses to  
Question 1*

	Forest	Tsaanuu
Inspired	Never	Always
Guilty	Rarely	Rarely
Empowered	Never	Always
Hopeless	Never	Never
Grief/Sense of Loss	Never	Always
Powerless	Rarely	Occasionally/Sometime
Motivated	Rarely	Always
Overwhelmed	Rarely	Occasionally/Sometime
Hopeful	Rarely	Always

### **Forest** – Low emotional expression

Forest’s responses were unusual in that all emotions were rarely or never experienced. ‘Rarely’ and ‘never’ were uncommon answers amongst the rest of the participants, so to have all emotions rated at that frequency is an anomaly. Of course, from these replies it was not hard to understand Forest’s non selection of any emotion as their most frequent (no rating of 3 in Question 2). Furthermore, Forest ‘neither disagreed/agreed’ with the statement about opportunities for sharing emotions, as well as for the ease with which one expresses emotions. While there were interesting comments made in the final question (I felt hopeful when...; I felt motivated when... etc.) they were brief. From these responses three questions arise: 1) Did Forest feel obligated to participate in the survey?; 2) Is Forest a naturally less expressive individual, or one who is less comfortable expressing emotional responses?; and 3) Has Forest numbed themselves to experiencing high levels of emotionality around the issues of climate change?

This final idea has been addressed by Macy (1999) who stated,

“When we’re distracted and fearful, and the odds are running against us, it is easy to let the heart and mind go numb. The dangers now facing us are so pervasive and yet often so hard to see – and painful to see, when we manage to look at them – that this numbing touches us all. No one is unaffected by it. No one is immune to doubt, denial, or disbelief about the severity of our situation – and about our power to change it. Yet of all the dangers we face, from climatic change to nuclear wars, none is so great as the deadening of our response” (p.23).

### **Tsaanuu** – High level of emotional expression

In Question 1, when asking about frequency of emotions experienced, we can see that Tsaanuu experienced negative emotions significantly less than positive emotions. For Question 2, Tsaanuu was the respondent who selected six top emotions experienced. Three of these were positive emotions, and three negative, indicating a fairly balanced emotional experience. Interestingly, Tsaanuu ‘agreed strongly’ that they had the opportunity to share both positive and negative emotions (the only respondent to do so for both) they were also the only participant to ‘agree strongly’ that it was easy to do so. These responses indicate that Tsaanuu is very connected to their emotional experiences and open to sharing them, which

in turn suggests that Tsaanuu is on the higher spectrum of positive emotionality around climate crisis, in comparison to the other respondents.

## Implications & Recommendations

*“Strength of heart comes from knowing that the pain that we each must bear is part of the greater pain shared by all that lives. It is not just “our” pain but the pain, and realizing this awakens our universal compassion” – Jack Kornfield, 1993, p. 75*

My intent with this research was to add to the conversation as we grapple with climate change. I hope this insight into the emotional experiences of participants in a conservation program demonstrates that climate change has a strong psychological impact, and that emotional resiliency plays a key role in our ability to be engaged and active citizens. Thankfully researchers and educators are beginning to do great work on this topic, and I pull from their ideas and add my own thoughts to compile a list of potential methods and approaches to environmental education that may better support our emotional development so that we are emotionally resilient in the face of difficult times.

Tugade & Fredrickson (2004) said “psychological resilience refers to effective coping and adaptation although faced with loss, hardship, or adversity” (p. 320), and it seems the participants in my research demonstrated psychologically resilient characteristics. In particular they have been able to use their positive emotions to counter-balance their distressing emotions (Tugade & Fredrickson, 2011). There is also the potential, based on the data, that participants may be experiencing concurrent positive and negative emotions, which Braniecka et al. (2014) indicate is the most effective coping method for well-being. So rather than viewing our distressing emotional experiences around climate change as a negative thing that reduces resiliency, we should look to these emotional experiences as an opportunity to build on and support the emotional resiliency that may already exist, and to foster it in those that may not have it.

The implications of these results are twofold: 1) those who are already emotionally-resilient may be seeking out environmental education programs as a positive counter-response to their distressing emotional experiences, thus maintaining their resilience levels; and 2) the benefits of EE around psychological resiliency may not be reaching those who are most in need of it. Thus, we must look to what could be included in environmental education to increase the reach of the field and best support emotional resiliency.

### ENVIRONMENTAL EDUCATION’S ROLE

If EE programs are fostering a connection to the natural world, which is facing major ecological challenges, or educating about climate change and other scientific areas, it is pertinent that emotional well-being is considered within their goals and aims, and that they provide hope, action, and positive emotional responses to best counter distressing emotional responses. For some, it may be fairly easy to

say: “I feel sad”, thus acknowledging that we are experiencing an emotion. While sharing can pose challenges for some, as we saw from the participant’s answers, it is having the capacity to process these emotions that is most difficult.

Joanna Macy (1999) acknowledged that fear is what is keeping us from talking about pain/guilt, and “pain is the price of consciousness in a threatened and suffering world”. (p. 27) This experience of pain however, is necessary to healing and moving forward. Similar to our need to go through the various stages of grief to move past it. Therefore, we must embrace the fear we are experiencing. The question is then, how can the field of environmental education best go about supporting psychological resilience in such trying times? Considering the range of methodologies and pedagogies there may not be a one size fits all answer. I do believe though, that there are methods, approaches, and activities suitable to environmental education that could support emotional resiliency. I’ll discuss a few options below.

A social-ecological approach to environment education that focuses on “managing for change”, supports the ability of individuals to increase their capacity to make decisions when faced with new environmental dilemma, thus “...education can promote resilience as transformations [occur] simultaneously at the level of the individual and social ecological system.” (Krasney, Lundholm, & Plummer, 2010, p. 467), therefore environmental education could promote psychological resiliency around the issue of climate crisis.

Goleman (1995) presented empathy and hope as components of emotional intelligence (cited in Catalano et al., 2004). How can EE meet these?

*Empathy* – Part I of this report shared conversations with environmental educators about EE, in which they provided clear examples of empathy building in their program.

*Hope* – Responses from the participants in the conservation program, indicated that seeing the solutions and being part of a group to implement them increased their hope.

Additionally, Catalano et al. (2004) indicated that reducing stress is a key factor in building resiliency and studies have shown that time spent outdoors and in nature can reduce stress and many environmental programs incorporate place-based learning (Hull & Michael, 1995).

Although adults also benefit from the community that environmental education can bring, incorporating positive youth development assets into EE programs would help young people in particular to develop their emotional competency. In doing so, youth would be better able to identify, label, and manage their feelings and emotions, all key factors that the W.T. Grant Consortium on the School-Based Promotion of Social Competence (1992, p. 136) listed as being key emotional abilities (cited in Catalano et al., 2004). Following the ideas of Fawcett & Dickinson (2013), I believe it is especially important to address social and emotional learning and resiliency within the environmental education framework. This is particularly important for those programs that engage with learning about ecological degradation, climate change, or other challenging social-ecological issues.

## RECOMMENDED METHODS & APPROACHES

### Art Therapy

Art therapy (drama, art, music) has been shown to be effective in helping children cope after natural disasters and other trauma, and other therapists indicate this method is helpful with adults in expressing emotions (Orr, 2007; Hasbach, 2015). This would suggest that it could be a useful method to engage people in uncovering and processing their emotional experiences around climate change.

### Building Community

Considering the multiple responses from participants in the conservation program related to community, I believe it is especially important for EE to foster community and relationships. When a key motivating factor for individuals revolves around “others” (connecting with them, working with them, seeing what others are doing), programs should ensure they are offering a space that focuses on building bridges, building relationships and building community.

### Educator Support Network

While not a method or approach, the literature is indicating that educators may be feeling their own emotional distress related to climate crisis. An educator support network would help build a community, enable the transmission of methods and ideas, and potentially help educators feel more confident and supported.

### Framing of the “problem”

Concern has been raised about the use of military phrasing such as “fight, war” when discussing climate change and other ecological issues (Uhl, 2003; Lakoff & Johnson, 2008). This continues the anthropocentric view that humans need to be in control and dominant. We must also move beyond phrasing of the issue as a tragedy and begin to view the task of transition in a new light, one that inspires hope and compassion (Kelsey & Armstrong, 2012; Fawcett & Dickinson, 2013).

### Grief Counselling Methods

Incorporating methods utilized in grief counselling could prove beneficial. For example, inclusion of rituals and ceremonies assist bereaved individuals process and cope with loss (Rando, 1985). In the case of climate change and ecological degradation, processing our loss related to the natural world needs to be addressed. Rituals related to grieving could be included in environmental education experiences. Tim, an interviewee in Part I, gave the example of the children holding the funeral/wake for a dead bee.

### Meaning Making

Finding meaning in stressful situations increases well-being in part because “it gives stressed individuals the psychological lift to help them continue and move forward with their lives” (Tugade & Fredrickson, 2004, p. 15). Environmental education can approach the distressing issues as an opportunity for positive meaning making – what can be gained through the experiences and challenges we face? What can we learn as individuals and communities? Doing this can help build resilience because it helps to broaden ones mindset when coping (Tugade & Fredrickson, 2004).

## Mindfulness and Meditation

Mindfulness and meditation training is strongly supported as a method to rekindle our inherent connection to the natural world (Fawcett & Dickinson, 2013; Macy, 1999). But while mindfulness may bring about a deep reconnection with our environment, what about the frustration, discouragement, anger and despair we face when we see others, and ourselves, continuing down the path of destruction? This may not specifically address the difficult emotional responses of bearing witness to the crisis and destruction, thus I would suggest using this method in conjunction with others.

## Popular Education and Theatre of the Oppressed

Popular education holds some potential resources and approaches that could help environmental educators grapple with the emotional side of the climate crisis. One such tool is Theater of the Oppressed, a method developed by Augusto Boal as a way to grapple with political issues. The idea is to have the ‘actors’ improvise a show that initially demonstrates the way things are, but then during the second round provides them the power to change the outcomes (Boal, 2008).

