

St. Francis Xavier University

Narrative Inquiry into the Formative Aspects of Ecological
Identity

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A Thesis Submitted to

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School of Education

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School of Education

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Thesis: Narrative Inquiry into Formative Aspects of Ecological Identify
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This narrative inquiry into the ecological identity of four preservice teachers portrays the participants' connections with nature. It examines the manner in which these connections

have been manifest through cognitive, intuitive, and embodied ways of knowing. Themes such as childhood places and experiences of the wild are recurring. The research shows that one's early connections with the natural world later intersect with one's political identity to produce active citizenship through identification with local places and the process of continued expanding circles of identity. Participants who formed strong links in childhood were later willing to act on behalf of the environment as adults. Early identification with special places has been shown to provide the participants with the ability to integrate this knowledge in the school curriculum in cases when the participants have had meaningful ecological experiences in their past schooling. Implications for education indicate the need to integrate a passion for nature connections through a biocentric view into educational outcomes by cognitive, intuitive and embodied means of knowing.

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Chapter 1

My Ecological Journey As a Teacher

An Introduction to the Purpose of This Research

In the *Alchemist*, Coelho(1998) expounds on the central theme that each person has a personal legend and all the world conspires to help them achieve that legend. It is with the bit of optimism that I embark on a journey, to investigate the ecological identity of four preservice teachers from Saint Francis Xavier University. For me, this is rather a labor of love. Environmental studies have been a particular focus of my life and teaching at Whycomomagh Education Centre and its parent school Whycomomagh Consolidated School.

My mentorship of four preservice teachers, during their preservice time at our school, provided an opportunity for an investigation into the formative experiences that shape an individual's ecological identity. By using the techniques of narrative inquiry, I sought to obtain data that is both rich and authentic in scope.

This investigation into the personal stories of four preservice teachers provided data that has helped me come to understand how each of the preservice teacher's narratives originated. I found it interesting to explore the differences and the commonality that lie among the participant's stories. The research has helped me to come to understand the kinds of experiences that shaped each individual and molded their attitude to environmental education, scattering them on a continuum between disinterest and passionate engagement. Discerning the kinds of experiences that impacted on learner's ecological identity can help me, and others as well, to understand how to plan learning experiences in the future. In this chapter, I explain the significance of the

research and locate my background and ecological identity with that community of practice.

Significance of the Research

Research that could bring positive change in the understanding of our place in this cosmological moment in time is desperately needed and perhaps the urgency is felt more so, by species other than humans. Unless teachers develop the sensitivity, in their students, to come to see the world from an inter-species perspective, that urgency needed will never be understood or felt. It is an important task then to develop biophilia or love of life in one's students.

Uncovering the secrets that are hidden in the participant's stories as to how their environmental sensitivities were heightened may help me to provide similar meaningful experiences for others in the future. Passing on the seeds of environmental learnings to the next generation, is of paramount importance to me. This investigation into learner's narratives may also help me to come to understand why environmental concerns exist in some adults and are void or underdeveloped in others. It will provide information about the manner in which the most effective learning situations can be provided for students.

The learning, to be acquired, does not reside only in the knowledge domain but lies very definitely in the affective domain. To bring about true change it is necessary to affect the minds and hearts of students, I believe. The purpose of this thesis is to undertake action research as a way to uncover some understanding about the kinds of experiences that students should have that can impassion them about our earth and its health.

I am excited about the potential that this research has for my personal growth as a learner. It has given me the opportunity to have some of my ideas about environmental education challenged and reconstructed. This research may likewise provide useful information for the training of preservice teachers in the future. It will, I hope, also be pertinent to government officials who plan programming with an environmental focus for Canadian citizens.

Ecological Identity and Cultural Ways of Seeing

Why do humans persist in despoiling their own habitat? What are the motives for our ecocidal behavior? Why do we, as humans, collectively engage in this kind of behavior? How have we become disconnected from our home and habitat in a way that other species have not? Are the factors modernism, commercialism, and industrialization? Are there some cultures that have preserved their connections with nature? What can be learned from indigenous wisdoms? How can we envision a future that is radically different from our present cosmological moment?

Biophilia is the love of life. Is this the fundamental issue? In order to promote environmentalism, do we, as teachers, need to promote a love of life? What kind of culture can we help create that would enable all humans to live as a part of nature without despoiling it?

Ecological identity is part of one's personal identity. Its scope is broad reaching in that it is affected by all aspects of one's cultural identity. Cultural imperialism and global corporatization are deeply rooted in environmental destruction; their perspectives lead to forces that remove control from local communities. A new environmental movement of regionalism attempts to locate decisions within the regions that the decisions affect. This

movement promotes a kind of stewardship in which decisions are made locally, through a process that allows community input.

The concept of ecological identity falls under the paradigm of psychology. The study of psychology began with the study of the psyche and had to do with the intrapersonal. As the science progressed, there was recognition of the importance of the interpersonal, and family theory was developed. Today, recognition of the importance of the environment in the development of the person has led to the study of ecopsychology, of which ecological identity is the defining concept.

How individuals relate to the environment around each of us speaks largely of this cosmological moment in our collective culture. As individuals, we are impacted by the relationships that we have developed with the other people around us, and also by the relationships that we have developed with the world around us. This project seeks to explore the experiences that have led the participants to form both positive and negative connections with the biosphere that they call home.

The interviews and discussions were centered on the connections that the participant had developed with the living world. Opportunities to explore nature were investigated. Relationships that have helped to foster a positive relationship with the natural world were recorded. By asking the participants about the kinds of experiences that they might provide for students, they were encouraged to draw on some of their past experiences and to make links to valuable lessons that they might provide for future students.

Important occurrences in both the school and the home setting were explored.

Where does the responsibility lie for the development of a healthy ecological identity? Does it lie with families, with schools, with governments, with society at large? Whose job is it to inculcate attitudes that will help the world to survive into the next generation? Physicians for global disarmament have taken a stand against war, which shows a shifting attitude as to how some people, view the resolution of conflict through war:

“The human right to peace is about the fundamental shift that is occurring in not only the way we see the world and our interactions with other individuals and nations, but in how we think about and relate to the world around us. War is not longer considered a natural response to threats to security”(Roche, 2003).

Cultures provide the lens through which we, as individuals, view our world. To know one culture is to not really appreciate how different cultures really can be and how others worldviews can differ so substantially. How can we listen, how can we learn, how can we respect the narratives of all those that we meet, teachers, students, and elders? How can we form a relationship with the rest of the living world that differs from the one that we have now? A relationship that sees the world, not as resources to be exploited, but as a communion of beings living in shared reciprocity would dramatically alter our way of being in the world.

"If we think of culture as a group of people who have chosen particular kinds of interactions with the environment and who have privileged some kinds of interactions over others, then we see that every culture has its limitations. Some ways of knowing are selected while others are discarded. Cultures become shadows of each other when individuals see in other cultures qualities that they have neglected or dismissed for themselves." (Uhrmacher, 1992 p.129)

Western cultures continues to spread its progressivism to different parts of the globe and herald its success, but sometimes one wonders just what China may have been like if the Big Mac had never arrived. How much has Bhutan gained by the arrival of the satellite dish? And yet, are there solutions that can integrate postmodern technological culture in vibrant new ways with a culture of caring and respect for the habitats of all the creatures of the biosphere?

History of My Community of Practice

As I begin this research, I think that it is important to locate myself as a learner who has become engaged by the environmental studies. The desire to bring about attitudinal change in students arose out of the mission statement of Whycomagh Consolidated School. The school has chosen a mission statement declaring, as a staff, that we would strive to integrate environmental teachings into all areas of the curriculum. Although we did much work to create integrated units of work at Whycomagh Consolidated School, we still wondered if we would be able to reach the affective side of the students. We knew that we could measure the transfer of knowledge, but measuring attitudinal change would be more difficult to achieve and measure.

Young students may pick up garbage when a teacher is present, but seeing how students behaved on their own without teacher supervision became of interest to me. Were ideas about the environment deep learning or were they superficial and not part of an inner value system? In trying to reach the value systems of students, it became apparent that some things worked whereas others did not.

Students were all willing to take a day off from classes to spend time outdoors transplanting trees, but when I saw trees planted upside down I knew that in the rush to

accomplish outcomes, I had not reached the heart and soul of the student. Students had to take ownership. When they were involved from the ground up the greatest learning was achieved.

Internalization of Positive Environmental Attitudes

Students in the Junior High Networking Program, who cooperated to write an Eco-Action proposal, saw their work produce tangible results. A greenhouse, bat houses, a talus bank habitat restoration, a butterfly garden, and the reintroduction of ginseng, an extinct species, into the local environment were some of the initiatives that these students undertook and accomplished.

There were the less tangible results, such as the public attention, which brought about appreciation and pride that was felt in their local community; however it seemed that there were also other less well-defined benefits. The students had somehow changed to their very cores. The sense of pride that they experienced seemed to have a motivational factor all its own. Many of these students developed and refined their leadership skills through this project. Was it the opportunity to do real activities in which they were able to interact with other learners to accomplish outcomes?

The success of the project seemed to hook them in a way that was generative. They wanted to go out into the world and continue to make a difference. It had felt good to take positive action, which showed in concrete results. They knew that they were the movers and shakers who had made a difference. It was a positive experience. They seemed to crave more opportunities to do the kinds of things that would make a difference. The high that they got from their sense of accomplishment was addictive. The energy from this project was self-sustaining and generative. Even at present I hear that

one of the students has won an award at university for her role in effecting environmental change.

Indeed 7 years later, younger students are actively energized by opportunities to work in and around the greenhouse that was built through the ingenuity of another era of students, who have since moved on. The Eco-action Project was student initiated, led and controlled. Their input was very real. They decided what was to be done and how it should be done. These students became immersed in their work, doing the specific job that was required of them nevertheless insisting that they all needed to have a picture of the project as a whole, and then they could work on their own component of the project. The inner sense that they had accomplished something real seemed to fuel their motivation to do more.

I have found that trust is a necessary component of transformative education. Students who were left to work on their own in a network project worked harder for intrinsic motivation. In contrast, students who were promised marks for their efforts worked hard while the teacher was watching but soon slacked off when they thought no one was watching.

Other students continued to work when the teacher was not present. Did they see the value in their work, enjoy the sense of accomplishment, or just simply enjoy working? Did these students have an intrinsic motivation? Did they connect with the earth? Does a teacher's attitude towards the soil and the earth itself shape the kinds of interactions that his or her students will have in regards to the same issues? Is there a connection that is present to the natural world within the heart of each of us and it just needs the correct nurturing to give it a chance to manifest itself? Do humans crave

connections with the natural world? These are questions that I hope that this research project will help me to answer.

Joining the Community

In 2001, I presented at the Environmental Education and Communication Conference in Whitehorse. My preparation for this conference caused me to reflect what I felt about environmental education and how I went about teaching connections to the natural world. As I prepared my presentation for the conference I realized that I had expanded my definition of environmental education through the years of my teaching at Whycomomagh Consolidated.

I had started with a very scientific approach, gathering information, and monitoring air, water, and soil quality. The students and I participated with the United Nations indicator project. This helped students to document changes that were occurring in their own neighborhoods. On a trip to the graveyard students recorded the types of lichens that were found to be growing on various sides of the gravestone and compared these to what they found growing around their homes. Orange lichens indicated polluted air, perhaps which had come from the steel plant or a source of industrial pollution.

However, we also found that even rocks close to rural homes could become covered with the orange lichen while only a kilometer away in the forest, white lichens were more prevalent. This kind of hands on research helped us to realize that we can take more personal responsibility for our actions by coming to understand how we contribute to global issues.

Another integral part of environmental education, I felt, was experiential education. I was determined to get students out into the great outdoors. Over the years, trips to the park, walks along the coastline, trips to caves and to the farm in Dunegan became the norm at our school. Getting kids outside just felt like the right thing to do. It is experience that can not be replaced by the classroom .

Whycocomagh Consolidated had some pretty sound and enthusiastic educators in the field of environmental education that brought me into a community or culture that was concerned about the environment. Mike MacDougall, a former principal, had helped to shaped a vision for the school, which saw the integration of environmental attitudes in to all aspects of the curriculum as central to the life and continuance of the school. Mike was inspiring. He encouraged teachers to plan integrated units that could be carried out at a site that was donated to the school for its use. The farm in Dunegan was the site of the first Gaelic newspaper in Cape Breton. Through MacDougall's efforts, the farm also became a site to be used by one of the first environmental schools on the island.

The staff toured the site with local historian Jim St.Claire; the history of the site was discussed as well as its value in fulfilling our mission. Planning units in math, English, science and social studies, we returned with students to map the site, write in a magic spot, step out Pythagoras theorem in an abandoned hay field and clean up an old barn. The environment at Whycocomagh was ripe for the development of new ideas and ways of integrating all subjects in a closer relationship with the natural world. The students embraced the activities, as did the staff.

MacDougall encouraged the teachers to be as innovative as possible. It was an exciting environment to work in. Several members of the staff were involved in a

masters degree program. Their research work with the program dealt with ways in which environmental indicators could become the basis of scientific data to be studied. We dreamed of having probes that would enable us to do accurate testing of the Bras d'Or. It seemed that the focus on water quality helped to focus attention on the need for sewer and water and improvements were soon on the way in this regard.

So, as I became a member of this staff, there was a standard of dedication and innovation that were inspiring and challenging. When Mike MacDougall left the helm of the ship we were angered and dismayed that there should have to be a replacement.

New Leadership Continues the Vision

Knowing Mike was respected and admired, Joe Morris's first words, as the new principal, to the staff were, "Don't compare me with Mike and I won't compare you to every teacher that I've ever met." From those words on another legacy of dedication to the mission of integrating environmental education into the curriculum in our community began. Joe's car head for home each night with the headlights on and surely all energy spent. The gas tank could not have been his only tank on empty. He gave his all!

Embracing the mission that we could officially become an environmental school, Joe began to plan a symposium that would bring together all the players that had a vested interest in seeing Whycomagh take a leadership role in the field of environmental education. People came from all levels of government to discuss the possibilities of how the mission statement of the school, to fully integrate environmental activities into all aspects of the curriculum, could be met. The conference generated a lot of interest and helped to make the various governmental agencies, and in particular our school board,

comes to see that the area was indeed showing leadership in the area of environmental education.