## Place-Based Education

Stokols et al. (2009), articulated the impact natural settings can have on resiliency when they stated -

*“theories of psychological restoration highlight the value of providing people access to restorative environments – those that offer respite from their usual responsibilities and routines and opportunities to replenish mental and physical energy – thus bolstering people’s coping capacity and reducing their susceptibility to helplessness” (p. 187).*

I am a firm believer that place-based environmental education provides a unique opportunity to both re-connect relationships with the natural world and recognize our resiliency.

## Positive Youth Development

One asset that is included in many youth development frameworks relates to emotional competence and intelligence. If EE focused on developing this asset in young people, and in particular children, they would develop emotional resiliency skills at a young age, better equipping them to cope with the continued challenges around climate change and its effects.

## Positive/Negative Balancing

As we saw from responses of the participants in a conservation program, having the support of others, and seeing, hearing about, or participating in solutions supports an individual’s ability to face and cope with their distressing emotional experiences around climate change.

## Work that Reconnects – The Great Turning

In Joanna Macy’s (1999) book, *Coming Back to Life: Practices to Reconnect Our Lives, Our World*, she explores a body of work that she calls “Work that Reconnects”, which “reconnects us with each other and all beings, arousing our passion for and our power to protect it” (p. 5). She goes on to offer a multitude of activities suitable for group work on exploring emotional distress related to our climate crisis, with a focus on building community and emotional resiliency.

Our pain and fear stems from our compassion, a measure of our humanity and connection to the Earth. Rather than shy away from experiencing these difficult emotions, we could embrace them as an indication that we are part of the Earth and in that find solace. Environmental education is uniquely placed to lead the way in emotional resiliency work; I also believe it has a responsibility to do so.

## LIMITATIONS FOR THE GENERAL POPULATION

Many of the educators that were interviewed for Part I of this project indicated that EE, especially non-formal, can be a privileged opportunity. Thus, there is no guarantee that all of society will have access to EE programs. Although this lack of opportunity is being addressed and more school boards are including it in curriculum, there is no provincial or national standard for content or approach in Canada. And for those who are long out of the school system, there is no guarantee of exposure to EE programming through their community or city. This could mean that most individuals will continue to be inundated with the knowledge of climate change in a hands-off manner. While some may seek out others or groups for support, many will not and sadly it is the low-resilience individuals most in need of support who are likely to hide their heads in the sand and avoid confrontation with the crisis (Tugade & Fredrickson, 2004). Without any emotional support or processes to support us through our experiences we may well continue to see apathy within many, while only stimulating a portion of the population into action.

On a personal note, this is the area where I would like to work – developing innovative outreach and engagement programs that appeal to all sectors of society so they: 1) can understand their own power in these challenging times; 2) connect with others so they don't feel they are alone in facing this challenge; and 3) collectively make the changes necessary.

## FUTURE RESEARCH

Particularly related to the research I undertook, I would be interested to see a long-term study that looks at emotional experiences of participants a year after completing a short-term program. Are the positive emotional gains maintained and experiences of the negative emotions lower? In the case above, I imagine that any increase in positive emotions could potentially be short-lived, after the initial rush of taking action and feeling inspired diminishes and participants again face the daily struggle of climate change.

There has been some discussion on the language used to frame climate change and ecological issues, with its tendency to focus on military words and phrases (Lakoff & Johnson, 2008). I would find it beneficial to see research that analyzes the long-term emotional impact of different messages. For example, one group could be exposed only to the standard messaging that is in our society today, and control another groups messaging to be only positive, and a third groups to be primarily negative. While there could be psychological repercussions from this, I would be interested to know how the framing of the issues, and the focus of the content, impacts individuals – both in their actions and in their emotional health.



The participants in the Take Back the Wild program sought out and applied for this conservation action opportunity. This indicates that they are individuals who seek solutions to the negative emotions they experience related to the climate crisis. Thus, future research could do a comparative analysis of the emotional experiences of people who are attending a program like this, and those who are not and/or have never participated in such a program. Would the emotional experiences be different, or would their responses to them differ?

## Conclusion of Part I & Part II

There is no escaping the climate crisis; there are signs that we are already very much in it. How we decide to face it is our biggest test. I hope we step bravely into the fear and walk out the other side stronger and more connected to each other and our home, the earth. To help us do this we can look to environmental education, which has the potential to be a primary source of inspiration, support, and capacity-building that will help us transition with grace, dignity, and compassion into this new era of uncertainty.

Two questions arose from this research that I feel I have been able to answer:

- 1) How can we ensure adults have developed emotional resiliency?  
By building it in young people through a focus on positive youth development assets.
  
- 2) How can we bolster emotional resiliency once they become adults, especially in times of increasing stress and crisis and higher levels of responsibility?  
By incorporating a multitude of methods that will build on the resiliency already available and by reaching a broader range of individuals.

I demonstrated in Part I that environmental education is already contributing to young people's developmental assets. If the EE field in general, and formal and non-formal programs specifically, focus on using PYD assets as a framework, they will better support young people in becoming engaged and active citizens that are confident and capable in the face of the climate crisis. It can also support their emotional resiliency, by building the capacity and ability to manage and process their emotions, increase their confidence and self-efficacy, and provide positive belief in the future.

By focusing on building and supporting emotional resiliency, both in our young people and in our general population, environmental education can play a pivotal role in facing the fear of climate crisis and in re-connecting us to the natural world and our communities. I believe that if EE aims to connect people to nature and have them care about it, the field has the responsibility to care about people's emotional well-being.

I encourage environmental educators to reflect on their own experiences, be vulnerable, be open, and be strong. Play, connect, and inspire. Be sure to take care of your own well-being so that you can support others in taking care of theirs.

To policy makers and governments: you have environmental education as a tool that will make a difference in the ways our communities and our young people experience the challenging decades ahead. Use it wisely, use it expansively, and...be brave!

**APPENDIX A – 40 DEVELOPMENTAL ASSETS (SEARCH INSTITUTE)**

<b>EXTERNAL ASSETS</b>	
<b>SUPPORT</b>	
<b>Family Support</b>	Family life provides high levels of love and support.
<b>Positive Family Communication</b>	Young person and her or his parent(s) communicate positively, and young person is willing to seek advice and counsel from parents.
<b>Other Adult Relationships</b>	Young person receives support from three or more nonparent adults
<b>Caring Neighborhood</b>	Young person experiences caring neighbors.
<b>Caring School Climate</b>	School provides a caring, encouraging environment.
<b>Parent Involvement in Schooling</b>	Parent(s) are actively involved in helping the child succeed in school.
<b>EMPOWERMENT</b>	
<b>Community Values Youth</b>	Young person perceives that adults in the community value youth.
<b>Youth as Resources</b>	Young people are given useful roles in the community.
<b>Service to Others</b>	Young person serves in the community one hour or more per week.
<b>Safety</b>	Young person feels safe at home, school, and in the neighborhood.
<b>BOUNDARIES AND EXPECTATIONS</b>	
<b>Family Boundaries</b>	Family has clear rules and consequences and monitors the young person's whereabouts.
<b>School Boundaries</b>	School provides clear rules and consequences.
<b>Neighborhood Boundaries</b>	Neighbors take responsibility for monitoring young people's behavior.
<b>Adult Role Models</b>	Parent(s) and other adults model positive, responsible behavior.
<b>Positive Peer Influence</b>	Young person's best friends model responsible behavior.
<b>High Expectations</b>	Both parent(s) and teachers encourage the young person to do well.
<b>CONSTRUCTIVE USE OF TIME</b>	
<b>Creative Activities</b>	Young person spends three or more hours per week in lessons or practice in music, theater, or other arts.
<b>Youth Programs</b>	Young person spends three or more hours per week in sports, clubs, or organizations at school and/or in community organizations.
<b>Religious Community</b>	Young person spends one hour or more per week in activities in a religious institution.
<b>Time at Home</b>	Young person is out with friends "with nothing special to do" two or fewer nights per week.

<b>INTERNAL ASSETS</b>	
<b>COMMITMENT TO LEARNING</b>	
<b>Achievement Motivation</b>	Young person is motivated to do well in school.
<b>School Engagement</b>	Young person is actively engaged in learning.
<b>Homework</b>	Young person reports doing at least one hour of homework every school day.
<b>Bonding to School</b>	Young person cares about her or his school.
<b>Reading for Pleasure</b>	Young person reads for pleasure three or more hours per week.
<b>POSITIVE VALUES</b>	
<b>Caring</b>	Young Person places high value on helping other people.
<b>Equality and Social Justice</b>	Young person places high value on promoting equality and reducing hunger and poverty.
<b>Integrity</b>	Young person acts on convictions and stands up for her or his beliefs.
<b>Honesty</b>	Young person "tells the truth even when it is not easy."
<b>Responsibility</b>	Young person accepts and takes personal responsibility.
<b>Restraint</b>	Young person believes it is important not to be sexually active or to use alcohol or other drugs.
<b>SOCIAL COMPETENCIES</b>	
<b>Planning and Decision Making</b>	Young person knows how to plan ahead and make choices.
<b>Interpersonal Competence</b>	Young person has empathy, sensitivity, and friendship skills.
<b>Cultural Competence</b>	Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.
<b>Resistance Skills</b>	Young person can resist negative peer pressure and dangerous situations.
<b>Peaceful Conflict Resolution</b>	Young person seeks to resolve conflict nonviolently.
<b>POSITIVE IDENTITY</b>	
<b>Personal Power</b>	Young person feels he or she has control over "things that happen to me."
<b>Self-Esteem</b>	Young person reports having a high self-esteem.
<b>Sense of Purpose</b>	Young person reports that "my life has a purpose."
<b>Positive View of Personal Future</b>	Young person is optimistic about her or his personal future

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## APPENDIX B – PYD CONSTRUCTS (CATALANO ET AL. 2014, P 102-107)

Promotes bonding	Bonding is the emotional attachment and commitment a child makes to social relationships in the family, peer group, school, community, or culture.
Fosters resilience	Resilience is an individual’s capacity for adapting to change and to stressful events in healthy and flexible ways. Show successful responses to challenges and use this learning to achieve successful outcomes”
Promotes social competence	Social competence is the range of interpersonal skills that help youth integrate feelings, thinking, and actions to achieve specific social and interpersonal goals. These skills include encoding relevant social cues; accurately interpreting those social cues; generating effective solutions to interpersonal problems, translating social decision into effective behaviour.
Promotes emotional competence	Emotional competence is the ability to identify and respond to feelings and emotional reactions in oneself and others. Mayer (1989) identified five elements of emotional competence, including knowing one’s emotions, managing emotions, motivating oneself, recognizing emotions in others, and handling relationships.
Promotes cognitive competence	Cognitive competence includes two sub constructs: Ability to develop and apply the cognitive skills of self-talk, the reading and interpretation of social cues, using steps for problem-solving and decision making, understanding the perspectives of others, understanding behavioural norms, a positive attitude towards life, and self-awareness. Second is related to the academic and intellectual achievement - the development of core capacities including the ability to use logic, analytic thinking, and abstract reasoning.
Promotes behavioural competence	Behavioural competence refers to effective action. Non-verbal communication, verbal communication, and taking action (helping others, walking away from negative situations, participating in positive activities).
Promotes moral competence	Moral competence is a youth’s ability to assess and respond to the ethical, affective, or social-justice dimensions of a situation. A respect for the rules and a sense of social justice. Roots of morality are in empathy or empathic arousal.” (105)
Fosters self-determination	Self-determination is the ability to think for oneself and to take action consistent with that thought.
Fosters spirituality	A survey of literature did not produce a definition of spirituality appropriate to this review...so it is defined here as “relating to, consisting of, or having the nature of spirit; concerned with or affecting the soul; of, from or relating to God; of or belonging to a church or religion. The construct of spirituality has been associated in some research with moral reasoning, moral commitment or belief in the moral order.
Fosters self-efficacy	Self-efficacy is the perception that one can achieve desired goals through one’s own actions. ... strategies associated include personal goal -setting, influenced by self-appraisal of one’s capabilities.
Fosters clear and positive identity	Clear and positive identity is the internal organization of a coherent sense of self.
Fosters belief in the future	Belief in the future is the internalization of hope and optimism about possible outcomes. Having a future gives a teenager reasons for trying and reasons for valuing his life” (Prothrow-Stith, 1991, 57).
Provides recognition for positive behaviour	
Provides opportunities for prosocial involvement	The presentation of events and activities across different social environments that encourage youth to participate in pro-social actions. The opportunity for interaction with positive oriented peers and for involvement in roles in which they can make a contribution to the group.
Fosters pro-social norms	Encourage youth to adopt healthy beliefs and clear standards for behaviour.

## APPENDIX C – EDUCATOR’S PROGRAMS

### Programs of Environmental Educator Interviewees:

Type of program	Description	Length
<i>Urban Farm</i>	Working farm with animals and growing food.	Weekly summer camps, daily drop-ins, once-a-week year-long programs
<i>Outward Bound type</i>	focus on personal development growth within	Varies from weekly camps, to monthly meetings in year-long program
<i>Summer Camp</i>	limited focus on specific environmental components, but conducted within a natural setting	Week long camps
<i>Targeted EE program</i>	Focus on the 8-shields model of inquiry; targeted nature learning	week long summer camps, weekly out of school program (during school time), monthly school program (during school time).
<i>Arts-based community connection</i>	Casual exploration of local issues about the environment	very informal drop in type of program
<i>Social and environmental justice</i>	focus is on building young people’s awareness and capacity around social and environmental justice issues	Various programs: weekly drop-ins, one-day workshops
<i>Formal Education</i>	Environmental education stream within the school with a cohort of students	2-3 years, numerous meetings weekly

## APPENDIX D - QUOTES BY ASSET CATEGORY

### General

#### Offers different views and approaches from mainstream education

FFDBI – Form Function and Duty Before Issue – the idea that you should teach the beauty before the issues. - John

“I know teachers in the school say negative things about the program, [like] environmental education is not going to get you anywhere in life” – Paul

“the mainstream education is still – the stuff we are doing is electives and this should be mainstream in my opinion. It (sustainability education) should be integrated, it should be holistic. It should be maybe part of every course, but that’s not happening.” – Paul

“I don’t believe in the public education system very much – I do and I don’t. I think probably there’s a reason for that but the curriculum is totally flawed. I think we’re creating zombies and it’s scary. I teach that. I try to empower them with the program” – Paul

“for many reasons, and one of them is because they are in a completely different place removed from the expectations of teachers, of the classroom, of all those other things that youth have changed.” – Matthew

“I would say we’re a little more accommodating to different styles of learning. Obviously, that’s a subject that is talked about a lot on schools now. And teachers are very aware of it and parents are very aware of it, and trying to incorporate different styles of learning” – Matthew

“A really large backbone of our program is in the terms of recognizing context. Part of doing that is doing what we can to help people succeed for themselves from wherever they are in life” – Matthew

#### Challenge the status quo

“It gives this balance to what young people learn in schools and get socialized into knowing...If it’s within a school it’s very easy to say, if you’re in a student mindset to say ‘okay, I’m going to learn what you teach me’. It’s a routine you are in, right? Whereas if you’re self-selecting yourself to go into a program that is outside of the school structure, there’s a bit more of this autonomy there in the ownership of what you’re learning and you’re choosing to do. What you want to be in that sense. So the brainwashing isn’t necessarily there (in EE) but you’re still taking in information you want to take in” – Chris

“I think it’s hard to try and capture what nature does. I’m not a researcher but I see a difference in these kids from the average student [who is] just following the path and not challenging or questioning it” - Paul

#### Other

“the climate change movement itself...is based on a very particular privilege that isn’t always accessible to everyone” - Chris

“I don’t know if any one of these specifically will come out of EE. I don’t know if EE programs have in their mandates they want all of these to happen” – Alice

## Program specific

### Skills

#### Creativity

“On the farm, when kids feel comfortable there after a couple of days, then you see they all go and do their creative things. Some will be carving and some will be baking, but some will just be sitting there... And they’re fully engaged in sitting there and doing whatever they are doing in their head. You can’t say that’s not constructive” – John (*also related to Constructive Use of Time*)

“EE program has more time for creativity. It gives the opportunity for doing something different that you wouldn’t find in a regular school. We sing a lot and do plays and stuff like that. We are crafting a lot. We are using our hands, which is different. We are using knives...” – Alice

“Because it’s an activity (versus school) there’s a lot more space for creativity when something is novel and exciting.” - Michelle

#### Decision-Making

“a good EE program will. And they make real decisions, not artificial decisions. Like who is navigating for the day, who’s cooking”, John “should we kill this rooster” Sarah – “versus you can do this worksheet or that work sheet because that doesn’t affect anybody else” - John

“I say so. It’s planning ahead for how much food to bring and how much water and what clothing they should wear based on the weather. I mean the parents I think do some of that, but it’s the kids that will experience being really cold if they don’t have enough clothing” - Alice

#### Resilience

“I’m thinking it can encourage resilience in the sense of taking action and taking ownership of space and issues and others” - Chris

“I would say, looking at the students who have gone through the program, that they are resilient. They, I think in the sense that they become more whole beings and they become critical thinkers a bit more. I think they start to understand that they’re seeing things and understanding things that are important and that empowers them. I think that builds resiliency” – Paul

“these kids become really strong, committed, hard-working, resilient individuals because of what we do. Because of how we empower them.” – Paul

“my students are typically resilient. They are confident and they speak about these things like “no, they matter. I see them engaging with other students about these topics that are not in [the program] defending their point of view really well. I think they challenge teachers on certain things. They tell me about it” – Paul

“resiliency is one of the identified features of our program, that’s what we’re in for really, to build up resiliency in youth” – Matthew

“I think resilience is ultimately in a lot of this work.” Tim

“Resilience is one of the buzz words of nature connection. Resilience ties into what I’ve been saying. I speak specifically knowing it can be applied more broadly. Resilience is ultimately what I think a lot of this work, nature connection, provides for people.” - Tim

“It’s not a matter of being wrong or right, it’s not about succeeding or failing. It’s about learning, and becoming your best self. And I think that...I don’t think the school system cultivates that. I had a good school experience, but I also think that the areas I did struggle (math) I felt I couldn’t make mistakes. I felt I was either good or bad. I didn’t have mentors looking at me as an individual and trying to help me. I know 8 shield programs, like outward bound, is very much about working with an individual, and not a class. Not test results. Helping an individuals grow. With their blemishes.” - Tim

“one thing about I know about resilience is that it is cultivated by emotional connection and secure attachment like trust in the people around you. Mentors, parents obviously. And I hear how in the public school system you can’t really talk to kids about what

they did on the weekend in case they say something you need to report. Or you can't touch them or even take any personal interest in any of them. It seems there is not an opportunity for connection and affection. Love too." - Tim

## Self-determination/critical thinking

EE should ensure it fosters self-determination and critical thinking otherwise "it runs into the danger of just becoming almost like a cult, like 'this is the way it's supposed to be'." - Chris

Being able to see what you're learning and how it's applied to your own life – helps develop self-determination

"there's a transformation and I think the environmental education is a piece of it because it's relevant to the world they're living in and to what they're going to inherit, essentially. So they start to understand the world in a different way" - Paul

"I think it fosters self-determination because in our framework we give them choice and decisions making within boundaries. And they do it, and it can affect their day. It can send them on a trajectory of a less successful result, but they get that choice." – Tim

"they know that I can be authoritative if I have to be, but we try to meet everyone's needs and feel things out as a group." – Tim

"I have that feedback from parents...that you are cultivating critical thinking. I think the way we do that is that we are so question based. When kids ask me a question I answer with another question that makes them ask another question and then they answer and are like 'oh!'" - Tim

## Competencies

### Cultural competencies

"I think a lot of EE programs end up at some point talking about other cultures and how other cultures have used plants or animals or have overcome certain challenges, or talk about great rights of passage, coming of age rituals and sharing stories. So maybe in a more real way, in an applicable sort of context" – John

"that one might be program specific. I know in our program we have a lot of stories from different cultural backgrounds." - Alice

"I also see a lot of EE is mostly only accessible to middle class white people. I find EE to be a mostly pretty privileged thing that only certain people can access" - Alice