Again the culture of the school was open to teachers who were willing to participate in projects that were related to the environment. In this atmosphere, the students became involved in the hosting of the Provincial Caretakers of the Environment Camp; they enlisted as one of the first envirothon teams in the province. They competed for the No.1 Wasteless School in the province and tied for first place.

It had been the goal of staff to make changes in more than the knowledge domain. Our mission was not to merely impart knowledge. We wanted to affect the attitudes of our students. We were beginning to see results. Students frequently chose environmental themes for projects even when they were not required to.

The students were winning the environmental awards at the Cape Breton Regional Science Fair. They were being asked to present to various interest and community groups around the island. Some of the students were making a name for themselves on the local, regional provincial, national and even international scene. The Nova Scotia Museum called to say the students' work on Frog watch was exemplary and that the students should be commended for the work that they were doing.

Rescue Mission Planet Earth

That summer the school hired a student on a grant to work over the summer to find the latest programs that were available. On returning that fall we learned about the United Nations' Rescue Mission Planet Earth project. This project was sponsored by Environment Canada. When I called to order kits for the students, Anne Jarnet, the Education Coordinator for Environment Canada apologized for not attending the

symposium the school had held on environmental education. She said that she hoped to be able to visit the school in the future. She connected very closely with our group and has inspired us to continue to walk forward in new ways and to search for the most meaningful ways to bring about transformative change in the educational system. Before her retirement she encouraged me to cultivate a deeper identification with ecopsychology and its role in education. She continues to connect environmental educators to the heart of issues and she inspires us to keep our focus on the larger issues. Her presence in the movement continues to be felt as she builds networks and connections across Canada with those who have similar stances on deeper philosophical issues.

The school's involvement with this UN project on community indicators involved students in real science for real community change. Emily MacKinnon and Amy MacLennan, students in my class, were asked if some of their ideas could be used by Christene Stewart, Canada's environment minister, at the United Nations in New York to exemplify active and concerned students across the country. Students at the school began to believe in the power of the word and see that what they did and said could make a difference.

We had been on a roll. It began to seem that all things were possible. Some students named their rock band "The Greenhouse Effect" with a hit by the same name. Anne Jarnet suggested that we should become involved with Peacechild International. We became involved in human rights issues with our UN and Peacechild work.

And then one morning it happened. Emily arrived at school and asked me to read a poem that she had written the night before. There was no down time. I found her words very moving. I asked the others in the class to listen. They had the exact same reaction.

We mailed it to England with several other pieces that we had written on the environment and human rights. Peacechild, to no surprise, chose Emily's poem as the only Canadian submission that was used in a book written by children from about 80 countries around the world. It was not long before another student was invited to England to help edit this book to be published on Human Rights for Children.

Globe Education Program

The following year our school staff was well united in their purpose with the school's mission statement clearly defined; we decided that the full integration of environmental teaching into all areas of the curriculum was our stated goal. Anne Whalley, a consummate innovator, told us about the Globe Program.

It was a school program in which students across the world were tracking weather and other indicators in their own communities and then inputting them to the United States North American Space and Aeronautics database, creating an incredible data bank of current research which could be cross referenced to learn more about patterns and trends across the world. Having decided that we should become the first school to introduce this program to Canada, the staff immediately selected Anne Whalley for this mission. She has an uncanny ability to absorb new understandings with ease, and it was with the same ease that she shared her learnings with others. We unanimously voted to send Anne to the United States to become trained in this program

On her return Anne immediately trained the first Globe teachers in Canada. The following year she was able to pair with Saint Francis Xavier University and have a "train the trainer's session". In this session she had a couple of teachers from Nova Scotia, Ontario, and even one from Australia. The following year, the Australian teacher

approached the Canadian government in order to ask them to allow him to bring Globe education to the Arctic. The government first refused, saying that they were certain that there were plenty of Canadians trained and willing to do the job. The Australian teacher emailed the seven Canadians that Anne had trained and when they expressed no interest, he returned to the federal government and was given the contact to bring Globe Education to the Canadian Arctic. I will always remember the moment when Anne had called me into her office. (She had replaced Joe Morris and was at the helm as principal.) She showed me a website (www.frozentoes.com) with amazing pictures of this Australian teacher being towed about the Canadian Arctic with a dog sled team and a lot of teaching supplies to do hands on environmental testing. One community had presented him with a beautiful parka so he really looked the part, bringing this Globe program to the Canadian Arctic.

It was exciting to think that all of this energy had grown out of the work of this one adventurous person, Anne Whalley, and her innovative daring. Anne soon encouraged us to become part of the Environmental Network of Schools. This network allows children across the world a means of sharing ideas facts and attitudes about the environment.

Whycocomagh Students Enter Global Stage

Continuing our involvement with Peacechild International, it was easy to inspire next year's grade 7 classes. When they saw that a student whom they knew was published in a book, along with students from other countries around the world, they began to believe that they could dream too. So the day that I asked them to write essays about their projects to help the environment, little did we dream that 5 students would

receive citations from an international committee, signed by Kofi Annan, to represent Canada as part of the Canadian delegation at the Peacechild Millennium Conference that year in Hawaii.

It became more real, when the pilot invited them to the cockpit so that they might have a panoramic look at the Grand Canyon and the monuments of the Painted Desert. The Peacechild Millennium Conference was youth focused and gave the students a very real opportunity to express their views on a national stage. It became very clear very quickly that although clean air and clean water might be on top of the students' priority list in Canada, but students in war torn countries had to prioritize peace.

Children in India, who gathered old newspapers on the street and then refolded them to make paper bags which could be resold to get enough money to go to school, saw issues in a different light. They felt that education was the key that would unlock the other issues of peace, justice, and the environment. It was the first tastes of how interlocking the issues were and how the priorities changed from country to country.

The students worked hard to reach consensus in the North American group. The conference was set up for children and it was a very profound experience for our students from the small island on the edge of North America. Many students, whose beliefs were firmly rooted found themselves reduced to tears as they struggled within their regional groups to form consensus. On our return to Whycocomagh, I found the students staying in touch with children from all over the world. Their vision of the world and their understanding of environmental issues was expanded by our work with Peacechild International and through them so were the views of the rest of the students, staff and larger community.

Whycocomagh consolidated School had been for many years a primary to grade 12 school. The plea of our community, during public consultation on consolidation, was that we needed to have our grade 12 students in our community so that they would be able to bring the research projects to the highest level. That fight was soon to be over. As word spread that a new school had passed the Nova Scotia legislature for Whycocomagh. It was the only school in the province to pass the legislature as an environmental school. However, there was a bitter pill to follow, it would be a primary to grade 8 school.

The years of struggle seemed to have be in vain, the goal to educate the children in their own community was lost. The new school would contain an Aquatics Laboratory, an innovation in a school, but the sense of loss was too great to allow the celebration to occur. It was bitter sweet. We had won our goal for an environmental school but at what cost. Where would the older students, who had carried the more complex projects and data research to completion, be?

The tools of cognitive apprenticeship such as discussion, reflection, evaluation, and validation of the community's perspective were available. They nurtured the process of changes, and when I look back I know that I was in the presence of some very strong mentorship. A cohesive group of people who were active, focused, supportive and gave validation to the communal perspective. They inspired and fed the activity that took place at the school, and in turn were also nurtured by it.

A Time of Victory and a Time of Loss

When the community lost its high school, it was a stumbling point on the path. As staff, we wondered, should we even continue, why would we bother? We had wanted the school, for our students now they were leaving the community. There was a tremendous

sense of defeat and loss of a clear focus. Sandy Wright came into this apathetic milieu as our new principal and leader.

It must have been a bit dismal for Sandy when he took over. What he had been told was a dynamic, focused, and enthusiastic staff with a heavy leaning towards integrating environmental attitudes was a disarray of teachers who were ambivalent and a bit tentative. The community had won a battle and would be getting a new school built to their liking by the Department of Transportation and Public Works, rather than under a private partnership. However, they had lost the war. Students were very happily making the transition to Dalbrae Academy, where they were amongst more of their age group than ever before, while parents struggled to provide their students with opportunities to participate in extra-curricular activities.

Wright, refusing to allow the environmental initiative to become an individual focus began to build the program from the ground up. It was part of our transition into the new school. We had lost the schoolyard we had greened but it did not seem to matter. It was the process that was more important than the product. We could begin again.

We struggled against a schoolyard of pavement and chain link fence but our worst fears came true even though we included the contractors on a workshop with the provinces' best experts on schoolyard greening. We had the chain link fence and we had the pavement. However, gardens were constructed around the school. Some of the plants that the community had given us in our original greening project were saved in a neighboring garden loaned to the school.

Gradually we began to move the plants back along with many indigenous species that were planted during the construction. The Greenhouse, which was the first Eco-

Action project in Canada to be applied for by students, was still not completed. Sandy had to rescue the components from the old school before the demolition crews came, and now he had to arrange to have them brought back to the new school. Some pieces were missing and others had never arrived. I'm sure many would have quit at this point, but in his methodological way Sandy located the pieces and began to organize for the completion of the greenhouse project, which had been begun before our move to temporary quarters.

Eco- lab Development

The greenhouse was not the only unfinished project. The day of the ribbon cutting ceremony, we had an Eco-Lab room to show that the school had passed the Nova Scotia legislature as an "environmental school" but there was apparently no money to equip the room. Sandy began to put his head to the job of coming up with resources to complete the room. Money was promised for a large aquarium, and it arrived but the rest of the room was basically empty.

Sandy managed to get some community support to remove some of the cupboards and shelving from Judique School. It seemed very appropriate that a school that professed environmentalism should be using stainless steel sinks and granite counters that had been recycled from another location. Under a coat of paint the lab looks as new as the rest of the school.

Sandy encouraged and trained teachers in Truro who showed some affinity for the aquarium, and thus began the apprenticeship of an expert in aquatics labs. He organized the firemen to bring water and then another class to bring stones. Soon the tank, which is probably one of the largest aquariums on the island, was bubbling away and we were

allowed to introduce our fish, Fred, to the Bras d'Or habitat that we were trying to emulate. Sandy appointed a student, Justin Rose to take charge of Fred and his habitat.

And so our school life over the years has been one in which there has been a strong focus that has remained at the core of who we are and how we identify ourselves. This community has had an impact on my personal growth. I have not remained unchanged by the community in which I have been immersed as a teacher. It has shaped who I am as surely as I seek to shape and change the students who keep coming through those front doors and instill in them attitudes of love and respect for the world.

My Background Within This Research Landscape

My study and research over the past winter into the teachings of Edmund O'Sullivan on transformative learning was a time of intense revelation and connection with some of the loose ends that had arisen from my work in critical literacy, environmental education, peace education and multi-cultural education being wound into one strong rope. I enjoyed my independent research studies immensely, but my work had become insular to the point that I began to realize that it seemed that I did not have an arena in which any kind of dialogic interaction was occurring to confirm or refute my ideas.

I was usually in agreement with myself, so it was probably time to begin to share and defend some of the ideas that had begun to shape my broader view of what environmental education was. How to bring about change in the attitudes of children is quite a different matter.

The excitement I felt from the opportunity to study the narratives of five preservice teachers was great. It would be wonderful to have someone who was willing to exchange ideas and clarify understandings. I would have five willing participants with

whom I could enter into a discourse on my impassioned topic, environmental literacy. I awaited their arrival with a new kind of anticipation. How would I approach my research, what would be my methodology?

Quantitative versus Qualitative Approach to Methodology

The Environmental Education and Communication Conference was helpful in this regard. Surrounded by academics, who had done similar kinds of research, it was an opportunity to network and to pick brains. It was also an opportunity to see the myriad of ways that environmental education is taught in the world.

Largely environmental education seems to be in the domains of the quantitative approach, whereby scientific data is being used to prove that the planet is on a collision course with disaster. The natural resources, which have been in abundant, supply for millennia are now under siege. Technology is helping humans to use up the world's resources at an alarming rate, which is threatening the future of the only home all species on the planet have in the universe.

Environmental researchers also have the qualitative approach, which helps us to form a relationship with our planet. Nature writing, experiential education, and cultural education help to fashion new ways of seeing and being on this planet. Qualitative environmental researchers learn to see our earthly home through new eyes.

The question remains. What kind of approach to environmental education can and will be most effective in bringing about the substantial change in world view that is needed to save our planet from its demise? Perhaps educators have to pull out all of the stops in order to bring about effective change. I believe that by closely examining the factors that have brought about change in those who are already taking transformative

action to change the planet, I will find the flame that must be fanned to bring about larger societal change. Who are the players who are committed to the cause of saving the planet, and what are they doing and prepared to do to bring about these changes? This is the question that I used to focus my research question.

Spirit Tree Project

One of Whycomomagh Education Center's school projects that is simple but inspiring has been the Spirit Tree Project. Inspired by the writings of Chief Dan George, students and staff have planted over 400 red oak trees. The seedlings have been grown by the students, and those who wish to have a tree must write a poem of commitment to the tree to promise to allow it to grow to its full potential.

Hopefully these trees will grow to be new voices of the ancient earth and their stories will be told. We give them away in hopes that someday the voices of the mighty oaks will tell the story of the dream of the earth to those who can truly hear the stories of the wonder of this planet.

The Mentorship of Five Preservice Teachers

I came to the decision that the mentorship of these students could provide the research data that I need to delve into this quest of unearthing the formation of an individual's ecological identity. What are their views of environmental education? How do their views mesh with the views that I have formed in my years at Whycomomagh Consolidated School and now Whycomomagh Education Centre? What were the transformative experiences that shaped the lives of these students? What are the similarities in their experience? Do other members of their families share similar visions for the planet?

How far is each of the participants willing to go in their actions to bring about their dream for the earth? What authors and writers helped them formulate their views? How has the particular age in which each of us has grown up shaped their view? I seemed to have so many questions and excitement about getting to meet and coming to understand the relationship that each of these young persons has formed with the larger earth community.