"I think the beauty of EE is that you just try stuff. I think just trying stuff no matter whether you succeed at it helps self-confidence because it's not "oh I can choose to succeed at this", it's like "Oh, I can try this...self-confidence is "I'm willing to get on the horse again, even though I fell off" Romanda

"I think it challenges other levels of hierarchy of western knowledge being the dominant over other knowledges that have been around for a long time. You don't hear about them here in North America. There are a couple missing links that are not there that are really important" - Chris

### Social Competence

"I know people who come into those programs or space place learning or in very particular constructed programs who are kind of closed up individuals who don't feel belonging or do not interact very well with others. But many years later or even at the end of their programs. They are able to interact more openly. You do see changes, but minor changes depending on the program as well" Chris

"I know a few individuals who have gone from being totally closed off people to – Chris

"the setting of our outdoor camp really fosters that social connection." Matthew

Example of sharing positive thoughts about someone in a circle at camp – "that builds social competence and confidence" – Paul



“you see the growth in a lot of these kids’ social skills...they transform” – V. an example is kids who “never would have imagined” being in a club, which he now sees “them biding up friendships through that program.” – Paul

“the teachers would comment about what a great camp. [about] a person who might be a bit socially outcast – ‘wow, what a great camp they had’. You see how they interact, they’re talking to people, they were engaging.” – Paul

## Emotional Competence

“I think because we are talking about serious issues affecting lives and survival, there is a strong emotional component to it. And I think without that the program would be pretty weak.” – Chris

“often kids will want to have little class meetings with check-in’s and they’re more comfortable than most kids their age talking about their feelings and sharing with their classmates. They feel confident” – Paul

“because they are able to receive the support of witnesses, or just having somebody listen to your story instead of informing you what you should do or giving you advice...for some of them it might be the first time being able to talk about those things because it’s based on family or it’s based on friends back at home and it’s very personal. So, by being removed they’re able to gain some strength by sharing that piece. And for some participants it’s moving past it.” – Matthew

“emotional competence is a huge one! The example that comes to mind is being in the forest – again because it’s a responsive matrix, a lot of times what you put out there will be reflected back at you. An example is, if you are angry and go crashing through the bushes then you get wacked in the face from a branch ‘cause you were not paying attention. I feel like it’s a direct reflection of the emotion that you bring to a situation, and an impersonal response. I ask “How did that feel? What happened there? Next time do you think you could try something other than running off, like maybe sitting down. Doing sit spot. breathing?” – Tim

“EE is often being out in the elements, and I think about a rainy day, and about being cold and wet and getting through a rainy day. I think the biggest teaching point about a rainy day is teaching the young people how to cope with being uncomfortable. They would be exposed to different ways of coping with a situation that they can’t change. Then they get home at the end of the day and have a warm bath and see they got through something that was turmoil for them. I think that also plays into self-efficacy...I can get through something challenging” – Tim

“having a mentor around to show you ways of coping, is like a framework for showing you how to deal with distress more broadly”  
Tim

## Behavioural Competence

“Sometimes a lot of discussion happens around challenging ideas, and challenging \*\*\*, and challenging identities. That can be confrontational so there is a need to learn how to communicate in a way that you don’t cause conflict, and to deal with tense situations. To deal with conflicting ideas and conflicting structures even within society” – Chris

“conflict resolution skills – we teach those...the idea is how to move from conflict to conversation and how do you use objectivity and how to attach emotion to things properly to resolve conflict. To not get into an argument with people but to have an actual conversation. For me as a participant, I know that’s a piece I used as a teenager. Like going back to my own friend groups being like, ‘hey I know how to do this. And then being able to solve a conflict amongst my friends” – Matthew

“I puzzle this one out in my brain...I know that there is a kind of definition in our minds of like what is unruly behaviour and all of this.... if we talk about context one person’s version of appropriate behaviour is definitely not appropriate in other people’s eyes. I’m always troubled by learning requirements where conduct is policed” – Michelle

## Cognitive Competence

“these kids become confident, become outspoken but at the same time very humble like. They talk about nature and being humbled by nature, showing appreciation about what nature does for us” - Paul

## Positive participation in the World

### Service to Others

“I want to pitch it more to the kids on the farm that we are going to go do this as service to others” – John

“I think it (EE) can give them different opportunities to help out in different ways within their community” – Alice

“this needs to happen for sure, whether programs manage to link youth back to a support network and with other people who are also concerned about some issues” - Michelle

### Constructive Use of Time/Restraint / pro-social norms

Sarah & John didn't feel the construct of Constructive Use of Time was a suitable question. They challenged “who's idea of what is constructive is informing this”? Constructive can be different for different people.

“I think you naturally make good use of your time if you're not afraid to do it.” John implying that because you have self-confidence and feel empowered you would make good use of your time.

“On the farm, when kids feel comfortable there after a couple of days, then you see they all go and do their creative things. Some will be carving and some will be baking, but some will just be sitting there... And they're fully engaged in sitting there and doing whatever they are doing in their head. You can't say that's not constructive” - John

“I think a lot of youth with issues with behaviour have gotten used to the feedback loop of being the one that acts up.... I think when there is a new project, a new context, a new something where youth are asked to work it out together, there is a space that opens that wasn't there previously” – Michelle

“I think the way we would define resistance or the things we think kids should be resistant to, are not necessarily what they think they should be resistant to. You know, this is values based. It's saying are students able to resist the things we say you should value” John

“I think if kids are really engaged in EE it gives them another, like they can rather go outside and focus on the projects outside, or go for a hike or something. Having the comfort and knowledge they can be outside and have a good time they might not do other more harmful things. I feel like EE can sort of give another opportunity or enable kids [with another] choice if they have the comfort and understanding that they can do really fun stuff outside” – Alice

“Certain situations can enable kids to make their own decisions and have a strong ... like I think what EE can do is help kids develop independence. And with a strong independence they can say no to certain things like that with peer pressure. and in terms of dangerous situations like a lot of EE programs I think will teach risk management and that sort of thing.” - Alice

Does EE foster Pro-social norms “yes it does. It provides a space or option to do things that can take a lot of your time. But it's also feeding those needs or parts of yourself that might otherwise be attracted to ...you know drugs” – Chris “Like belonging, community, sense of purpose. Not being bored. Being active. Those things”

“I feel like that is a longitudinal thing, and there are so many different factors. At least in our programs we have safety agreements, so within our programs we don't encourage harm, or dishonesty, or violence. And that behaviour isn't reinforced.” – Tim

### Responsibility

“when you are doing trip based EE you're responsible for your own self in a way that you are not usually.” Sarah

“you don't feel responsibility for anything unless you know about it” - John

Indicator “clean up their own garbage. Just taking care of their own bodies and own selves” – Alice

“I think a lot of youth with issues with behaviour have gotten used to the feedback loop of being the one that acts up.... I think when there is a new project, a new context, a new something where youth are asked to work it out together, there is a space that opens that wasn't there previously” - Michelle

“what you see is them coming back and using the communication skills that they learned the previous summer and maybe they're helping somebody who is new to camp, or who's not getting it. Going out of their way to be like 'hey, want to hang out?'" – Matthew

“in terms of integrity and honesty and responsibility I feel like all of those happen naturally for kids that come to our program, from the stories we tell and from the activities we do.” - Alice

## Engagement in Learning

“I would say they are all super engaged in what we do at the program” – Alice

Indicator – “we tell a story in the morning then throughout the day they will be talking about the story or like connect things that they heard in the story to what's going on. Or will talk about it weeks later. Or they will be singing a song we taught them” – Alice

“kids take their parents to their special spots, or teach them plants, or go for a walk in the forest” Alice

“for a lot of kids coming from places that are city or more urban, that experience [being in the forest at a camp] – it put them in a place where they were more willing to participate with the camp overall. They were more excited about it because it was really removed from what they know and that's something we...participants talk about that a lot in terms of 'this is so different than my everyday life.'" – Matthew

“I've had this conversation with participants...for anyone who is from a city or very large town, it was a very revitalizing aspect of camp, being in the environment in a way that they're not used to.” - Matthew

“the best part is that most of that motivation comes from themselves. We teach the skills but ultimately they have to decide if they want to make use of those things and where it takes them for the rest of their life” - Matthew

“[Kids] using their own motivation [for] learning on their own at home, trying to figure something out. Students are going home and still thinking about what they were learning about in school that day or actually wanting to know more, and looking it up themselves, spending their own time adding to their knowledge base” – John

John emphasized this is very different to school homework/learning – which is extrinsically motivated (grades, must do it).

“their parents say if they have some sort of home school project they will choose to do it on something they have learned at nature schools so that they are actually do like research on particular species or something because we have been talking about it in nature school or because we saw it or something like that” - Alice

## Morals/ Social Justice

“I think in terms of making a connection to the natural world and getting outside. I think for sure building a strong moral character and having a sense of purpose come out of that” - Alice

“My big focus is climate justice. Connecting all the injustices and inequalities. Everything is connected to the destruction of the planet and what our role is in that” – Paul

While there are many he believes are “superstars”, Paul also acknowledges that “there is a lot of other kids who are – they really struggle with what they've been taught here...Their moral compass is – they really struggle with it.” – Paul

“they definitely have a wider scope of the rest of the world and not just their internal self” – Alice

“they stand up for something that's unfair, they will stand up for the protection of a special place in the forest.” Alice

I think you develop a kind of understanding of right and wrong, but there's still a bit of grey zone” – Chris

“there is a development of right and wrong, understanding morals on the cause and ethics around some issues. It helps you become a critical thinker” - Chris

## Caring/Empathy/sensitivity

“often you’re just in a different environment...and as soon as you are out of your comfort zone you require empathy skills to be used with each other.” – Sarah

“kids are put in different situations with people, they are not just in a classroom doing independent work. It’s like ‘ok we have to work together as a group, we have to figure this out together’. So I think there is a lot of situations that come up where having empathy and being sensitive to other peoples needs is pretty important and seen as a valuable skill within the community we are trying to create with the kids. I think it shows in how they start relating to other people and other people in their home” - Alice