Through this experience, I feel that I can come to understand the evolution of my teaching experience and initiatives. I can track my world view and perceive the values that have remained a constant in my life whilst at the same time see that something that I felt certain about during one period may undergo transformation and change in a later understanding.

The one thing that I am certain about is that I need to maintain a tentative view, which allows room for reflexive thinking to occur. It is, it through this reflexive thinking and discussing that, as individuals, we become and who we are and then reinvent ourselves again. Whereas our values and goals can remain largely constant, the manner in which we set about to attain them must be based on reflexive thinking.

Personal Ground

As a small child in a catholic home, I became an agnostic around age ten. It was a frightening experience for me. I had to work through the dissonance, doubt and ambivalence that I felt. The following poem illustrates the fear I felt as a child and how I was able to resolve and reinvent my understandings of the world so that my worldview made sense to me.

A World I See and a World I Feel

Lying in bed, I could not sleep
My mind was filled with chilling thoughts
How could I believe these stories?
Of god, of a virgin birth
So unbelievable were they
The assumption, annunciation
But why so the fear I felt,
Who would know my thoughts?
Only god,
If he did exist....

And so, as a child, I shaped a world

I could believe
The great bang
Evolution
That explained
The material things...
But what of love

From whence had it come?

Then god is love

Embedded is s/he.

Out of the stardust,

There arose

Such a myriad of beings,

to manifest love.

A diversity of plants

and a plethora of animals.

God is love.

The love resides

In cool lakes

Mountain bedrock

The voice of the forest.

The spirit is with us

free to roam.

Locating myself in the landscape

I am from Cape Breton, where the first thing that a stranger would ask is, “What’s your father’s name?” I locate the factors that have influenced my life and shaped who I am. My dad grew up in the Antigonish area at the time when Moses Coady was developing the cooperative movement. He was a priest (Coady, that is, not my dad, that would have been original) who organized farmers and fishers and help to set up credit unions and cooperatives to sell their fish and farm products.

My dad was greatly influenced by this man and so he worked at a Co-op grocery store in a rural community, then a Co-op building supply and later even when to the north to work with the Inuit to help set up cooperatives for their stone carvings. He had learned the value of community action and expected his children to be able to hold their own in a discussion, defend their values and act on their beliefs.

Being able to hold our own in a discussion was expected of my siblings and myself, at every family meal. It was daunting for visitors, who sometimes felt this environment was hostile. I still tend to jump into conversations, which makes some people uncomfortable, whereas I feel quite at home. I like to look at both sides of a coin. Can that be, or could it be different? My understandings continue to grow and to change. Some things remain constant and some things change while still other concepts come together to form complex webs that are interconnected in new and synergistic ways.

My mom was the daughter of Polish immigrants, her father a defender of workers rights and her mom a peasant with first hand connections to the soil. She was raised in Whitney Pier, not far from North America's then developing, worst toxic waste site, the Sydney Tar Ponds. Perhaps it was this fact that drove me to want to be closer to nature. I knew for sure that I did not want to live anywhere near the steel plant that spewed pollution into the air and soil.

Although I had been born in Sydney, the industrial heart of Cape Breton, I had moved to Heatherton, a pristine rural setting on the mainland, before I was one year old. I can vividly remember my first return trip to Sydney at four, to visit my grandmother. The trip to Whitney Pier was one that was so sense oriented; its olfactory memory leaves no room for uncertainty. As we approached Muggah's Creek my nostrils were overcome

with a smell so strong that I was retching for breath. To see a brook that was so completely black and viscous left me agape. “What is that?” I gasped. My mom sensing an aversion to her homeland quipped, “That’s what they make liquorish out of dear.” The juxtaposition of these contrasting ideas left an indelible mark on me. I knew, early on I wanted to escape from this land of gray and black landscape and return to the pastoral calm and green tranquility that I had known in Heatherton.

As a young adult I became a “Back to the Lander” part of the movement or sub-culture that chose rural living and a lifestyle that was tied to the land. Influenced at university by the writings of Tolstoy, who spoke of the benefits of rural society, my husband and I moved to Orangedale in 1975 to a vacant farm that my husband Donnie found. We set out on an adventure to try to make it on the land. Beginning with a single goat as a wedding gift, we soon found ourselves selling milk, pigs, honey, mussels, and strawberries. All that remains today of our livestock is a single cat. We have no regrets.

We lived in a different time zone than the rest of the world. Most of our friends were veteran farmers, who still used the turn of the century methods. Donnie and I have now taken up full time jobs off the farm and are very much a part of the mainstream society that we had left. Popping fast food in the oven, before we rush off for the evening, fossil fuels gobbling up a disproportionate amount of our budget, as we rush off to see another minor hockey game.

Where It All Leads:

From whence had my ideas arisen in the first place? I began to trace back the journey in my mind. Certainly my staff at Whycomomagh Consolidated School and then Whycomomagh Education Centre had influenced me. Their strong mission to fully

integrate environmental teachings into all aspects of the curriculum had made an impression on me when I joined their staff 12 years earlier. However, others had joined the staff who had not been influenced in the same way as I had by this mission statement. I guess I had certainly been committed to the program. I have searched the elements of my early years that led to this kind of commitment. I had once, as an adult, been at a retreat in which a therapist had used creative imagining to take the participants to a safe spot; mine had been in the gorgeous greens of the rural village, Heatherton where I had spend my first years. The therapist instructed the participants to go to a safe place in their mind.

The memory that I recalled through this experience was a walk with my sister when I was four years old. My sister, Sharon, took me into the woods in our back yard. There was much of novelty and interest. There were bugs, mushrooms and wildflowers. A sense that it was forbidden loveliness prevailed. I knew that our naughtiness in going into the woods might not have a positive outcome, which only served to bring more of a sense of daring and a vivid appreciation of all that was about.

There was a sense of foreboding as we explored between the trees but we forged on, overcoming the guilt and fear. However, the excursion did not bring a negative outcome but a vision of loveliness that I can recall to this day. The forest opened up on a farmer's field. I did not know that I was looking on a farmer's field in Fraser's Grant but only that the woods had gifts in store, secret meadows of green within its very heart.

I think this event has been a transformative one and had a far-reaching impact on my life and its future course. I think that it has taught me to work through my fears. It has helped me to realize that life has unexpected treasures in the least likely places. New

worlds can open up through exploration. You never know what is hidden in your own backyard if you only have the courage to explore it.

It has also helped me to come to understand how much I value the gifts of the earth. The rolling meadows, the verdant greens of grasslands, the topography of rising and falling hills, the sparkle of sunlight through the forest canopy, the fecund rotting leaves atop the moss and lichens, all are part of the wonder of the earth.

It has also helped me to also come to value the power of a leadership. I would never have ventured out on my own. It was a sister, who was seventeen months older, who took my hand and offered reassurance. She shaped my life through this formative experience.

My sister was the one to challenge my narrow ideas and bring a wider scope into view, which she continues to this day. In a similar manner through this research I have had the value of mentors; my patient and guiding advisors, the five preservice teachers who have taught me the value of listening, and the writers like O Sullivan and Berry who bring the seeds of hope through their envisioning of the cosmogenesis of our world. The beauty of the world around me was astonishing at the age of four and it continues to delight and astonish me with its beauty today as I continue to deepen and the understanding of my connections to it.

Chapter 2: Literature Review

The goal of this research project is to find the kinds of experiences in the participants' life stories that have shaped their ecological identity. This chapter reviews some of the body of research that seeks to deepen our understanding of our role in our environment. A number of researchers have begun to delve into the topic of ecological identity in depth and some of the research has led to our post modern understanding in this field.

One stream of postmodern thinkers suggests, the dream that drives our actions is inappropriate (Berry, 1999; O'Sullivan, 1999). Such postmodernists advocate that the world needs a new vision to carry us into the next millennium. The world does not need to reconstruct or repair their vision for the future or add an addendum but rather to admit that it is formatively inappropriate and therefore transform the vision to one that is more life centered or bio-centric and values all life on the planet; rather than placing human concerns in an elevated place. In the past, anthropocentric thinking has led most western societies to decisions based on best possible short-term outcomes for humans (O'Sullivan, 1999).

This research looks at indigenous wisdoms to see how some indigenous cultures were able to live in unity with their landscape before the arrival of the Europeans. Culture is examined as a lens to see if it is able to provide answers for adopting a new view of humans' place in the cosmos. Cultural differences are investigated for cues as to how our ecological identity is impacted by the culture in which individuals are immersed (Berry, 1999).

In the past, ecological relational knowledge that informs of the consequences of one's actions in the world has been weak (Krashen, 1987). People don't always understand how things work together (Fischer, 1999). We have failed to see the larger cause and effect relationships. This has allowed society to make decisions that are based on short-term gain without taking into consideration the full consequences of our actions (Berry, 1999). We do not truly see ourselves as an intricate part of the web of life.

Ecological identity impacts on our political, educational and cultural lives and is in turn impacted by them (Berry). Few would argue that the current impact has been very devastating to the other-than human world and so this research will also examine our anthropocentric cultural view in the light of how we might draw on indigenous wisdoms and postmodern perspectives to build a vision of hope for an ecological era for the planet (Berry, 1999). I begin by examining the philosophical stances that understate environmental literacy; I then examine language and how it influences culture and knowing; finally I review postmodernist visions of a new transformed earth and educators roles in that transformation.

Philosophical Stance on Environmental Literacy

Our cultural view of the environment, as something that is at the service of the human race, has led our actions (Berry, 1999). The North American continent has undergone drastic changes in the last few hundred years. Europeans arrived with a different world-view. They were shocked at how the indigenous peoples of the Americas viewed the land. "That there was no tendency to "use" the land in terms of exploitation;

that there was no drive toward “progress” was a decadence not to be accepted” (Berry, 1999 p.41).

Ecological Identity

Ecological identity refers to who we are and how we see our role on this planet in relation to the rest of the biosphere, atmosphere and geosphere (Thomashow, 2002).

Ecological identity is constructed through individual contact with nature and our perceptions of the workings of eco-systems (Thomashow, 2002). It entails the ways that we construe ourselves in our relationship with the earth. It is manifested in our sense of self, our values and our actions (Thomashow).

Ecological identity is viewed as part of the emerging field of Ecopsychology. Ecopsychology treats the subject of ecological identity in a holistic sense, as a part of the whole person rather than a single component. With the emergence of deep ecology (Seed, Macy & Naess, 1988) the complex issues raised by pressing environmental problems have been considered as part of cultural phenomenon that is embedded in our modern day consumer culture (Naess, Seed & Macy, 1988).

Environmental literacy, which Orr (1992) calls earth-centered education, is endemic to the person as a whole being. Thomashow (2002) says that how we, as individuals, view the environment is part of who we are. It is not separable from our being. Each person’s path to ecological identity reflects his or her cognitive, intuitive and affective perceptions of ecological relationships (Thomashow, 2002).

One’s sense of environmental identity influences all the decisions one makes throughout life (Orr, 1992). Our personal narratives define us as persons (Clandinin & Connelly, 2000). The study and understanding of formative narratives is of great

consequence in coming to understand our cultural identity (Thomashow, 1996). A person's ecological identity affects their personal decisions, professional choices, political actions and spiritual inquiry (Thomashow).

Thomashow (2002) explains that ecological identity is often revealed through transformative moments in an individual's life when they realize that their personal identity is intrinsically connected to our experience of nature. Manifestations of these transformative moments can occur through memories of special places that we recall from childhood, experiences of disturbed places that make us feel upset and experience a sense of loss, and through contemplation of wild places (Thomashow).

Thomashow (2002) suggests four questions that should be at the heart of environmental education. What do I know about where I live? Where do things come from? How do I connect to the earth? What is my purpose as a human being? The writing of Berry (1999) and O'Sullivan (1999) focus their work on this final cosmological question of humans' central purpose on earth. In responding to the larger cosmological purpose of being, their work encompasses the first three questions that Thomashow has put forth.

Thomashow (2002) speaks about the implicit duality that environmentalists face in reconciling the diametrically opposed poles of generating a sense of wonder in the earth on one hand and being harbingers of doom on the other hand. Berry (1999) and O'Sullivan (1999) resolve this dilemma by demonstrating how an intense sense of wonder and connection to the earth is central to an intimate relationship with the earth that precludes the kind of behaviors and decision making that compromise the fundamental earth relationships.

Deep Ecology

Naess (1989), a leading proponent of “deep ecology”, uses the term ecosophy to express a philosophical worldview or system inspired by the conditions of life in the ecosphere. Naess (1989) goes on to qualify that “the ecosophical outlook is developed through an identification so deep that one’s own self is no longer delimited by the personal ego or the organism. One experiences oneself to be a genuine part of all life” (Naess, 1989, p. 20). There are perceptual consequences of this more inclusive concept of the self. People begin to perceive the damage to nature as if it were done to themselves (Macy, 1991). This can make life painful for environmentalists when they are witnessing ecological devastation (Thomashow, 1995).

Ecopsychology

Ecological identity is part of the emerging field of ecopsychology, a relatively new endeavor within the past 10 years (Hasbach, 2003). Ecopsychology is the study of the person and his or her relationship to the world. Ecopsychology is psychology in the service of life. It has emerged from the understanding that the human is destroying the very environment that they need to sustain themselves (Hasbach). The outer environment and the inner worlds of our minds support each other (Hasbach).

Ecopsychologists attempt to determine if there is a psychological relationship between ecosystems and people. Ecopsychologists are interested in the emotional effect of having one’s life so separated from nature. In today’s Western world over 95 percent of people’s time and 99.9 percent of our thinking is disconnected from contact with its supportive biological, sensory and spiritual origins in nature (Cohen, 2001).

Snyder(1984) delinates how as psychology developed as a science, early psychologists were first preoccupied by the intrapersonal space and the life that takes place within the human, as the science progressed however, it began to consider interpersonal relationships (Snyder, 1984). Family theory came to the fore as being of great importance in shaping how an individual grows and develops (Snyder). Snyder explains how ecopsychology took the next obvious step in studying how the environment in which individuals exist impacts them.

Ecopsychologists recognize that the environment plays an important role in the human mind and how it functions (Fischer, 1999). Maser(2003), a professor of ecopsychology at the University of Prince Edward Island, reported that not 10 years ago, if an individual told a psychologist that they were having recurring dreams about mountains of garbage, the psychologist would ask the person how their relationship was with their spouse (Maser, 2003). “A central assumption of ecopsychology is that the outer world of our environment and the cultural and political processes that support it, influence our inner world of personal experiences and feelings”(Hasbach, 2003, p.32). Therefore, the mind finds expression in how it relates to the surrounding environment.

Maser (2003), told a fable at the Environmental Education and Communication Conference, in which there were a couple of men sitting by riverbanks enjoying the sunshine and just relaxing. Suddenly a sound came from the river and someone was crying out for help. One of the men dove in to the rescue. The current was strong but he got back to shore and pulled himself and the victim out of the water. Just then he heard the sound of a second person. Almost blacking out he went over to the riverbank and jumped in for the second rescue. When he got back to shore with the second person now

safely on the bank, he sat down in exhaustion to hear the cries of a third victim. His friend who had been watching these heroics said, I think I'll head up the shore to see whose throwing all these folks in.

Maser's (2003) story is a metaphor for how past approaches to environmentalism has been reactive approaches. They are about developing a large-scale guilt complex. They are not about the love affair that Lovelock (1979) claims we could be having with the only habitable space that we now know in the cosmos.

Human-centered versus bio-centric views

Western society has not structured itself in the past to see the individuals' role as human beings as part of nature but rather as something removed from it. Einstein (1949) addressed our distance and our disconnect from nature.

“A human being is a part of the whole called by us “the universe,” a part limited in time and space. He experiences himself; his thoughts and feelings as something separate from the rest, a kind of optical delusion of consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and affections for a few persons nearest to us. Our task must be to free ourselves from this prison by widening the circle of understanding and compassion to embrace all living creatures and the whole of nature in its beauty.” (p. 125)

The past century has greatest extinction since the Mesozoic Era, 65 million years ago; it seems that humans face the most profound question of our cosmological moment (Berry, 1999). What needs to be done to change the collective consciousness?

“Participatory consciousness encompasses our conscious lived awareness of our particular place and moment in the cosmological web of life at multiple levels in a

continuum with our embodied unconscious” (O Neil, 2003, p. 187). Norton (1991) and Grey (1998) advocate, that to correct an anthropocentric bias, people must defend a conception of environmental values that renders human values marginal. The present work of changing our outlook as an entire society to one that is more life centered is what Berry has termed the “great work” (Berry, 1999).

However, the public dialogue has begun in regards to the anthropocentric view (Quinn, 1992). Quinn’s popular fictional account, *Ishmael*, tells the story of an ape that challenges humans to see how they are confined by their anthropocentric state. As with any cultural change, entering into the conversation will produce new meanings negotiated through the discursive process (Freire, 1994). This cosmological moment in history has brought humans to the consideration of this point. Up to this point in our human history, we really were not forced to consider the value of the rest of the biosphere. However, the eminent extinction of so many life species is forcing us to reconsider our past views (O’Sullivan, 1999).

Biophilia, a Love of Life

Biophilia is an instinctive love of life. Wilson (1984) refers to it as “The connections that human beings subconsciously seek with the rest of life”(p. 22). Wilson advocates an emotional and spiritual dimension to our relationship with the rest of the living world. “Humanity is exalted not because we are so far above other living creatures, but because knowing them well elevates the very concept of life” (p. 22).

Berry (1999) posits that in the past, all of our basic rights and values have been identified as human values. Land only receives its value in the usefulness that it provides to the human world. This attitude has brought about devastating results for all

species other than the human species. Our cultural traditions know how to deal with homicide, suicide and genocide but collapse entirely when forced to deal with biocide.

New approaches encourage us to develop sensitivity to the entire living world. Berry (1999) explains the Earth Charter is a declaration that seeks to inspire in all peoples a shared responsibility for both the human and the “larger living world”. The ecological community is not subordinate to the human community. “The basic ethical norm is the well being of the comprehensive community and the attainment of the human within that community (p. 105).

Humans have an anthropocentric view, seeing themselves as a species apart from the other living things (O’Sullivan, 1999). Taking a postmodern, biocentric approach, O’ Sullivan proposes a transformative vision for the way, we, as humans, see our role in nature. Postmodern understandings present a very different role for the human species. The last 400 hundred years have witnessed an industrial society make decisions that are based on benefits to the human species (Berry, 1999). Part of the problem has been the manner in which language and knowing are tied.

Language and Knowing

One of the difficulties in developing an ecological culture is our language. “Our traditional European languages express the anthropocentrism of past orientation” (Berry, 1999, p. 101). We don’t always have the words we need to express ideas that are contrary or obscure to the culture that developed the language. Language plays such a pivotal role in understanding our socio-cultural relationships (Vygotsky, 1985). Different cultures have other ways of knowing the world that can be spiritual and embodied in their nature. Different modes of knowing our world influence the worldview of different cultures.

Language as a Purveyor of Culture

The language in which we, as people express values has been co-opted by the industrial establishment to create illusionary worlds in which we live. Berry uses other cultures as a lens. All cultures privilege some interactions and ignore others. A culture of environmentalists would privilege the rights of the earth community (O'Sullivan, Morrell, & O'Connor, 2002). We need to listen to alternative stories of the culture of environmentalists and indigenous peoples so that we can develop a new socio-cultural way of naming our world and our place in it. Indigenous knowledge refers to those whose knowledge resides in origin, place, and history (Dei, 2000)

The major problems in the world are the result of the difference in the way that nature works and the way that humans think (Krasden, 1987). Dualistic language reflects individualism. Our culture does not know how to describe relations well (Fischer, 1999). As humans, we have become a macrophase power on earth in the realm of glaciation as an extinction tool but we have a microphase understanding of responsibility that is ours. (Berry, 1999 p. 101)

Languages contain cultural cues as to the way of naming the world within a particular culture. Language after all is a context in which learning occurs, English is a language that is object based. It has many nouns. Mi'kmaq language differs from English in that it is a relational language. In the verb-based, Mi'kmaq language, the world is told in the relationships. It names the world through verbs rather than through nouns as in English. It is a whole other way of thinking, a way of seeing the world. The Mi'kmaq cannot be understood apart from their language (Paul, 2003). Paul says that her first

language Mi'kmaq is the only language in which she is able to express the cultural ideas that she wants to put across in her writing.

Other Ways of Knowing

Looking closely at success of indigenous peoples who have left a small ecological footprint we can gain insight into modes of viewing the world that may promote greater unity with nature (O'Sullivan, 1999). A new way of seeing the future may be assisted by an in depth look into cultures that have had harmonious relationships with nature in the past (Suzuki, 2002). Berry (1999) also outlines the connectedness to nature of first nations persons: "Their spiritual insight in to the trans-human powers functioning throughout the natural world established the religions of Native Americans as among the most impressive spiritual traditions we know"(p.37).

The fact that native North Americans did not own property was also beyond our cultural understanding. Legend holds that Dutch went away laughing after purchasing Manhattan for 24 dollars in beads; the natives also went away laughing that they had received something for a piece of land which everyone knew could not be bought or sold. "If the original peoples living in North and South America have not previously entered our general account of the human venture, they are now recognized as having influenced the larger course of history economically and politically as well as intellectually and spiritually" (Berry, 1999 p. 36). Jacquie Howardson (2003) spoke of that impact on her.

"I believe fervently that everything is connected and that everything has a spirit or energy force. It is our sacred duty to look after and nurture the Earth and our responsibility to pass on these duties to those that come after us" (p.3).

Howardson (2003) says that indigenous cultures worldwide exist on this type of relationship with nature and pass this worldview to the next generation. She believes that it is time for non-indigenous cultures to come to understand “earth time” the way that indigenous cultures around the world do so that we can move in future directions that are more harmonious with nature.

Language carries the messages that a culture wishes to transmit to its people. Language and culture work together to provide what is needed to bring one’s thoughts to actions. It seems that language in some way confines humans. We need to break out, in some sense, to find new ways of knowing and expressing our knowledge and relationships to the rest of the biosphere, if we wish to change the underlying structure in our participatory consciousness. Traditions of the past have determined people’s spiritual insights, emotional sensitivities and language (Berry, 1999). The awareness of native peoples to the numinous powers of the continent expressed through the natural phenomenon speaks of an ancient spiritual identity (Berry, 1999 p. 39) Berry goes on to explain that to be allied with these powers is necessary for every significant human endeavor.

Everything has to do with culture, because culture is such a powerful coding mechanism (Bowers, 1995). The norm for restructuring cultural coding forces humans back to a more fundamental species coding within the larger complex of the earth codings (Berry, 1999). We must reach back to where human coding is tied to other species in order to overcome the anthropocentrism that hampers our current cosmological emergence (Berry).

Suzuki (2002) explains that the worldview of every band of humans was acquired over generations of observation and experience, and describes a universe in which everything is connected with everything else. “Our cultural traditions are constantly groping toward their appropriate realization within the context of an emerging universe” (Berry, 1999 p.106) Berry feels that people must at this point in history go back to their roots in order to find a new way into the future. By studying the ancient traditions we can learn the wisdoms that have been developed by cultures throughout the world, which help us to live in unity with the natural world (Berry, 1999; O Sullivan, 1999; Suzuki, 2002).

The Disconnect with Nature

Human ontological development, from a species that was part of the rich web of life, to one that is threatening all other life forms on the planet, is now the process of much speculation (Abram, 1995; Berry, 1999). Berry believes that there were three defining moments in our human past that have helped to bring about the disconnect with nature. The first occurred when the Christian biblical tradition joined with the Greek humanistic tradition to create an anthropocentric view of the universe. Christianity in earlier times was based on the celebration of the natural world. The combining of these two traditions brought about an emphasis on the human as a spiritual being aloof from the physical universe.

Berry (1999) explains it was the mind /body dualism, Descartes’ legacy, that the material is viewed as being separate from the spiritual, that lead to this disconnect with nature. A move to formalized religion brought about a sense that the human was above the animal world and not a part of it. Those things, which pulled us to the earth, were viewed as evil, and those things, which celebrated our spirituality, such as formalized

religion, were viewed as good. Seeing spirituality as being connected to nature was viewed as heretical. Thus Berry explains Western cultures distanced themselves from nature to prove their humanity (Berry).

The second moment, Berry points out occurred with the dawning of the great plague. Not having the capacity to understand germs, people felt that God was punishing them. This deepened their spirituality intensity but also brought about a deep sense of fear in the natural world. Nature became something to be subdued. Large numbers of community leaders and elders died. In the city of Florence alone, half of the 90,000 residents died (Berry).

The transition from an organic economy to an extractive economy brought about the third historical moment (Berry, 1999). The change from the hunter-gatherer to the agrarian society has brought about a sense of being in control of nature (Berry, 1999).

“Modern technologies and the industrial establishment under the control of the modern corporation seemed to have effected an unqualified human conquest of the forces of nature” (p.138)

Control over nature was heralded. Blocking (2000) finds this trend continues today in the field of bio-genetics where crops are being invented and the very basic building blocks of nature are being tampered with for human gain and profit. Blocking reports that in India we see the corporate bioengineering of rice with a spliced gene for vitamin b added to cure the scurvy. Ironically, beriberi and pellagra became rampant with the polishing of rice for bulk sale by corporations, which removed many of the B vitamins such as thiamin and niacin and minerals as well that would made the product

perishable and therefore affected the bottom line of corporations involved in the large scale sale of rice (Blocking).

It was the change from the hunter-gatherer to the agrarian society that brought about a sense of being in control of nature (Berry, 1999). The change from an organic economy to an extractive economy, supported by the industrial technological revolution, also saw the chemical composition of our air, soil and water change, the ozone depleted, the rainforest being diminished, and large scale mining operations return toxic wastes of smelting to the land (Berry).

At the same time the industrial revolution saw the change from an agrarian society to the urban society. Today almost half of Canada's population lives in cities. This has brought about a loss of vast areas of intimate knowledge that has been developed over time between the human community and the natural world (Berry, 1999).

Corporations were formed to take advantage of the tools of production and their influence is still increasing today. Free trade agreements would be better represented by the word "corporatization" than by "globalization" (Barlow & Robertson, 1994). Through the power granted in these international agreements corporations now have the rights to sue sovereign nation states for loss of profit. The government of British Columbia is being sued for \$300 million dollars by the Sun Belt Water Corporation of California for loss of profits because it refuses to ship bulk water exports to the United States for profit (Blocking, 2000). Nation states have lost their power to shape our future. This power which was once the sole domain of sovereign nations is quickly coming under the control of the corporation (Barlow & Robertson).

Alphabetic Knowledge as Basis of Disconnect with Nature

Abram (1996) has a different view of the beginning of the disconnect with nature. Abrams views the disconnect as beginning when the alphabet was invented. Up until that time, people used landscapes to remember their oral culture. Hillman (1997) describes Abram's book *The Spell of the Sensuous* (1996) as a foundational book for environmental understanding. "I know of no work more valuable for shifting our thinking about the place of humans in the world" (p. 270).

Abram (1996) has helped to shape the environmental movement in North America. He feels the invention of the alphabet was the turning point at which Western society changed from an oral base to a print based society; our fascination with print replaced our "sense of place" as the mediator of culture in society. Abram (2001), while speaking in Whitehorse, required his audience perform a task that was impossible in order to prove a point. Abram held up a large poster with a word on the back of it and asked the audience not to read the word when he turned the poster over. The word was HELP! Although no one read it aloud, it was not possible not to read it. This little demonstration helped to prove his point. It helped me understand that once the alphabet was developed and people became able to decipher the symbols and read, a great shift in society occurred.

Those who could read became the powerful ones in society. Soon everyone wanted to read. Stories began to be passed down in books instead of by word of mouth. The oral traditions of many peoples were lost (Abram, 1996). Abrams explains that oral cultures passed on myths and legends in this manner. With the advent of the printed word, the value of books, as a way to transmit knowledge grew while the reciprocal loss was the close ties with the landscapes, which people depended on for their very survival,

which diminished in value. As the printed word gained in importance, the stories that had been passed on from generation to generation began to lose their significance (Abram). Many of the stories were linked to particular landscapes. In oral cultures that remain, particular stories and events are often evoked by particular landscapes.