“one of the activity we also do is – there’s a piece at the end where they write a letter to the earth, which they write on a piece of paper and then stick on a tree. The process of that, of writing that letter is about this knowledge (of environmental issues) and the recognition is really important. That there’s these things going on but what we can do as people, any small steps we can take, is what we should focus on” – Matthew

“What you see is them coming back and using the communication skills that they learned the previous summer and maybe they’re helping somebody who is new to camp, or who’s not getting it. Going out of their way to be like ‘hey, want to hang out?’” - Matthew

“Compassion looks like someone intervening when another child is tearing a branch off the plant or tree. Or a child creating a ceremony and burial for a dead bee. Just feeling sadness when they experience death or when they see suffering in other life forms. It’s thinking beyond themselves.” – Tim

“they usually have experienced what is a fair bit of team building in EE, so that can change the social dynamics (of a school class), and relationships” – Sarah

“not always but often it is an opportunity to become a more cohesive group” because they have had to share experiences they would not have otherwise done so and need to work together to “get through something” – Sarah

“on longer, trip based EE there is more vulnerability. There is more opportunity to show caring to each other” Sarah

“I think connecting to nature has an inherent link to caring in general” – Sarah

“I feel like caring is definitely like what we see it something that... especially at the summer camp or something for kids that aren’t in our regular programming we see it as something that sort of just stems naturally out of them coming for the week. they start helping with other people” - Alice

“also just a natural beginning to care about the natural world around them, like they start to care about the wild being or plants. They point out to other kids ‘oh we can’t go there because there is a bird’s nest’. And they start making those connections, like wanting to care about those things” – Alice

“in our program we encourage kids to help each other rather than ask us for help. We specifically want kids to start doing everything on their own to help them gain their own independence and to start helping each other and do other things. I don’t know every program would do that or not” – Alice

## Spirituality

“I think any form of work towards social justice is actually rooted within, like a very heart-based approach. I think that if we don’t do it that way then we are actually losing out on an important component.” – Michelle

“I think spirituality is living to our fullest notion – what our trust are or the dignity of who we are as human beings seeing ourselves within a greater whole and collective.” - Michelle

“I think EE can definitely go there, I think it actually would be deeper and more interesting if it did” - Michelle

“I think it can. It should...maybe.” “I think it’s almost understanding that things are beyond you. I guess in EE it’s a lot of trust in nature and the systems that are not human. I think there is a trust and understanding that there is a thing that is happening that you are apart of that you don’t control but you do control. That you understand there is a whole network of things happening around you, and have been happening. And I do think that requires some spiritual...it requires a belief in something.” – Chris

“It requires a reflection around connection to the outside, not just connection to the inside” – Chris

“I do see it in some of my students. Quite a few of them. Like in our round circle, the reflection one. They love the meditative stuff; they write about it. I’m not sure in the long-term if they start to seek out different spiritual meditative practices.” - Paul

“for me, it’s about nature. It’s connecting with nature and knowing our place in the world and understanding what makes us human. What’s our real purpose in the world? So we talk about how important that kind of stuff is and how technology has really destroyed our connection with nature.” – Paul

“I think talking about spirituality is – I think it’s part of human nature” – Paul

“the kinds of things I have seen is kids who – I see a lot in their writing but I also see it a bit in their behaviour. They start to worry less about what other kids thing and how they fit in and start to understand the context of the world. A different view of the world and their place in it.” – Paul

“I think there’s a spiritual thing going on. I think they’re starting to understand themselves a little bit better and a bit of the façade of what our society is.” - Paul

“I really feel the work I do fosters spirituality. Spirituality in my mind is being more defined like being a part of or belonging to something larger than yourself. Just...it’s inherent of the work, feeling like ‘heey, it’s not all just about you’” – Tim

“I think EE has a huge place for that. I think it’s the place where kids can learn to understand nature and how everything is connected.” – Paul

“as we move to the forest, not just ‘we belong here’ but we are also guests...it’s sort of being part of the forest.” – Tim

“one’s compassion...feeling part of something larger and recognizing their own connection to that. I think in order to feel that connection you need to have compassion for things that are beyond yourself.” – Tim

## Positive Identity

“I think it [EE] contributes to developing identity, or parts of identity. That’s a fluid construct” - Chris

John suggested that you can’t really have positive values without a positive identity.

## Commitment to learning

“kids that come to our program that miss school once a week or once a month are more motivated to get their work done so they can come to our program. and they seem to have like a better, or from what we heard from parents is they tend to be able to concentrate on or focus a little bit more on school once they have had their time in the wood” – Alice

“commitment to their own learning curiosity” – Sarah

“it gives opportunity for kids where the public school, regular school, that doesn't work. It enables them to see they totally competent in other skills and they don't have to focus on what they are learning in schools because they can do all these other things.” - Alice

“they choose to come to [our program] rather than do other things. So I found they definitely committed and have like an honor ship around coming to the program” – Alice

## Self-efficacy

“this is a really important one. A really important way is through modeling” using an example of learning to grow food “I think that’s a really transformational thing cause it’s like a new thing you were able to achieve and so in that sense youth feel more empowered to do it again, seek out the opportunity, to tell others about it.” – Michelle

“The saying that ‘young people are the change for the future, it’s up to you now to take it on.’ I think that kind of narrative, it puts a lot of pressure when there aren’t enough systematic ways for youth to be change makers at high levels. Do [they] have access to power?” – Chris

“I think that’s where a lot of frustration comes into play. You are setting yourself these high expectations of what these changes look like, of what needs to happen. And then you don’t have access to it. It’s almost a defeating crush. Everyone is saying this but why can’t we get there?! It’s a helpless feeling” – Chris (OTHER REPORT)

Michelle’s program specifically sets out to empower young people in social and environmental justice. Their structure is dialogue and so they teach youth how to critically analyse by doing it in a workshop about an issue.

### Self-awareness

“we have a lot of reflective pieces. One day will be self-awareness. Sessions around raising your self-awareness, so learning about yourself, learning about the nine intelligences. Or there might be communication so that’s conflict resolution skills.” – Matthew

In describing how building a fire can build self-efficacy - “There are these thresholds that are imposed by natural conditions that kids can work towards [overcoming] and not take personally. When they achieve that (building fire) then they experience self-efficacy. Especially when they are... mentored in a way that supports growth through failure and its not seen like failure. It’s more of a step towards achieving that goal. But when they finally do achieve that goal they definitely feel self-efficacy and then take that and apply it to other things around them” – Tim

To phrase self-efficacy to a young person “I feel like using the word ‘do’. Can you do this?” – Tim

“if you want to learn a new skill or learn something new, do you think you have the ability to do that? Do you have the ability to learn?” - Tim

## Self-Esteem

“trying something I think builds self-esteem. Being outside your comfort zone, and successfully stepping back into your comfort zone for self esteem” Sarah

“I always see everyone trying something new and they always succeed because they only step so far out of their comfort zone” – John

“self-esteem is how happy you are with who you are, or whether you succeed at something or not. But self-confidence is “I can do everything”. So you can have a kind of general self-esteem and then you can have self-confidence in different areas” John

“to me I see self-esteem as being like “I am a good person”, that in the way she views herself in a positive light. Versus self-confidence is like the courage to do or be.” Sarah

“In terms of self-esteem I think that EE can give people opportunity to do things they wouldn’t experience in other aspects of their own life which gives them like a really positive outlook on... it like enables them to feel really capable and that in turn can up their self-esteem for sure” - Alice

Indicator: “Yeah or they are more willing to try ... just try something new” Alice

“the kinds of things I have seen is kids who – I see a lot in their writing but I also see it a bit in their behaviour. They start to worry less about what other kids think and how they fit in and start to understand the context of the world. A different view of the world and their place in it.” – Paul

## Sense of purpose

“a sense of purpose too I feel like EE can enable kids to change their ambition through their goals to be like more beneficial to the rest of the world. A lot of kids want to grow up and be nature educators that we work with and this is something that they are really working towards. And it’s a really purposeful thing to teach others about nature” – Alice

“I strongly believe it’s because of the...they feel empowered because what they are doing is relevant. And when I talk about relevance I talk about how am I going to be in this world? How am I going to be as a human being? What is my connection to nature through EE, through justice and fairness?” - Paul

## Positive View of Personal Future

“I think it can give people more positive outlooks. Give them a sense for different opportunities that are out there in the world or that their life doesn't have to be in a certain way. That there is opportunities and choices other decisions that they can make” – Alice

“I feel EE offers a different skill set, and different skill base. Like maybe access to different choices. Because you're being outside and being in a lot of different situations when you really have to think fast, and use different skills and really have to use your body” – Alice

“EE opens more possibility and opens different forms of engagement. So options exist for someone who probably thinks options don’t exist within a space where everything is prescribed.” – Michelle

“from looking at those surveys, participants directly stated that being outdoors, being in the environment put them in a place where they were more comfortable. Where they were – like felt happier. Just genuinely happier to be out in the woods.” – Matthew

“I think there is always an attempt, greater flexibility, with offering a space to truly see themselves as valuable as contributors to what’s going on.” - Michelle

## Fosters belief in the future

“well yes of course. Yeah for sure because with EE I mean, we’re trying...we’re all thinking about the future.” - Michelle

“umm, cynical answer? The real answer? (laugh). It can go either way I think it (EE) can foster this idea that you are a change maker and that you can make a difference and that there is hope. And there is hope. I think the flip side of that and danger is also with the frustration and challenges of getting to where you want to go. That can cause a kind of hopelessness.” - Chris (Other report)

“I think that creating aware citizens, there is a sense of hope that has to go with it. Why would you educate if there is no outcome? Not that you have to prescribe solutions, but so we can have a collective vision” – Chris

“I think because ...in our programs one of my goals is...we’re focusing on passion based learning, unique interest gifts. And by cultivating those I believe you increase someone’s first worth and self-efficacy, and in doing that I feel that would lead to hope in the future because you have value in yourself. And if it’s a community where that happens for everyone, then everyone is valued, and you value others. I guess that one thing as a mentor is, I’m trying to...when I see a gift and I try to cultivate a talent I express that to them and they decide what they do with it. If they believe their gifts are valuable and they have value in the world, then they want to share those” - Tim

## External Assets

### Youth viewed as Resources

“I think there is a lot of potential in programs like this to make youth feel like they can be resources. To give them useful roles in the community” – Sarah

“the ultimate goal is the kids to get involved so they have an outlet to create change, positive social change, that empowers them and they feel good about. But again, I don’t think that stuff is valued enough in our society because it’s ‘volunteer, it’s extra hours blah blah blah. It’s not going to make you money” - Paul

## Safety

EE “builds confidence which makes them feel more safe” – John

“I think EE has the potential to make people feel safer in the natural environment” – Sarah

“EE could really contribute to expanding where a young person feels safe. Where you can go comfortably” – Sarah

“we do a lot of things where the kids don’t feel completely safe at first, like getting into a canoe. But by the end of it they feel safe in that environment and will go back to it. It’s hard to step into it if you don’t feel safe unless you feel you are being supported in it by your EE educators” – Sarah

Indicator - “they feel safe talking about stuff that ‘s going on at home with someone within the program or they just feel more able to be themselves within the program”

“our whole thing is about creating a safe space. We have an activity the first day...where we establish what we want to experience this week and what we don’t want to have here this week. It’s a social contract essentially” – Matthew

“A big thing for me last year was realizing we are teaching survival but the fundamental most important work I was doing is what people call ‘heart work’. Providing a safe space where people can be themselves. Being someone they can trust and feel safe with. And being someone who can see them and try to help them get where they are going. That comes from a knowledge of who they are and that can’t happen unless you know the person and have trust. That is usually a product of secure attachment and bonding”  
Tim

## Role Models

“I think adult role models is the most promising one. EE educators tend to be people who have life experience in their field. I think of a role model as being a bunch of things, but one of them is being someone who is passionate about something in life, and EE educators tend to be that” – Sarah F

“EE give them access to adults in their life that they wouldn’t have otherwise” – Alice

“I would say that’s pretty important, like they should be providing role models. Like the people teaching the programs should be having a positive influence on people” - Alice

## Recognition – reinforce the individual’s motivation to engage in positive action

“it’s more along the connection of, the social aspect, feeling of belonging...feeling connected to a community, to a space. A feeling of purpose. Kind of intangible self-fulfilment feel good kind of things” – Chris

“I think somewhere inside intrinsically, they’re feeling that this (EE) is valuable, but the force of mainstream society also overwhelms them” – Paul

## Bonding

“I think as long as there is a project component to EE then bonding is what happens with good facilitation” – Michelle

“there’s definitely a strong sense of community...you see it again, physically present you see the bonding. You see they’re cooking together; they’re doing all sorts of things together.” - Paul

“youth feeling like they can speak more strongly about their own experiences or naming challenges, being able to actually put word to what that is and not feel like that is a dead end. There is a will to do something and there is that determination” – Michelle

“I think that there is that connection when you’re working towards something like a common cause, you’re working on a project, working closely together, that kind of developing togetherness” – Chris



“having a space...I guess some sort of an experience where you are able to share your experiences, share your thoughts and kind of open up and connect” - Chris

“in my understanding of EE, and the people who I meet that are working in it, they care about the people they are working with, they are invested in them and they are bonding with them. And those bonds matter.” -Tim

“I feel like facing adverse conditions and challenges and overcoming them is so much of what EE is. In this situation you are vulnerable and you have to trust people. You have to work together and have to communicate. All of those things promote bonding” -Tim

“we had an activity once talking about stories of objects they had found at the ravine. This one kid was like ‘This tree, it’s dying, and I just feel so sad for it!’ ...and I’m like ‘Oh my god, that’s a connection!’ – Chris

“I think there’s definitely an impact being surrounded by the environment and what that impact is really different based on the individual. Where they’re from, what their relationship to nature is already. I would say, generally no matter what, I think it has a positive impact in our program still.” - Matthew

**APPENDIX E – PROGRAM SELF-REFLECTIVE ASSESSMENT**

Asset	Description	Structural Indicator (3-8)	Example of Outcome
<b>Safety/ Risk Management</b>	Physical safety; setting/location is safe; provide opportunities to test personal risk boundaries; respectful and inclusive social environment; support for self-expression; open communication	<ul style="list-style-type: none"> <li>○ <b>List 3-8 indicators the program has in place within its structure/design</b></li> <li>○ E.g. at the start of each day instructors define the boundaries of the space</li> <li>○</li> <li>○</li> <li>○</li> </ul>	<p><i>Provide one example of a scenario which resulted in a positive experience for a participant.</i></p> <p>e.g. one participant had never been in the forest before. He was scared because it was dark and he was worried about animals. We talked about how to be safe in the woods, set up a buddy system, and started at the edge of the forest, slowly progressing further in each day. By the end of the week the participant was sneaking alone through the forest to arrive to the program while his parents walked the path.</p>
<b>Caring Climate / Bonding</b>	Building trusting relationships; sensitivity of what youth are experiencing; mentoring – peer to peer, or instructor to participant; team building activities; opportunities to share; opportunities to work together to achieve a task; culture of honesty	<ul style="list-style-type: none"> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> </ul>	
<b>Boundaries &amp; Expectations</b>	Provide clear behaviour expectations; de-briefing sessions; opportunities to reflect on personal and group performance; establish positive social norms; provide clear rules and consequences	<ul style="list-style-type: none"> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> </ul>	

<b>Empowerment &amp; Resilience</b>	Responsibility granting; youth given useful roles; support emotional regulation; offer opportunities for stepping out of comfort zone; share decision making power; value youth as experts; recognize accomplishments; encouragement and guidance in rising to new challenges; opportunity for reflection	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
<b>Prosocial Involvement</b>	Activities across different environments; service learning; community building; integration of various facets of youth's life	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
<b>Other Assets</b>	<ul style="list-style-type: none"> <li>• Provide role models</li> <li>• Engage in creative activities</li> <li>• Supports spirituality</li> <li>• Parent involved in Schooling</li> </ul>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	

Adapted from the following: Schusler, , Catalano, Developmental Assets.

## APPENDIX F – PARTICIPANT ASSESSMENT

Please select the option that best represents your answer to each of the questions about your experience in the [*program name*] program.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I could be myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt respected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expectations were made clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I knew/understood the rules and consequences for our group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We had a group agreement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 <b><i>The instructor...</i></b>					
provided a welcoming environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cares about me as an individual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
was a good role model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 <b><i>I had the opportunity to...</i></b>					
Support and help others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
try something new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
share with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
take the lead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
learn about another culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 <b><i>My group...</i></b>					
got to make some of the decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cared about each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supported each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked together to achieve something	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## APPENDIX F CONT'D

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
<b><i>My participation in the program...</i></b>					
Gave me more self-confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helped me see new possibilities for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased my respect for the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helped me feel optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was a good use of my time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helped me to speak my opinions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*Made me feel I can do something positive for the world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 <b><i>I felt...</i></b>					
my input was seen as important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
valued and appreciated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
good about myself at the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was an important part of the program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
encouraged and supported at all times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wanted to share what I learned in the program with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## APPENDIX G – PARTICIPANT ASSESSMENT SCORING INSTRUCTIONS

Each question is associated with an asset and is given a score based on the rating (see below for charts). If an asset has more than one question associated with it, the scores must be added together and then divided by the number of questions to produce the score.

Programs should aim to achieve a score of five for each of the listed assets, which would represent a high level of contribution to that asset for participants.

Scores can be completed per individual and/or amalgamated for a total program score.

Asset	Questions	Divide score by
Safety	1, 2, 3	3
Boundaries and expectations	4, 5, 6	3
Caring school environment	7, 8, 32	3
Role model	9	
Caring/empathy	11, 17, 22	3
Creative activities	12	
Bonding	13, 18, 19	3
Planning & Decision-making	14, 16	2
Cultural competency	15	
Self-esteem	20, 30	2
Belief in the future	21, 23, 27	3
Constructive Use of Time/ProSocial Norms	25	
Self-determination/Critical thinking	26	
Youth as a Resource	28, 29	2
Engaging in Learning	33	

Rating	Score
Strongly Agree	5
Agree	4
Neither Agree or Disagree	3
Disagree	2
Disagree Strongly	1

## APPENDIX H - EMOTIONAL EXPERIENCES SURVEY

The following questions ask about your emotional experiences that have arose with hearing, learning, seeing or experiencing climate change and ecological challenges. **When answering the questions below please think about your affective experiences in the LAST TWO MONTHS.**

**1. When thinking about the ecological challenges we are facing, I have felt...**

	Never	Rarely	Occasionally/Sometimes	Often	Always
anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
empowered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
grief/sense of loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
powerless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
motivated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
overwhelmed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
hopeful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2. Of these emotions, which three did you experience most in the past two months? (use 1-3, with 3 being the most often):**

hopeless	<input style="width: 100%; height: 20px;" type="text"/>
empowered	<input style="width: 100%; height: 20px;" type="text"/>
inspired	<input style="width: 100%; height: 20px;" type="text"/>
powerless	<input style="width: 100%; height: 20px;" type="text"/>
anxious	<input style="width: 100%; height: 20px;" type="text"/>
grief/sense of loss	<input style="width: 100%; height: 20px;" type="text"/>
overwhelmed	<input style="width: 100%; height: 20px;" type="text"/>
hopeful	<input style="width: 100%; height: 20px;" type="text"/>
guilty	<input style="width: 100%; height: 20px;" type="text"/>
motivated	<input style="width: 100%; height: 20px;" type="text"/>

## APPENDIX H CONT'D

### 3. In the past two months...

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Agree Strongly
I had the opportunity to share or talk about my negative emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the chance to talk about and/or share my positive emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to share my emotional experiences around climate change/ecological issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 4. Again thinking about your reactions/emotions the past two months around climate change/environmental issues:

I felt hopeful when

I felt hopeless when

I felt apathetic when

I felt motivated when

The most frustrating thing about our situation is

The thing I struggle with personally is

*The Following question was only asked in the Post-Summit Survey*

### 5. The Take Back the Wild program has ...

	Strongly agree	Agree	Neutral/don't know	Disagree	Strongly disagree
helped me <b>identify</b> my emotions around climate change and our ecological challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helped me <b>process</b> my emotions related to climate change and our ecological challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
increased my concern and worry about climate change and our ecological challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
made me hopeful around climate change and our ecological challenges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## APPENDIX I - SURVEY QUESTION 8 RESULTS PRE-SUMMIT

	<b>In the 2 months PRIOR to the summit</b>
I felt hopeful when...	<ul style="list-style-type: none"> <li>• I meet people who are engaged in finding/creating solutions - <i>Wolf</i></li> <li>• I see people making positive change - <i>Orca</i></li> <li>• I know we can make healthy choices to lower the risks we take as mankind to protect our future fate - <i>Tsaanuu</i></li> <li>• I discovered a local community group that gathers to clean up garbage - <i>Nautilus</i></li> <li>• I see or hear of successes (big or small) in industry, policy or divestment - <i>Lola Swell</i></li> <li>• Surrounded by peers, others invested in finding solutions (eg conferences, classes) – <i>Salish Seal</i></li> <li>• Getting together with a Climate Change group I joined. I hear presentations by Paul Nicklin and Christina Mettmeier – <i>Sea Breeze</i></li> <li>• Example: BC Government created a park around “the Ancient Forest” near to Prince George...or when eve I have witnessed action that created a real positive effect on the issues - <i>Mushroom</i></li> <li>• The panama papers were released and every time Bernie Sanders wins a state primary</li> <li>• My community comes together to clean up, garbage is an issue - <i>Forest</i></li> </ul>
I felt hopeless when...	<ul style="list-style-type: none"> <li>• Issues persist/get worse - <i>Wolf</i></li> <li>• Think about the scale of the problems - <i>Orca</i></li> <li>• Our government doesn't agree with our need to seriously address these issues - <i>Tsaanuu</i></li> <li>• I see examples of how our activities are affecting animals and their environment (pictures of dead animals with plastic in their stomachs, starving polar bears) - <i>Nautilus</i></li> <li>• I have to constantly fight the “we use oil so we can't talk” arguments - <i>Lola Swell</i></li> <li>• Hearing news about big issues (eg new projections for sea level rise) – <i>Salish Seal</i></li> <li>• In urban settings, seeing a consumer-driven society, plastic use – <i>Sea Breeze</i></li> <li>• I learned the water in the Skeena Estuary is 2 degrees warmer than previous years at this time of year. When I allow myself to realize that we are limited to mitigating the effects of climate change, not stopping it. - <i>Mushroom</i></li> <li>• I see the amount people dump garbage and litter around bc especially the north coast, terrace and prince Rupert area</li> <li>• Not long after a community clean up, it looks the same again real quick. - <i>Forest</i></li> </ul>
I felt apathetic when...	<ul style="list-style-type: none"> <li>• I am ignored - <i>Wolf</i></li> <li>• Encountering others who do/care little for the environment. More a feeling of is all this effort on my part worth it when others actively contribute to climate change and don't care or are unwilling to change - <i>Nautilus</i></li> <li>• I hear of local youth leaving to work in the oil fields (less lately!) - <i>Lola Swell</i></li> <li>• I was too busy with other things (eg take out food using Styrofoam) – <i>Salish Seal</i></li> <li>• People give false justifications for their actions – <i>Sea Breeze</i></li> <li>• See how much recycling I generate - <i>Mushroom</i></li> <li>• I see that people want to help but are unable to - <i>Forest</i></li> </ul>

I felt motivated when...	<ul style="list-style-type: none"> <li>• See kids/my son playing outside - <i>Wolf</i></li> <li>• I see tangible solutions - <i>Orca</i></li> <li>• Wake up every morning alive - <i>Tsaanuu</i></li> <li>• I hear of new discovers that can have great impacts on the environment (ocean cleaning systems, more powerful/affordable renewable energy) - <i>Nautilus</i></li> <li>• 7 year-old surfers tell me they want to be marine biologists - <i>Lola Swell</i></li> <li>• Exploring the outdoors (especially at the beach) – <i>Salish Seal</i></li> <li>• I see change and actions being made. When I feel like I have reached out to someone who wants to learn how they can help conserve the environment – <i>Sea Breeze</i></li> <li>• Every day I breath fresh air - <i>Mushroom</i></li> <li>• I realized both the government, industry, the port authority, and first nations were overlooking easy solutions that can work for everyone in the industrial development, marine planning and sustainable development of the north coast area</li> <li>• I see kids want to help keep things clean- <i>Forest</i></li> </ul>
The most frustrating thing about our situation is...	<ul style="list-style-type: none"> <li>• That we are made to feel powerless, it would cost “too much money/time” - <i>Wolf</i></li> <li>• Political apathy - <i>Orca</i></li> <li>• Having to choose between economy and environmental sustainability - <i>Tsaanuu</i></li> <li>• People’s apathy or the idea that the economy is more important than protecting our environment - <i>Nautilus</i></li> <li>• Seeing hereditary Haida chiefs promote Enbridge or LNG - <i>Lola Swell</i></li> <li>• It takes coordinated action, and not everyone agrees what the right action is – <i>Salish Seal</i></li> <li>• Slow political action and slow cultural shift (but it is improving!) – <i>Sea Breeze</i></li> <li>• The degree to which our society has been divided on these issues by greed and/or ignorance - <i>Mushroom</i></li> <li>• The government refuses to keep trophy hunting closed, this “sport” makes no sense. - <i>Forest</i></li> </ul>
The thing I struggle with personally is...	<ul style="list-style-type: none"> <li>• Other people’s apathy and/or negativity - <i>Wolf</i></li> <li>• How to make a positive impact - <i>Orca</i></li> <li>• Find the right ways to address macro issues effectively - <i>Tsaanuu</i></li> <li>• Interacting/living with other people on a daily basis who don’t even do the smallest things to protect our environment like using reusable items or recycling. - <i>Nautilus</i></li> <li>• Feeling the need for direct action, and my own limitation in being able to participate - <i>Lola Swell</i></li> <li>• The confidence to speak up – <i>Salish Seal</i></li> <li>• Approaching those not ‘in the choir’ about Climate Change and asking people to make changes – <i>Sea Breeze</i></li> <li>• How difficult it is to talk about climate change with others. Even people I am close to often seem to want to shy away from the discussion. It is an emotional topic for us spiritual beings, and I feel that it is important to be accepting so that we may be empowered. - <i>Mushroom</i></li> <li>• Communication. I am pretty blunt, I think it’s hard for people to palate sometimes – <i>Old Man’s Beard</i></li> <li>• Understanding why the trophy hunt exists at all - <i>Forest</i></li> </ul>

## APPENDIX J - QUESTION 8 POST- SUMMIT

	<b>In the two months since the Summit</b>
I felt hopeful when...	<ul style="list-style-type: none"> <li>• I see community action as a result of our work - #1</li> <li>• At the Take Back the Wild program - #2</li> <li>• People are responsive to my initiatives, or conversation - #4</li> <li>• I see other movements making progress or taking action like the kinder morgan kayak activists. #5</li> </ul>
I felt hopeless when...	<ul style="list-style-type: none"> <li>• I hear local First Nations gov'ts have signed on to LNG deals #1</li> <li>• Faced with stubborn people who inhibit the potential for implementing eco responsible actions #4</li> <li>• I think about the numerous threats the coast is facing in leu of new LNG proposals, kinder morgan, Enbridge's proposed extension #5</li> </ul>
I felt apathetic when...	<ul style="list-style-type: none"> <li>• I read extinction stats #1</li> <li>• I feel unsupported #4</li> <li>• It all feels just too overwhelming #5</li> </ul>
I felt motivated when...	<ul style="list-style-type: none"> <li>• I work with activists like Caleb Behn, Shannon MacPhail and Melinda Laboucane-Massimo. #1</li> <li>• At the Take Back the Wild Program #2</li> <li>• Working with others on projects! #4</li> <li>• I see the great work being done by others #5</li> </ul>
The most frustrating thing about our situation is...	<ul style="list-style-type: none"> <li>• The sense that our efforts could be reframed as 'radical' at any time #1</li> <li>• Disconnect between environmental issues and positive/happy living #2</li> <li>• Convincing people who have the power to enact change to get on board! #4</li> <li>• How easily we could all change even little things in our lives and have drastic effects if everyone participated or if we just chose as a nation to stop supporting oil &amp; gas. Why does it seem impossible to everyone that we can have a sound economy and take a stand on climate change. #5</li> </ul>
The thing I struggle with personally is...	<ul style="list-style-type: none"> <li>• Feeling pulled in 1000 directions at once. #1</li> <li>• Talking casually and not lecturing about environmental issues #2</li> <li>• People with apathetic attitudes #4</li> <li>• Enforcing all these strict rules on myself and trying to avoid single use items at all costs when others don't even think about these thigns and then feeling extremely guilty any time I break those rules. Ie get a coffee even though I did not have my reusable mug on me. #5</li> </ul>

# Bibliography

- Albrecht, Glenn. "Psychoterratic conditions in a scientific and technological world." *Ecopsychology: Science, totems, and the technological species* (2012), 241-264.
- Boal, A. (2008). *Theatre of the Oppressed, New Edition (Get Political)*.
- Benson, P. L. (2007). Developmental Assets: An overview of theory, research, and practice. In R. K. Silbereisen & R. M. Lerner (Eds.), *Approaches to positive youth development* (p. 33-58). Thousand Oaks, CA: Sage.
- Ben-Ze'ev, A. (2010, July 18). Are Negative Emotions More Important than Positive Emotions? Retrieved from <https://www.psychologytoday.com/blog/in-the-name-love/201007/are-negative-emotions-more-important-positive-emotions>
- Braniecka, A., Trzebińska, E., Dowgiert, A., & Wytykowska, A. (2014). Mixed emotions and coping: The benefits of secondary emotions. *PLoS one*, 9(8), e103940.
- Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science*, 591(1), 98-124.
- Crockett, D. (2014, October 21). Nature Connection will be the Next Big Human Trend. Huffington Post. Retrieved from [http://www.huffingtonpost.co.uk/daniel-crockett/nature-connection-will-be-the-next-big-human-trend\\_b\\_5698267.html](http://www.huffingtonpost.co.uk/daniel-crockett/nature-connection-will-be-the-next-big-human-trend_b_5698267.html)
- concern. (n.d.). *Dictionary.com Unabridged*. Retrieved July 24, 2016 from Dictionary.com website <http://www.dictionary.com/browse/concern>
- Doherty, T. J., & Clayton, S. (2011). The psychological impacts of global climate change. *American Psychologist*, 66(4), 265.
- Doran, P. T., & Zimmerman, M. K. (2009). Examining the scientific consensus on climate change. *Eos, Transactions American Geophysical Union*, 90(3), 22-23.
- Dunlap, R. E., & Van Liere, K. D. (1978). The "new environmental paradigm". *The Journal of Environmental Education*, 9(4), 10-19.
- Eccles, J., & Gootman, J. A. (Eds.). (2002). *Community programs to promote youth development*. Washington: National Academies Press.
- Evernden, L. (1985). *The natural alien: Humankind and environment*. Toronto: University of Toronto Press.