Researchers need to bring about changes in education that help to connect students with life processes and bring them closer to an understanding of the earth as the matrix of life. Dei, an educator from Africa (as cited in O'Sullivan et al, 2002) did not feel the education that she received was appropriate. "Dei echoes many indigenous people when she complains that in Ghana she received a formal schooling that was very disconnected from the life of the community" (p. 123).

Abram (1996) has been able to stand some of our cultural views on their heads and help to shed light on how the disconnect with nature occurred. Abram feels that some indigenous cultures are still closely connected to their landscapes and live in storied proximity to it. "If we do not remember ourselves to our sensuous surroundings, if we do not reclaim our solidarity with the other sensibilities that inhabit and constitute those surroundings, then the cost of our human commonality may be our common extinction" (p. 12).

The outdoor world, that had so long triggered the memories for an oral based culture, was now seen replaced by the printed word to carry the dominant cultural messages (Abram, 1996). Profound changes in people's ways of thinking must occur at a very deep level, a level of cultural transformation, as current ways of thinking and being in our world are so ingrained in Western consumer culture (Berry, 1999).

As a species, we have arrived at a place in our cosmogenesis where our presence on the planet is a threat to all other life forms (Berry & Swimme, 1995). Whatever past influences have led us to this point in our history are important to examine and come to understand but they are not as important as the steps that we take from here. Knowing our place in the scheme of things and accepting a new role in our future is the task that now must consume us as a member of the earth community (Berry, 1999). Berry feels that we all have a great task set upon us. It is the accepting of this new role that will carry us into the Ecozoic Era. “That the human and other components of earth form a single community of life is the central issue of the Great Work” (p. 115).

A New Dream of the Earth: A Transformative Vision

O’Sullivan (1999), in his book *Transformative Learning*, seeks to convince people that the whole basis of society needs to be restructured. The dream no longer drives the action; humans need a new myth to guide our future as a planet. “Few things are as destructive as a dream or entrancement that has lost the integrity of its meaning and entered into an exaggerated and destructive manifestation.”(p. 3).O’Sullivan’s exciting integration of issues of peace, social justice and ecology entails the radical restructuring of a vision for the future. It encourages us to critique the culture of rampant globalization and consumerism. It leads humans away from an anthropocentric view of the universe, in which they sit at the top of the food chain and dominate the environment to allow the fullest participation in consumer society. It speaks from an earth-centered view encouraging a holistic view of our place in the cosmos. Transformative learning brings ecological survival to the forefront as an integral part of the picture and not an add-on. It is a deeper bio-centric ecology.

Taking a cosmological, post-modern, earth-centered perspective, O'Sullivan undertakes a look at the foundational level of our society (1999). His work draws from critical theory, indigenous wisdoms, chaos theory, postmodernism and feminist theory to bring about a radical shift or turning away from the manner in which people live and learn about our world. It replaces our modern mythology with a new vision of our human place and purpose in the cosmos. O'Sullivan et al. (2002) working definition of transformative learning succinctly speaks of O'Sullivan's radical aim to revise the way in which we *are* in the world.

“Transformative learning involves experiencing a deep structural shift in the basic premise of thought, feelings and actions. It is a shift of consciousness that dramatically alters our way of being in the world. Such a shift involves our understanding; of ourselves and our self-locations; our relationships with other humans and with the natural world: our understanding of relations of power in the interlocking structures of class, race, and gender; our body-awareness, our visions of alternative approaches to living: and our sense of possibilities for social justice and peace and personal joy” (O'Sullivan et al., 2002 p. xvii)

The modern mythology of what O'Sullivan terms the Cenozoic Age (1999) has lost its relevance. It has outlived its usefulness and is leading people on a path of destruction of habitat and the loss of the many species. Perhaps even to a total destruction of the planet. It is therefore called the terminal Cenozoic because it represents the last days of an era in the evolution of our cosmology (1999). O' Sullivan's vision is so radically different that it represents a transformation into something that in no way resembles our past vision or dream (1999).

O'Sullivan (1999) challenges the human species to take up a new dream that will drive our actions into the next era. It involves a critique of the current culture and its formative appropriateness. Some have to come to see how our dream for the planet differs from what we are being told is our dream (O'Sullivan). Reformative criticism would seek to reform the current system; however transformative criticism seeks to replace the current system with something new (O' Sullivan, 1999). If the dream was to have material wealth at any expense, then the dream has to be viewed in the light of the current day. Postmodernists have come to see how the dream of a colonial empire has played out for many of the world people (O'Sullivan).

The dream of a global economy is wreaking havoc around the world as wealth is being concentrated in the hands of a few (O'Sullivan, 1999). Instead of moving people in boats to be enslaved in a new land, corporations now move jobs around the globe to enslave people with more stealth and secrecy, so that the new slave masters can be removed from the plantations and living elsewhere, unknown and bearing no responsibility for their actions (Klein, 2000).

A Post Modern Vision

Humans are but one manifestation of the living diversity that comes from the matrix of all life, the earth (O'Sullivan, 1999; Berry, 1999). Just as we, as a civilization, had to make a quantum leap when we discovered that the earth was not flat or the sun did not revolve about the earth, we are asked again to give the world a new reading, to come to see our lives in a different way, to take up a new vision statement that will transform our lives (O'Sullivan, 1999).

Just as circumnavigating the globe challenged the theory of a flat earth, space travel has had an impact on the way we see the earth, our relationship to other living things and our place in the cosmos. The present cosmological moment is unlike any other in our past because astronauts have helped to shape a perspective of the earth and our place in the cosmos (O' Sullivan, 1999). Kelly, a Russian astronaut, had a revelatory experience when he saw the earth from space.

“ The earth looks even more magical at night than it does in the day. Flashes of lightening sometimes cover up to a forth of the continent...a play of light... All of a sudden, against your will you might imagine that the lightening comes not from a natural storm, but from the explosions of bombs. No, this must never occur. Let only the northern lights and lightening blaze above our precious jewel.”
(O'Sullivan, 1999 p.68)

Astronauts' views of the earth from space have helped to bring about James Lovelock's, Gaian Hypothesis, (Lovelock, 1979) through which the earth itself has come to be seen as a living organism. James Lovelock, its originator, uses the metaphor of a tree to make a comparison to the earth.

"You may find it hard to swallow the notion that anything as large and apparently inanimate as the Earth is alive. Surely, you may say, the Earth is almost wholly rock, and nearly all incandescent with heat. The difficulty can be lessened if you let the image of a giant redwood tree enter your mind. The tree undoubtedly is alive, yet 99% of it is dead. The great tree is an ancient spire of dead wood, made of lignin and cellulose by the ancestors of the thin layer of living cells, which constitute its bark. How like the Earth, and more so when we realize that many of

the atoms of the rocks far down into the magma were once part of the ancestral life of which we all have come." (p. 77)

The earth has been viewed as solid and unchanging constant in our lives. In reality, its continents are floating on a sea of magma, deserts creep across continents, mountains are growing under the ocean, rivers twist and turn cutting new river beds, as do the veins in our bodies when old routes become blocked, and water is constantly being purified. Nothing remains constant but changes itself (O' Sullivan, 1999). Just as human physiology can be viewed as a system of interacting components (nervous, pulmonary, circulatory, endocrine systems, etc), so too can the Earth be understood as a system of four principal components (atmosphere, biosphere, geosphere, and hydrosphere). Thus we find in this more holistic approach, the Gaian specification being made by Lovelock's use of this term "geophysiology" for the investigations of earth, life and ecological science. As with human physiology, it emphasizes its biological base, the perspective of the whole system, and an interest in systemic health (O' Sullivan, 1999).

Lovelock's Gaian hypothesis has brought about the understanding that the earth reveals a capacity for autopoiesis and self-regulation (O'Sullivan, 1999). "We are just beginning to become conscious of the fact that the earth has a deeper evolutionary trajectory that goes well beyond any human designs that we have had on it" (p.211). Autopoiesis refers to the deep renewing qualities of all living structures that maintain and enhance the integrity of the structures of life processes (O'Sullivan).

From a Micro lens to a Macro lens

Over the past century, our Western society has become enchanted with closely examining the very smallest units of the universe, but Berry (1999) and Swimme and Berry (1992) suggest that it is indeed time to take a look at the big picture, from a cosmological standpoint. For a number of years researchers have used a micro lens, now we are being asked to use a macro lens (Berry, 1999; O'Sullivan, 1999).

In the past, education has led educators to compartmentalism (O' Sullivan, 1999). It is no longer anyone's business to think about the dynamic whole. (Toulmin, 1985) We have been busy with specialization, with studying and working in one little corner of specialization. Psychologists do not confer with biologists or chemists. Each discipline works within its specialty. Seeing the universe in mechanistic terms is one of Newton's legacies to the scientific worldview" (O' Sullivan, p.85). The scientific worldview also espouses the principal of analysis, which is contrasted by the synthetic principal that the whole is greater than the sum of its parts. Newton's revelation came through the synthesis of mathematics and physics from the earlier ideas of Kepler and Galileo (O'Sullivan).

"The cumulative impact of the Newton's and Descartes legacies had a profound impact on how we have come to view the natural world "(O Sullivan, 1999 p.86). The enchantment with the natural world felt by premoderns has been replaced by a fear of nature in the modern world (Merchant, 1995). The result of which has been a fragmentation of persons from their spiritual being, from their habitat, and from the planet and the cosmic processes of which they are a dynamic part (O'Sullivan, 1999). The metaphor of the earth as mother vanished as the scientific revolution mechanized and rationalized humans worldview (Merchant, 1995).

As humans, we need to reawaken the mystery of life (O'Sullivan, 1999; Berry, 1999). We need to come to see that it is our relationship to the earth that is primal. We must form a relationship with the earth that carries our respect for it, and then all of our decisions will be based out of that framework (O'Sullivan, 1999).

According to O Sullivan (1999), our education system has steered away from any kind of spirituality because of its connection with organized religion (O'Sullivan, 1999). Transformative education reunites us with the mystery of life. It understates the place of all beings in the cosmic unfolding of place and time. It is a huge homecoming in which we come to see ourselves as part of the evolutionary process, as part of a cosmological process that continues to unfold in an ever-changing and continuous process.

University's Role in Leading Transformative Change

The universities role in leading the charge from the late Cenozoic into the Ecozoic Era has been considered by Berry (1999). He says educators are a "controlling profession" by providing a sense of reality in how the human fits into the larger community of life (p. 80). Education provides our central life interpretation and sense of reality at a very deep and ultimate level of significance. O'Sullivan (1999) also cites the impact of education, "The wisdom of all our current educational venture in the late twentieth century serves the needs of our present dysfunctional industrial system" (p. 7). He acknowledges that education provides our worldview, which must be understood at the intellectual, emotional, moral and spiritual levels of understanding and cautions that the current system feeds into industrialism, nationalism, individualism, and transnationalism, which exacerbate the ecological crisis that the planet is now facing.

O'Sullivan (1999) emphasizes that with the nation state losing its relevance and the forces of the global market gaining unprecedented powers, environmental disaster looms large. Yet most education systems have divorced themselves from the process of change and have become agents of the global corporatization, which serves individualism and profiteering and has compartmentalized environmentalism to a piece of a puzzle rather than integral to the whole of existence (O' Sullivan, 1999).

Furthermore he points out that increasingly public funds have been diverted away from public education with universities being forced to rely on funding from private sources. "Although the globalization Utopia still moves forward on the basis of this optimism, we are now coming to see that this sense of optimism has little basis in current historical reality" (p.37).

Berry (1999) thinks the university has a lead role to play in leading the transition into the new Ecozoic Era. Berry concluded that there are three central purposes of education, to survive, to critique and to create (1999). O' Sullivan (1999) concludes that at present there is no creativity because there is no viewpoint or consciousness that sees the need for new directions in education.

O'Sullivan emphasizes that before we are humans, we are earthlings. Our soul structures have been nourished in the matrix of earthscape. We would be different if it had been moonscape. Coming to understand our home and to value it "as the primal matrix for our species as well as many others" (p. 262) is a world view which has been cultivated by indigenous groups who have referred to the earth as mother, showing an understanding of how the human soul is nourished by the natural world which surrounds us. Suzuki (2002) similarly claims, "If we can see, as we once saw very well, that our

conversation with the planet is reciprocal and mutually creative, then we cannot walk but carefully in that field of meaning” (p. 206).

Many researchers have established that there is indeed a problem. “Resisting the institutional politics that foster the social construction of modern disciplinary boundaries, they are revealing that the ecological crisis is in fact a problem of grave moral proportions” (Prakash, 1995). In order to save the planet, humans need fundamental changes in the way they make systemic decisions. All institutions need to reflect a new way of thinking, a new way of seeing things (Berry, 1999). Humans must learn from all people and cultures that have shown their respect, stewardship and connection to the earth in the past (Berry, 1999; O’Sullivan, 1999).

Orr (1992) fails to see ecological literacy as no different from and a part of moral education. Orr argues that all education is moral education. He emphasizes that ecological education is not an add on; rather, he sees it in the same vein as John Dewey, as an integral part of doing the moral thing. O’Sullivan expresses a similar idea thus: If it is the dream that drives the action, then we need a new dream for the earth. (O’Sullivan). Berry (1999) believes that moral educators have been relying heavily on guilt and fear to motivate people to action but we must somehow figure out how to connect with our passion for a new dream for the earth.

Jouissance is a term used by Barthes (1979) to denote a loss of subjectivity and a total engagement with work. It is a state of creative productivity. The flow state is another way to describe what some people call the *joi de vivre* (a labour of love). This occurs when people are totally engaged in their work. Human engagement is of absolute

importance. Suzuki (2002) believes that it will take passion, a love of our home, to save the earth not science alone.

O Sullivan (1999) points out that the Copernican Revolution brought about a revolution in thought. A radical paradigm shift was required to incorporate the view of a heliocentric universe into the collective conscious. Today we need to make another huge shift in our way of thinking from a mechanistic analytical model to a cosmological perspective.