- Fawcett, L., & Dickinson, J. (2013). Psychological resilience, uncertainty and biological conservation: Junctures between emotional knowledges, nature experiences and environmental education. *Trading Zones in Environmental Education*, 159-183.
- Fraser, J., Gupta, R., & Krasny, M. E. (2015). Practitioners' perspectives on the purpose of environmental education. *Environmental Education Research*, 21(5), 777-800.
- Flora, J. A., Saphir, M., Lappé, M., Roser-Renouf, C., Maibach, E. W., & Leiserowitz, A. A. (2014). Evaluation of a national high school entertainment education program: The Alliance for Climate Education. *Climatic Change*, 127(3-4), 419-434.
- Freire, P. (2000). *Pedagogy of the oppressed*. London: Bloomsbury Publishing.
- Griffin, S. (1995). A collaborative intelligence. *The Eros of everyday life: Essays on ecology, gender and society* (30-46). New York, NY: Doubleday.
- Hasbach, P. H. (2015). Therapy in the face of climate change. *Ecopsychology*, 7(4), 205-210.
- Haraway, D. (1992). Promises of Monsters: A Regenerative Politics for Inappropriate/d Others. In Grossberg, L., Nelson, C., Treichler, P. (Eds.), *Cultural Studies*. New York: Routledge.
- Harvester, L., & Blenkinsop, S. (2011). Environmental education and ecofeminist pedagogy: Bridging the environmental and the social. *Canadian Journal of Environmental Education (CJEE)*, 15, 120-134.
- Hull, R., & Michael, S. (1995). Nature-based recreation, mood change, and stress restoration. *Leisure Sciences*, 17(1), 1-14.
- Kelsey, E., & Armstrong, C. (2012). Finding hope in a world of environmental catastrophe. *Learning for sustainability in times of accelerating change*, 187-200.
- Kevorkian, K. (2004). Environmental grief: Hope and healing. *PhD Diss., Union Institute and University, Cincinnati, Ohio*.
- Kornfield, J. (2009). *A path with heart: A guide through the perils and promises of spiritual life*. Bantam.
- Krasny, M. E., Kalbacker, L., Stedman, R. C., & Russ, A. (2015). Measuring social capital among youth: Applications in environmental education. *Environmental Education Research*, 21(1), 1-23.
- Krasny, M. E., Lundholm, C., & Plummer, R. (2010). Resilience in social-ecological systems: The roles of learning and education. *Environmental Education Research*, 16(5-6), 463-474.
- Lakoff, G., & Johnson, M. (2008). *Metaphors we live by*. University of Chicago Press.
- Lefay, R. (2006). An ecological critique of education. *International Journal of Children's Spirituality*, 11(1), 35-45.
- Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Algonquin Books: New York

- Lu, H. (2016). The effects of emotional appeals and gain versus loss framing in communicating sea star wasting disease. *Science Communication*, 143-169.
- Maloney, M. P., & Ward, M. P. (1973). Ecology: Let's hear from the people: An objective scale for the measurement of ecological attitudes and knowledge. *American Psychologist*, 28(7), 583.
- NEEAC. (1996). *Report Assessing Environmental Education in the United States and the Implementation of the National Environmental Education Act of 1990*. Washington, DC: National Environmental Education Advisory Council.
- Oreskes, N. (2004). The scientific consensus on climate change. *Science*, 306(5702), 1686-1686.
- Pachauri, R. K., Allen, M. R., Barros, V. R., Broome, J., Cramer, W., Christ, R., ... & Dubash, N. K. (2014). *Climate change 2014: synthesis Report. Contribution of working groups I, II and III to the fifth assessment report of the intergovernmental panel on climate change* (p. 151). IPCC.
- Parmesan, C., & Yohe, G. (2003). A globally coherent fingerprint of climate change impacts across natural systems. *Nature*, 421(6918), 37-42.
- Randall, R. (2009). Loss and climate change: The cost of parallel narratives. *Ecopsychology*, 1(3), 118-129.
- Rando, T. A. (1985). Creating therapeutic rituals in the psychotherapy of the bereaved. *Psychotherapy: Theory, Research, Practice, Training*, 22(2), 236-240.
- Reser, J. P., & Swim, J. K. (2011). Adapting to and coping with the threat and impacts of climate change. *American Psychologist*, 66(4), 277.
- Riemer, M., Lynes, J., & Hickman, G. (2014). A model for developing and assessing youth-based environmental engagement programmes. *Environmental Education Research*, 20(4), 552-574
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316-331.
- Russell, C. L., Bell, A. C., & Fawcett, L. (2000). Navigating the waters of Canadian environmental education. In T. Goldstein & D. Selby (Eds.), *Weaving Connections*, (196-217). Toronto: Sumach Press.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. *Emotion, disclosure, and health*, 125, 154.
- Sauvé, L. (2005). Currents in environmental education: Mapping a complex and evolving pedagogical field. *Canadian Journal of Environmental Education*, 10(1), 11-37.
- Scales, P. (2014). Developmental assets and the promotion of well-being in middle childhood. In Ben-Arieh et al. (Eds.), *Handbook of Child Well-Being*. New York: Springer
- Schusler, T. (2015). Environmental action and Positive Youth Development. In M. Monroe & M. Krasny (Eds.), *Across the Spectrum: Resources for Environmental Educators* (108-127). Washington, DC: North American Association for Environmental Education (NAAEE).

- Schusler, T., & Krasny, M. (2007). Youth participation in local environmental action: An avenue for science and civic learning? In A. Reid, B. B. Jensen, J. Nickel & V. Simovska (Eds.) *Participation and Learning: Perspectives on Education and the Environment, Health and Sustainability*, (268-284). New York: Springer.
- Search Institute. (n.d.). Developmental Assets. Retrieved from <http://www.search-institute.org/research/developmental-assets>
- Search Institute. (2007). 40 Developmental Assets for Adolescents. Retrieved from <http://www.search-institute.org/content/40-developmental-assets-adolescents-ages-12-18>
- Seifter, A., Robbins, D., & Kalhoefer, K. (2016, March 7). STUDY: How Broadcast Networks Covered Climate Change in 2015. Retrieved from <http://mediamatters.org/research/2016/03/07/study-how-broadcast-networks-covered-climate-ch/208881>
- Sesma, A., Jr., Mannes, M., & Scales, P. C. (2006). Positive adaptation, resilience, and the Developmental Asset framework. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (281-296). New York: Kluwer Academic/Plenum.
- Sipress, D. (2012, n.m, n.d). [Cartoon] New Yorker. Retrieved from [http://www.condenaststore.com/-sp/Cartoon-Prints\\_i13926732\\_.htm](http://www.condenaststore.com/-sp/Cartoon-Prints_i13926732_.htm)
- Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart in nature education*. Great Barrington, MA: Orion Society.
- Soja, E. (2009). The city and spatial justice. *Justice Spatiale/Spatial Justice*, 1.
- Stapp, W. B. (1969). The concept of environmental education. *Environmental Education*, 1(1), 30-31.
- Starhawk. (2004). *The earth path: Grounding your spirit in the rhythms of nature*. San Francisco: Harper.
- Stevenson, R. B. (2007). Schooling and environmental education: Contradictions in purpose and practice. *Environmental Education Research*, 13(2), 139-153.
- Swim, J., Clayton, S., Doherty, T., Gifford, R., Howard, G., Reser, J., & Weber, E. (2009). Psychology and global climate change: Addressing a multi-faceted phenomenon and set of challenges. A report by the American Psychological Association's task force on the interface between psychology and global climate change. American Psychological Association, Washington.
- Theokas, C., Almerigi, J. B., Lerner, R. M., Dowling, E. M., Benson, P. L., Scales, P. C., & von Eye, A. (2005). Conceptualizing and modeling individual and ecological asset components of thriving in early adolescence. *Journal of Early Adolescence*, 25(1), 113-143.
- Thomson, G., Hoffman, J., & Staniforth, S. (2003). *Measuring the success of environmental education programs*. Ottawa: Canadian Parks and Wilderness Society and Sierra Club of Canada.
- Tugade, M., & Fredrickson, B. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320.

- Uhl, C. (2003). *Developing ecological consciousness: Path to a sustainable world*. Maryland: Rowman & Littlefield.
- Volk, T. L., & Cheak, M. J. (2003). The effects of an environmental education program on students, parents, and community. *Journal of Environmental Education*, 34(4), 12-25.
- Warren, R., Arnell, N., Nicholls, R., Levy, P., & Price, J. (2006). Understanding the regional impacts of climate change. *Tyndall Centre for Climate Change Research Working Paper*, (90).
- Weigel, R., & Weigel, J. (1978). Environmental concern the development of a measure. *Environment and Behavior*, 10(1), 3-15.
- Weston, A. (2004). What if teaching went wild? *Canadian Journal of Environmental Education*, 9(1), 31-46.
- worry. (n.d.). *Dictionary.com Unabridged*. Retrieved July 24, 2016 from Dictionary.com website <http://www.dictionary.com/browse/worry>