He explains that we need to make a shift from an anthropocentric view of our planet to a bio-centric view. Teachers, educators and universities in particular must lead the way into a new era of thought and action, the Ecozoic Era. By coming to understanding what helped people connect to the earth in the past, educators can develop the kind of ties that will bring a passion, that will color all future decisions for our planetary home. O'Sullivan stresses that the human spirit is embedded in community at many levels, "We are members of the universe community, the earth community, the animal community and the human community" (p. 261)

Lovelock (1979) claims that as human beings we cannot return to our past; we have seen our planet from space. Having seen our home rotating in space has given us a postmodern perspective. We are at a new moment in our cosmogenesis (Lovelock, 1979).

" We cannot doubt that we too have been given the intellectual vision, the spiritual insight, and even the physical resources that we need for carrying out the transition that from a period when humans were a disruptive force on the planet earth to a period when humans become present to the planet in a manner that is mutually enhancing" (Berry, 1999).

Suzuki (2002) also acknowledges that as humans we cannot return to our past, too much has intervened but we can take another look at the wisdoms of the past and the relationships that cultures other than western culture have formed with the Earth. He explains, a world that is seen as raw material, dead matter; can be made into things but has nothing sacred about it. People can cut down a grove of trees, because it is only matter. Suzuki emphasizes the need to change that view:

“ If we are to balance and direct our huge technological muscle power, we need to regain some ancient virtues: the humility to acknowledge how much we have yet to learn, the respect that will allow us to restore nature, and the love that can lift our eyes to distant horizons, far beyond the next election, paycheck or stock dividend. Above all we need to reclaim our faith in ourselves as creatures of the Earth, living in harmony with all other forms of life” (p. 207)

Personal Stance

Through the power of these new postmodern visionaries, a new dream for the earth is emerging that is moving us toward the Ecozoic Era. These currents of change will help us to rethink our place in the universe in relation to the rest of the universe. A revolutionary shift in our thoughts and actions is required to bring our species into a new relationship with the rest of the planet. The emerging field of eco-psychology helps us to deepen our understanding of our relationship with the earth. In my methodology, I will explore ecological identity as the vehicle that can help our species come to know, understand, and celebrate our current connections to the earth. Through this knowledge of our earth connections, I believe we can come to know our current earth connections and through this knowing, help shape the directions that will carry us in new future directions.

Chapter 3: Research Methodology

Introduction

This chapter presents narrative inquiry as an appropriate research methodology to be used for this study of formative episodes in ecological identity. Data collection methods are described, as well as any ethical issues that could be of concern in carrying out the research.

Five preservice teachers agreed to participate in this research to search for formative episodes in their ecological identity. The narrative inquiry took place over an 11 week period during their preservice time in the school system. A baseline questionnaire, taped individual interviews, and focus group sessions provided the data for journaling and interpretation. Reflecting on my journal entries and observations of the participants provided insights into the kinds of experiences that have formulated the participants ecological identity.

Narrative Inquiry as Research Methodology

Narrative inquiry is an accepted method of research that provides a rationale for narrative modes of knowing, interpreting, and researching (Clandinin & Connelly, 2000). Clandinin and Connelly make a good case for narrative as research methodology as a scholarly discourse that is capable of uncovering the content of human lives.

Narrative inquiry works on the borders of reductionist research traditions which break down phenomenon into analyzable parts, and formalists, who begin by forming theoretical positions (Clandinin & Connelly). “The decision to proceed from a qualitative stance reflects a decision to work with and towards complexity” (Schram, 2003. p.12). In a postmodern stance, qualitative researchers see value in investigating

their subjectivity and exploring their personal assumptions to see how it shapes their inquiry and its outcomes (Schram).

However, narrative inquiry as a valid methodology for research is not without debate. Kaplan (1964) asserts that if you can't measure it then it isn't worthwhile doing. He shows little confidence in a form of research that does not deal directly with measurable data. Borman, Le Compte, and Goetz attest that the criticism of the qualitative paradigm arises out of an "erroneous equation of the term "empirical" rather than any real defect in the qualitative paradigm itself (1986, p. 51).

"Others point out that there are many in the quantitative and qualitative paradigm that bask in the value of science"(Schwartz & Jacobs, 1979 p. 4). "Qualitative inquiry is a complex and contested work in progress" (Schram, 2003, p.12). Some researchers choose not to respond to this debate at all, signaling that a response adds fuel to the fire. Others choose to extol the virtues of qualitative research (e.g., Clandinin & Connelly, 2000). I choose however not to enter directly into the debate, but to rather to agree with Eisner (1981) that both types of research have their purposes (Eisner, 1981). Eisner posits that quantitative research itself also uses qualitative descriptions to define the quantities that they measure, and so there is not the rigid separation of the two paradigms that is implied by Kaplan.

Although narrative inquiry is subject to the essential fallibility of human beings, it can still empower us to theorize about our own professional practice and help us to improve the quality of our own learning and that of others. "Narrative inquiry can complement empirical research" (Dunpath, 2000 , p 543).

Individual experiences are always political. They are embedded in power relations

(Dunpath, 2000). Scientific enquiry is not always able to take this into consideration (Dunpath). There is, however, certainly important value in both kinds of study. Eisner (1981) reframes the whole argument into a “win win” situation for both camps. Education must go beyond the empirical-analytical and historical hermeneutic to become a form of acquired self-knowledge (Eisner, 1981). Eisner urges, “It is the artistic to which we must turn, not as a rejection of the scientific, but because with both we can achieve binocular vision. Looking through one eye never did provide much depth of field” (p.9).

Teacher’s Voices in Educational Research

Teacher’s voices in general have been absent from educational research. (Blackmore, 1993; Weiner, 1993; Yates, 1993) This may have contributed to a view of teachers as apolitical. The teacher is not simply a practitioner but a person with a unique history, which has an impact on how and what they teach. Coming to understand the importance of teachers stories and how they impact on their approach in the classroom is an area of research that is long overdue (Blackmore& Kenway, 1993).

Research with the players in the educational process in the field seeks to give voice to teachers, teacher educators, and students. Research participants re-present their lives to other teachers and to students through our stories. By examining stories of the participants, critical episodes that have impacted on how the individual sees the world or how the teacher tells their story will become more apparent (Dunpath, 2000).

In this study, reflection on how the participants’ narrative impacts on their attitude towards content will enable me to theorize about the kinds of experiences that might be helpful both within the institutional school setting and within the personal lives of individuals. This insight for my theorizing is consistent with Dunpath’s (2000)

observation: “Without this new way of seeing the teacher, our insight into how teachers develop can only be myopic” (p. 5).

Story Telling as the Organizing Principle of Teachers’ Lives

Individual narratives can, in another sense be confusing and chaotic (Hargreaves, 1993 p.96). Since narrative inquiry tends to emphasize individual stories, researchers can focus on the diversity of voices and become overwhelmed and fail to find a unifying theme. As teachers we are continually reinventing ourselves and it is through sharing our narratives that we reflect and change our own story. The life histories of teachers are complex and reflexive. Life is diverse and continually challenges us to reinvent ourselves as an ongoing social project. Without this continual challenge to change we risk becoming stagnant dead wood (Hargreaves).

The cacophony of pluralistic narratives can bewilder but the struggle to make sense of participants’ lives is ever present (Clandinin & Connelly, 1996). It is by story telling that researchers make sense of the conflicting voices that pepper peoples lives. Story telling is the organizing principle of educator’s lives (Clandinin & Connelly). It is the way in which teachers’ experience of the world is rendered meaningful. “Narrative is a perceptual activity that organizes and explains the experience of our lives” (Cortazzi, 1993, p. 19).

“Without a clear focus on this contextual intersection of life in relation to history, social science, education, feminist, and minority perspectives, writing biographies are indeed trivial pursuits.” (Dunpathy, 2000, p. 543) Hargreaves (1993) warns that the study of teachers’ narratives that focus on the personal practical has thwarted the study of teacher development to the exclusion of issues that are embedded in the social, political,

and historical. “Without a clear focus on the intersection of life in regards to the history, politics and social science, we have nothing short of structured neglect” (Hargreaves, 1993).

Story telling is an ongoing process throughout people’s lives. Stories invite individuals to speculate on what they might change in our approach or adopt from the approach of another. Having the opportunities to hear the stories of others, allows one to reflect on what it is that we either embrace or defer.

Language as a Tool of Cognitive Development and Identity

“The narrative approach is an authentic means of looking at how the motives and practices of individual teachers reflect the intersection of institutional and individual experience” (Dunpath, 2000, p. 543). Cognitive skills and patterns of thinking are not primarily determined by innate factors, but are the products of the activities practiced in the social institutions of the culture in which the individual grows up. In this process of cognitive development, language is a crucial tool for determining how the child will learn to think (Thomas, 1993).

Narration is a displacement of inner reality to an outer reality (Wetherall & Noddings, 1991). Clandinin and Connelly (2000) find teaching is often an isolating process. They suggest giving educators an opportunity to meet in a focus group and share their stories provides a rich and stimulating environment for all those who are present. Similarly, the stories I search are the stories of real teachers. Helping them come to understand the importance of their personal stories and how their personal biases may affect their future teaching outcomes and is important in and of itself. Likewise Clandinin and Connelly find that stories become a kind of architecture through which teachers

construct and deconstruct ourselves as teachers. Dunpath (2000) reports that it is through the dynamic process of reflection, change, and reconstruction that teachers shape their personal narratives

Importance of Dialogue in Shaping Identity

Western society has an anthropocentric base, in which humanity is portrayed as separate and above other life forms. A more bio-centric view of our world may see different kinds of conversations developing, a new discourse in which all decisions are made from a bio-centric perspective. To create this new world and think in a new way, people need the tools of thought, words. Patterns of thought are the socio-cultural basis of communities. They are the products of activities practiced in social settings (Bakhtin, 1984). “Consequently, the history of the society in which a child is reared and the child's personal history are crucial determinants of the way in which that individual will think.” (Thomas, 1993, p. 77)

“Life by its very nature is dialogic. To live means to participate in dialogue: to ask questions, to heed, to respond, to agree, and so forth. In this dialogue, a person participates wholly and throughout his whole life: with his eyes, lips, hands, soul, spirit, with his whole body and deeds. He invests his entire self in discourse, and this discourse enters into the dialogic fabric of human life, into the world symposium” (Bakhtin, 1984, p. 293).

Words allow individuals to think and shape their very thoughts. Since language shapes thought (Vygotsky, 1985), patterns of thinking are not innate but are part of the landscape of our social cultural history (Luria, 1976). He concludes that thoughts are the products of our activities practiced in social situations.

Ecological identity as Embedded in Stories

The particular focus of this research on ecological identity may be very timely and of interest to a number of groups whose intent it is to develop programming that can positively affect the future outcomes for the planet and the all the living species that humans share it with. Similarly Eisner (1981) believes that within the mystery of ordinary lives are the secrets that are needed to change the course of our future.

Narratives are constructed of stories. People experience daily encounters and interactions as stories. “In narrative discourse events are always presented in their context”(Dunpath, 2000, p 548). The ecological identity of individuals resides in the stories that have shaped their lives. “The present has a storied past and the realm of a storied future waiting to unfold” (p.544).

The narrative story of how one views ourselves in regards to the rest of the living world involves one’s ecological identity. Participants in this research tell their stories as to how they experienced the natural world in their lives. Similarly Dunpath (2000) claims that “The study of narrative is therefore the study of ways in which humans experience the world” (p547). In my study, the characteristics and concepts sought after have more to do with the what, how when and where than they do with the count or measure of ecological identity, and for the research question are better suited. The research methods of narrative inquiry can provide the kinds of information about the acquisition of environmental literacy that is most informative.

Qualitative research methods are not associated with quantitative data collection methods. The search for ecological identity requires more discerning of the essence of the thing rather than formal measuring. For this research, interpretive methods are better

suiting to the objectives of searching for ecological identity. As Berg (2001) explains, “Many researchers believe that the social sciences have depended too much on sterile survey techniques regardless of whether the technology is appropriate or not” (p.10).

Personal Stance

Committing to a basic premise that the status quo is not acceptable and that there must be a change in how we as humans relate to the planet will determine how I position myself as a researcher in this study. Personal stance also impacts on voice. Qualitative inquiry is often referred to by different professionals (e.g., Schram, 2003) as being, naturalistic, interpretivistic, constructivistic, phenomenological and hermeneutical. Additionally Schram notes these terms refer to the nature of the paradigm to denote similar notions and shared understandings.

My research stance is similar to that of Le Compte and Schensul (1999), namely that the qualitative paradigm refutes the notion of truths but suggests that the shared understanding of what people know and believe to be true about the world is socially constructed. Constructivists operate from the belief that all constructs are valid. Therefore the purpose of the research is to come to understand the complex constructed reality by examining those who live in it (Schram, 2003). Therefore constructing a reading of multiple readings is indeed a complex task.

The process of delving into the formative narratives of four preservice teachers to search for formative episodes within the narrative process is an opportunity to investigate the relationship these preservice teachers have with the natural world and how this will be manifested within educational and cultural settings in their practice as teachers.

Opportunities for change and reflection are provided to the participants throughout the study. It is with this thought that I endeavored to plan activities in which the participants had the kinds of opportunities that helped them uncover the events that have shaped and will continue to reshape their ecological identity.

Through the process of focus group activities, this study will provided opportunities for the participants to develop patterns of thought and to relate experience that they can connect to former biographical events, and in this way help to bring their embodied unconscious into participatory consciousness and interactive dialogue. This provided opportunities for the participants to identify the kinds of activities that they experienced in their past, and to explain how their ex, and to explain how their experience which helped to shape the way that they see themselves in relation to the earth community.

Weiland(1995) reports that ecological identity implies who the participants are as individuals and how they see their role as environmental educators in the future. “Individuals come to educational situations with their own temperaments, histories and purposes. Different individuals will obviously interact within the given configuration of education in different ways with different outcomes” (p. 99). Through the study of participant narratives I have sought to come to understand how an ecological identity is constructed within Canada’s cultural settings.

Data collection

Baseline Questionnaire

A baseline questionnaire (APPENDIX A) was used to assess where the students have come from and the kinds of situations that helped them to identify with the earth and

earth education. This questionnaire contained nine questions (see Appendix A). Eight of the questions were open-ended and sought information about the participants' prior environmental influences; the final question asked them to rank 10 experiences as to their ability to give the participant a feeling of connection with nature.

The baseline questionnaire, completed in the beginning of the study, provided an opportunity for the participants to establish an ecological identity without the interference of the group. It will allow them freedom to express a personal stance. The questions were my effort to capture their expression of the influence, which Grace (2000) described as a web: "The influences that shape teachers lives and move teachers' actions are more likely to be found in a complex web of formative memories and experiences constituting their life histories"(p.49).

Individual Taped Interview Sessions

A 35-minute audio taped interview session was scheduled individually for each of the participants. During the taped session, each learner's narrative was explored further using a set of 8 open-ended questions "Individual Taped Interview Questions" (see APPENDIX B). These questions focused on the kinds of experiences that each participant had reported on their baseline questionnaire to be of a formative nature and impacted most on their environmental attitudes. The participant had opportunities to direct the discussion and lead into other areas that they thought were of importance.

Criteria From the Literature For Interviewing

In designing and implementing the interview process I kept in mind a variety of criteria as reported in the literature, I list their literature criteria here. An interview is an interpersonal process and any knowledge generated from the interview is shaped by the

interpersonal dynamics of the interview whether the shaping is apparent or not (Shank, 2002). An interview is most effective when it is between one half hour to an hour long (Shank).

Being a qualitative researcher involves basically two kinds of skills, personal skills and technique skills. The personal skills are observing, conversing, participating and interpreting. Observing and conversing must be focused. It is impossible for researchers not to participate in the research. “When we learn qualitative research investigation we often have to go against our own instincts” (Shank, 2002, p. 4). The interviewer cultivates naiveté so as to allow the interviewee to expound on her or his ideas (Shank). It is important for interviewers to demonstrate that they are really listening. “This means that you are not thinking about the next question or about how smart that you can make yourself look with your next comment – the usual style of natural conversational exchange (Berg, p.118, 2004).

A good interviewer should be prepared for surprise (Shank, 2002). If an interview takes off in a direction that you had not expected, be sure to capture the essence of what is said because it is likely that you are getting good data (Shank). I endeavored not to restrict my participants in this study to the mechanics of practice, but I will gave them open rein to bring to the discussion the elements of their lives that they see as either expanding or restricting their ecological perspective. Significant others, such as mentors, parents, teachers and peers were legitimately included in the narratives of participants.

“There are basically two types of interviews, structured and unstructured” (Shank, 2002, p. 46). Shank recommends the unstructured interview because the interviewee guides it. It avoids asking leading questions. However, if a set of questions is given, the

questions should not alter the free flow of the conversation and do not necessarily need to be followed in order. The interviewer can stroke off questions that have been covered in the course of the conversations (Shank). This move to a more informal discussion can help to lead the interviewer away from the checklist or survey and allow you to gather some the kinds of information that are truly insightful.

Questions that seek to give the kind of answers that the researcher wants are known as leading questions. Questions should be phrased in a neutral manner (Shank, 2002). “The answer that you want is not necessarily the one you want to hear” (Shank, p. 46). Shank gives guidance and parameters to use in the interview process. Some of the skills and related cautions that Shank sees as important are:

1. The researcher should embrace what is humanly possible. It is important to be able to maintain a split focus so that one can track a number of different parameters at various levels of attention during the interview process.
2. The interviewer should endeavor to capture a visual picture of the interview. It is important to develop a mental picture of the interview so that the setting, body language of the participant and other visual features of the interview are captured. Being over focused on visual factors can diminish a focus on other aspects of the interviewing process that are an integral part of the picture.
3. The interviewer should also focus on the auditory outputs of the interview. This is such a critically important part of an interview. Again Shank warns that an over focus in one area can result in valuable information in another area being lost. Shank compares an interviewer to a driver who must that must maintain a split

- focus and give varying amounts of time to various stimulants along the road, being sure not to miss any parameter in the process.
4. The interviewer needs to be able to categorize the information without being so over focused on categorization that you force observations to fit pre-established categories.
 5. An interviewer needs to understand the importance of the time aspect. Answers in the morning may be different than if the person is irritable or tired late in the day. A quieter time of the day may allow the participant to feel less pressured and allow the discussion to expose more intimate information. A skilled researcher needs also to be cognizant of time.
 6. Being able to abstract the information and bring it to a higher level of analysis is critical in the analysis of an interview. Abstract reporting is the easiest to coordinate with other scientifically oriented research efforts. However, researchers can also strive so hard to be abstract that they may sometimes discard crucial information.
 7. The interactions of the participants of the process are primary. The setting is important but it is secondary to the interactions that occur. People are more important than the setting. Shank cautions that if researchers become over-focused on interacting they are likely to spend their time interacting with people sometimes paying too little attention to the environment in which the interaction with others occurs.

Focus Groups Sessions

Focus groups present rich opportunities for individuals to examine and reexamine their personal narratives. Morgan (1988, 1998) has pioneered much of the current thinking on focus groups. Focus groups developed from group therapy because it was found that people were more likely to discuss complex intimate issues if they were participating in a group discussion. “Recently reborn in the social sciences the focus group promises to quickly become an integral part of the data collection process” (Berg, 2001, p. 130)

Focus groups are useful for getting at complex underlying issues in a setting where shared experience can guide the discussion (Barbour & Kitzinger, 1999, Greenbaum, 1997). Focus group sessions provide the participants with opportunities to construct and re-construct their stories, all the while, making sense of them and viewing them in the light of the stories of the other participants, with whom they have the opportunity to interact. The focus group setting has the advantage of allowing the researcher to observe the interactions of group members (Berg, 2001).

The focus of this research was not be on the factual accuracy of the participants’ recall; rather it was more concerned with the meaning that the story represented to the narrator. Shank (2002) explains his focus as coming to understand ourselves through the ways in which we represent ourselves to others. This process holds the promise of learners’ being able to directly intervene in and change their views of what counts as environmental education and how it can be best achieved through the educational process in the home, community, and school. “The discourse amounts to a synergistically created convergence of ideas and experiences” (Berg, 2001, p.119).

The focus group setting helped me to structure activities that create complex social environments and provided participants of the study with opportunities for problem solving in a community that was both supportive and challenging. The activities brought about immersion in and with the rediscovery of ecological identity. Biographical life experiences have effects on a person's life at the surface level and at a very deep level (Denizen, 1989). Group discussions can have the effect of triggering discussion of such deep impacts.

Participants in this study were presented with a number of activities in which they participated as a focus group. The activities allowed for interaction amongst the participants in a "community of practice" setting also known as situated learning. In situated learning knowledge needs to be presented in authentic contexts and learning requires social interaction and collaboration (Mac Dermott as cited in Murphy 1999:17) Knowledge is negotiated through the interactions of the learner with other learners and the environment. Four focus groups sessions were held and I journaled what was done during this time frame.

Session 1: reading and responding

The students will be presented with a reading from each of the following books and then the informal discussion that ensues will be journal led to see what kinds of connections that the subjects will make to their own lives.

The Sacred Balance, (Suzuki, 1997)

Spell of the Sensuous, (Abrams, 1996)

Transformative Learning, (O'Sullivan, 1999)

Thinking like a Mountain, (Seed & Macy, 1988)

Session 2: quantitative versus qualitative environmental writing

Discussion of the comparison of quantitative environmental writing versus qualitative nature writing in the ecological movement. Both types of writing were considered as to their impact on individuals and their power to pass on environmental knowledge and attitudes (see Appendix C).

Session 3: view movie and respond personally

The students will view a movie I composed for the National Conference of Environmental Educators . The students were given an Ecological Identity Movie Reflections Sheet (APPENDIX D) to respond to the movie after viewing. Informal discussions of the group's response to the movie was audio taped and used for journaling. Attention was paid to the participants' suggestions for how to make the movie more engaging for viewers. More direct links to the kind of connections that the movie made to the ecological identity of the participants were sought after. Questions guided the discussion but not be so rigidly adhered to that they inhibit the fluidity of the group discussion. Opened ended opportunities for discourse in focus groups provided for unexpected results and proved more useful than confirming apriori assumptions.

Session 4: Rap up interview

What did we already know? What did we learn? The rap up interview gave the subjects a chance to have their views summarized and respond to the summary as to whether or not it is a correct interpretation of how they see the most formative environmental experiences. A 30-minute interview was conducted with each participant at which they had time for a quiet written reflection and then a more in-depth discussion followed which was taped providing opportunities for later discussion and introspection

at the closing interview. Observation allowed us to see the consequences of other's behaviors. I attended to behavior and played it out as a possible model. Having the opportunity to have their individual stories become intertwined with the stories of others held transformative potential in that it allowed for the subjects to change their stories through dialogic interaction with the other participants.

Journaling

Throughout the data gathering process, I maintained a journal. The journal allowed me to reflect on my thoughts in relation to the data that is being generated by the five participants throughout the research. Reflecting on the biographical experiences of the participants helped me to reflect on similar or dissimilar experiences that I have had and then to examine how they impacted on my life as a person and a teacher. Journaling the ideas that were gained through the data collection process gave me the opportunity to reflect on the intersection of the various narrative experiences and examine the similarities and differences amongst the stories.

Surprise is an important element as a reaction to the participants work (Shank, 2002). It was interesting to examine why an idea or experience was surprising to me. This helped me to understand my own preconceived notions and expectations from the research. Elements that were surprising were important parts of the research data to journal about so that they came to be understood as significant data.

It was likewise important for me not too force the categorization of the material into preset categories but to be open to the ideas that the participants put forth and to allow them to guide my writing and the analysis of the ideas that came out of their questionnaire, interviews, and discussions. Preset categories can also point to

assumptions that I, as a researcher may have had about what I expected to find in the research.

Voice in Research Writing

Shank (2002) advises in the manner of voice in research writing, it is not always necessary to insert yourself. You don't always have to insist on remaining in the first person. Neither do we want to use realist tales a term, which refers to a writing style in which the author is not evident but an institutional authority is present and a clear view, is posed. "We must allow our writing, even in a mixed methods design, to seek its best level of explication. If that means that we must suddenly shift into the first person, or take the confessional or a postmodern stance, then so be it" (p178). Post modern writing and the systematic search for meaning seem to go hand in hand.

Sorting truth from untruths can be difficult in the interview process. If the interviewee puts strong racist beliefs forward as facts one is not required to put them forth as facts when writing up the interview even though you may have recorded them (Shank, 2002). Shank also warns about having an envelope to push. The outcomes of research should not be decided before we begin.

The participants in this study were aware of the focus of the research when they agreed to participate. They were also aware of the kinds of experiences that were most helpful to the inquiry. They had the overall question in mind as they searched their bank of personal experiences to choose which ones were most helpful.

Ethical Concerns

The participants have agreed to participate in this research and have signed letters of consent (APPENDIX E). They are aware that they may opt to leave the research at any time. An Ethics Review Approval Letter (APPENDIX F) is included.

The interviewee should always be able to ask to have some part of the interview left out. This is their prerogative (Shank, 2002). It is a good idea to steer clear of debate (Shank, 2002). The court of law is the final place to settle questions in regards to the use of materials. It is always best to steer clear of these matters and allow your participants to ask to have some research that they feel reflects on them unfairly changed or removed (Shank, 2002).

My Application of the Methodology

It is recognized that both the quantitative and the qualitative approaches are valuable research paradigms but I feel that narrative inquiry is best suited to this particular research. “ The essence of qualitative research is the search for new insight”(Shank, p186, 2002). We must allow our data to guide our findings. This generates a feeling of trust in the process itself. It was fun and interesting to get data that was unexpected. By honoring the stories that the participants have told, I showed that I trusted the stories of the participants and I trusted the process itself to provide useful learning even when the results were not what I had expected them to be. It is important in narrative inquiry to honor what the participants have told us as a valid way of knowing the world.

All of the features of narrative; constructivistic, contextualistic, interactionistic and dynamic are apparent in my research. Narrative study’s features, (Kelchtermans, 1993,pp443-456). In setting up the focus group settings and allowing the participants of

the research to interact with each other, it would be virtually impossible to control the dynamic interaction of the participants during the group sessions.

Rather than attempting to control interactionistic variables, this research will endeavor to use the interaction of the group in an advantageous manner to add to the richness and fluidity of the individual narratives. This is in direct contravention to an empirical approach that would seek to reduce, isolate and control the interactions that might occur amongst the participants of the study. So indeed a narrative inquiry which is focused through a group approach will provide a very different kind of lens than a more quantitative and empirical approach.

It is my hope that the data that I gather, will enlighten my understanding and preconceived notions about how ecological identity becomes a part of the personal identity of these preservice teacher and how I feel that this research will provide useful data about the manner of educational opportunities that the school system could provide to help develop an ecological literacy that will reframe our current educational objectives.

Narrative inquiry allowed me to formulate the contextual factors that shaped the participants' ecological identity and to understand how these factors intersected with their political identity to impact on behavior. The methodology of narrative provided rich stories that shaped the participants ecological identity. Patterns of behavior began to appear making sense of the connections among childhood experiences, environmental attitudes and their political identities as preservice teachers that the participants had with their later attitudes Smith, (1996) said "There is an intimate connection between knowledge and activity." If there were not, then learning would be a rather pointless activity. Learning not only occurs through action but it also moves us to action.

Chapter 4: Data Collection:

Uncovering Formative Experiences of Ecological Identity

The manner in which educators teach students environmental awareness may be directly related to the educator's personal ecological identity and relates largely to their cosmological postmodern cultural moment. That is, they are impacted by the relationships that they have developed with the people around them but also by the relationship that has evolved with the world at this particular moment in their history. This research explores the formative narrative experiences that have led the participants to form both positive and negative connections with the biosphere in which they live.

I begin this chapter with the a description of how I sought to find the participants' underlying ecological identity, then describe that individuals way of knowing. Next I looked respectively at the their family's, their teachers, government's, and the media's influences on them. Finally I described their recurring themes of childhood and damaged places and experience of the wild and how they effect the participant's growing sense of the commons, places with which they identify personally.

Introduction: Formative Experiences in Ecological Identity

Ecological identity work is akin to peeling an orange; sometimes you are not sure where you are going to start. The first bite produces a quick disconcerting scent of citronella throwing you off, as did my concern when three participants expressed limited knowledge on environmental topics. A deeper look soon revealed strong ecological identities.

Peeling the orange saw topics fall into neat self-contained sections such as family, school, mentors, media, and government influences. However, like an orange that looks

totally different if peeled or sliced, you soon come to realize that no matter how you organize the information, the same themes reappear in different configurations. Slicing the orange through the centre presents a different view than the peeled version making it difficult to know which way to begin, although all views contribute to an understanding of the whole.

The interviews and discussions were centered on the connections the participants have developed with the living world and also the factors influencing these connections with nature. Relationships that have helped to foster experiences with the natural world were recorded. Important occurrences and mentors in the school, home setting, and world at large were explored. The participants were asked about the kinds of experiences they felt were most likely to lead their future students to feelings of oneness or communion with nature. Opportunities to explore nature were ranked according to their order of preference.

Participants were interviewed about the kinds of experiences they might provide for future students in hopes it would illuminate some of past environmental educational experiences they had in their own schooling and also to consider the kinds of lessons the participants might value for their future students.

Participants' knowledge of the environment manifested itself in cognitive, intuitive, and embodied ways of knowing. Nature connections were often experienced in the recurring themes of special places, damaged places, and experience of the wild. These themes did appear throughout the research in such a manner that it seemed no matter how we sliced the orange there was a certain occurrence of themes and factors of

significance that would appear and run concurrently with the cognitive, intuitive and embodied ways of knowing.

Participant's Ways of Knowing

One of the first factors that I came to recognize in collecting data on ecological identity was the participants experience different modes of knowing. When they agreed to participate in the study, three of the participants said they knew very little about ecological identity or environmental education; yet very soon after they began to talk of their formative experiences, it became apparent that although these participants had not formally taken courses of study in environmental studies, they had deep and profound ecological identities.

It was apparent they had made very deep connections with nature and that these connections to the natural world were manifested in different ways of knowing in the participants. The manner in which the ecological identity formed in these participants was of a cognitive, intuitive, or embodied sense. In coming to understand how ecological identity has been manifested in the research participants, I first examined thier cognitive, intuitive, and embodied modes of knowing.

Cognitive Knowledge

Kristen was a participant who had by choice taken programs in ecological studies in the past. Kristen's background in environmental concepts has a rich cognitive component. She displayed a very impressive breath of knowledge of environmental topics and authors. She had read extensively on the subject and was able to express complex views on the subject with the eloquence of someone who had spent years of study in environmental discourse. It is a chosen field of interest and area of study. She is

highly cognizant of her depth and breath of knowledge in this field and she is very capable and able to discuss it at will.

One way that Kristen's cognitive knowledge of ecological studies surfaced was through her knowledge of books on the topic. Kristen cited Rachel Carson's *Silent Spring* as an important book in the formation of her ecological identity, but she mentioned many authors she had read, was familiar with or was planning to read.

Carson's book presents the facts about DDT levels and a lot of other information about how the environment is being impacted. It is a book that also impacts our affective side. It presents intellectual and emotional explanations to the environmental crisis in the world. Kristen felt this book was of formative importance in the development of her ecological identity.

Kristen had thought deeply about the topic of environmental studies, and she has been overtly aware of her cognitive thinking in this regard. Kristen commented to Julie during a focus group session that Julie probably did not have the proper background to be able to get much out of a film on the environment that was shown during the group session. *"Julie doesn't know as much about the different philosophies, so it's not going to be as meaningful to her as it is to me. With my background knowledge I can get more out of it."*

She noted that she was familiar with many of the quotes in the film. Kristen's comments indicate she assumed that Julie's limited curricular experience on the topic of environmental studies precluded her understanding of the movie. Kristen attempted to defend what she perceived Julie's naiveté on the subject to be. It was interesting to note

that although Kristen felt that Julie would not be able to respond critically to the movie, Julie was indeed able to respond in an intuitive manner.

Intuitive Knowledge

At several points in the data gathering, I noted that the data was of an intuitive nature. It was not book knowledge but knowledge that was intuited. It seemed to come from an intuition. Participants did not always seem aware of their strength in this area. This kind of knowledge is acquired at different times in people's lives and educators are not always assured that these experiences will happen when they do or that each person will interpret them in the same way.

Julie remarked at the outset of the research that she did not have much background knowledge on the topic of environmental education but that she was willing to learn. She said that she did hope to take a course in the future so that she could overcome this perceived deficiency. However, I quickly came to realize that although she had very little formal experience with environmental education throughout her schooling, she had a very strong sense of connection to nature and a healthy positive ecological identity that connected her deeply to the earth through a very strong sense of place.

Julie noted several times that when she was away from her island home she became very homesick. She was unaware of her connection to home until the first time that she was away from home. She was able to overcome the homesickness by simply going down to the shore and being able to see the water. As soon as Julie saw the water she no longer felt homesick. The water brought healing and a strong sense of connection to home.

After viewing the environmental movie, which was shown in a focus group session, Julie noted that the movie made her feel calm. She remarked that as soon as she saw the water, she was able to have a deep sense of peace and a sense of home. *“I saw the water and it kind of took me home so I liked that about it”* Julie said.

I had hoped that the movie would convey a sense of wonder and a mood of tranquility, and I felt pleased that the movie did have a positive impact for Julie. Julie’s viewing of the movie seemed to be at an intuitive level. She was able to capture an intuitive sense of the message the movie was trying to convey. She was not upset that she was not able to capture every quote as they moved quickly across the screen, but she was able to get an overall feeling of contentment from the film. She commented not surprisingly that the scenes of the water were what brought tranquility for her.

When Julie noted during the focus group session discussion about the movie, that one could make a different movie but it did not have to replace this one, I sensed that she had an intuitive understanding of the central purpose of the piece. Furthermore, I feel that Julie had a direct experience with nature from watching the movie. *“Even if there is one person that gets something out of it then let them watch it.”* Julie remarked when one of the other participants suggested remaking the movie.

Julie was not upset over the cognitive component. She might have missed some quotes but she was able to grasp a mood and enjoy the imagery of nature. This perceptive understanding allows Julie to relate to the world in a different way. Although Julie commented that she was not an environmentalist and that she has a lot to learn on the topic, she is, at an intuitive level, directly wired to her environment. Her roots reach deep

into the earth or should I say water, reinforcing connections so that no wind would ever steer her off course. Nature experiences seem to impact deeply on her mood.

Water is a direct conduit that is able to transport Julie to a different time and place. It has a transcendent quality for her. Julie has commented a number of times on how just seeing the water can make her feel close to home. This close connection to water speaks of her island heritage and of how deep the connection to homescape is. Her connections to the earth bond her to the waters that have surrounded her and were never out of reach at home. The waters of the harbour encircled her in her youth.

Julie's stories all relate to water, in contrast to Ethan's who are equally grounded to his earthly home. Even as I use the term grounded, I realize that Julie's experience of ecological identity differs from that of most land dwellers. It requires me to develop new metaphors to come to express the ebb and flow of her connections to place.

This connection to water is part of Julie's ecological identity and it is manifested at an intuitive level of knowing. *"I can look out my window and there's the water. I love it... to go to the beach on any kind of a day. I will never live anywhere where I can't see the water. I can go but I will never live in the city. Even here, wherever I got homesick, I just go and find the water, I feel a little bit better for a while."*

When Ethan talks about a book that has impacted his environmental views there was an intuitive knowledge about the flow of energy through living systems that becomes apparent, although Ethan has a difficult time expressing it in words and he seems to be grasping to convey the meaning of his words using body language to help give it its importance. *"The Celestine Prophecy is such a crazy book. He is down in the rain forest*

and sees... there is such a huge patch of jungle and he's talking about the energy force ... that we get from it ... what we don't see; we don't understand."

Ethan seemed to want to express an intuitive sense of how energy flows through eco-systems. I was very interested that he brought up this particular passage in a book that had also intrigued me at an intuitive level. I was disappointed that the conversation ended abruptly when the janitor came to the door and it seemed to disturb the mood of intimacy that was required to discuss the kind of intuitive knowledge that is not written or usually spoken but must be known in a different manner.

Embodied Ways of Knowing

At other times, knowledge of the environment was manifested in an embodied sense. Julie's words in response to a first hand nature experience speak of an embodied sense of wisdom. *"When we were by the water falls I could have just sat there. When we are outside we don't really care about the time. We all love to be outside"*. Embodied knowledge is about a kind of knowing that can be felt. Bruce's sense of place is indicative of an embodied knowledge and also shows a connection to landscape that he feels in the inner core of his being.

In one story, Bruce speaks of visiting Scotland and being taken to the fields of Culloden. Here Bruce was overcome with a spiritual connectedness to the land. He was able to feel the importance of this place. Bruce expressed the feeling of the place saying, *"It felt very powerful. All these powerful emotions, all these stirring emotions, yet you're just in a place."*

Bruce was overcome with bodily emotion and was able to feel an embodied sense of the very power of the place. It is interesting to note that Bruce also confessed a lack of

awareness on topics of ecology yet he had a profound sense of place and connection to the land. He was able to share his connection with others.

Family's Effect on Ecological Identity Formation in Early Years

Family influence has been shown by the participants to be an important factor in determining ecological identity. Family influences were identified as being important in the development of both positive and negative experiences of ecological identity. Four out of five participants link their beginning of a strong ecological identity with positive early family experiences of nature. John identified his disconnect with ecological interests to his family's attitudes towards the environment.

Communication of Joy and Wonder

Kristen's family spent many of her early vacations camping and touring nature museums. She attributes these early experiences as important role in the development of a very strong ecological identity that later moved her to actions to help save the environment. When Kristen speaks of current developments in her early neighborhood that have negatively impacted the public's access and enjoyment of the environment, she says. *"I'll have to get home to do something about that."*

Julie said her mom has passed on a deep sense of appreciation and spiritual nurturing that nature can provide. The hours that her mom has spent sitting quietly mediating at the water edge developed a sense of peace and tranquility in Julie through identification with nature.

A move, when Ethan was young, brought him under the sphere of influence of his great aunt and positively impacted his ecological identity. The area in which Ethan lived was remote. Ethan's great aunt had a deep sense of connectedness and reliance on the

natural world. She would often take Ethan with her into the forest. Together Ethan and his aunt journeyed, gardening, picking potato bugs, gathering berries and fruits for the winter. There was always time for thought and reflection at the wonder of it all, Ethan told.

Ethan said his aunt communicated a deep passion for the earth and a profoundly spiritual connection to it. The countless walks in the woods with his aunt and her nature commentary have helped to inculcate a deep connection to the earth in Ethan. He gained an appreciation of seasonal continuity through his aunt's insistence that the foods be gathered fresh from nature. As the earth's seasons changed so did the activities they enjoyed. Ethan's aunt preferred to live as directly from nature's bounty as possible, gardening, baking pies, and putting up food for the winter.

This helped to instill what Ethan described as *"a deeply spiritual connection to the world around him"*. Ethan continued talking about his aunt. *" 'Let's go for a hike.' she'd say. She'd take us through the woods, different names of trees, different kinds of berries, she grew in the same area and life was for her was a lot more simple. Her father would have taken her so in a way it was a lot of oral history. She taught me a big respect for the environment. Looking back now I can see where it all stemmed from. I look back and see a spiritual connection, a spiritual awareness; it was more than just a walk."*

Ethan said.

How do you know that she impacted your ecological identity? I asked. *"Through our relationship... She had such love for life. Everything about her involved nature, she had a garden, She was there with her bare hands, picking bugs where she lives, and she was out there taking pictures. Everything about her ... Picking apples to make pies... she*

had to pick her own apples, she could have gone into town she preferred to do it this way. She loved life.”

A Sense of Place Develops

During a focus group session, Ethan selected a reading by Farley Mowat just because the picture on the front of the book of a rocking chair by a curtained window. Ethan said this picture transported him to his aunt’s kitchen and to the pensive times they would sit by the wood stove and reflect on a day’s work outside. The rocking chair by the window was a human habitat that is idealized in Ethan’s mind as a kind of perfect niche.

The image was able to connect Ethan to another time and place and revealed that this sense of home and of habitat was never far from his mind. Ethan’s *sense of place* comforted him. It anchored him as surely as the waves on the ocean did for Julie. Ethan’s choice of book was impacted by his previous experience and a sense of comfort and security that this picture brought to him.

Another neighbor of Ethan’s wrote nature poems about the area. It seemed as if the beauty of the area itself spoke to its inhabitants and took them under its spell. Ethan also cited this book of poetry about his local area as being of transformative importance in the development of his ecological identity.

Bruce noted that early walks in the woods with his dad were of formative importance to him. *“It started with my dad. My father has always been someone who would go for a walk. As a kid he would drag me along. It wasn’t environmental it was down time for him. I came to appreciate the beauty around me. It was very much going out there and seeing the beauty. Exploring... going off to find new things was something*

that I was always very interested in. It was so fascinating. We'd see deer or fox or owls. When I got older I was able to go off by myself..."

Again, in a later conversation, Bruce reaffirms the pivotal role that his dad played in forming his connections to the natural world. *"It starts with my dad. He would drag my sisters along. It was a cultural thing. I would go off on these trails. It was exploring... a historical cultural kind of thing."* These experiences piqued an interest in nature that developed a love of exploration of the wild, which is now firmly rooted in Bruce's identity as a person. It is part of who he is and what he does.

He no longer needs to be invited on walks to get out in the wild but now encourages his friends to come along on challenging hikes and explorations that he knows they will enjoy. *"I remember as well I would drag friends along. Some friends... I would just ask certain people."* Other participants in the group commented that Bruce had taken them on many hikes into the wild during the time they had known him.

Bruce's eagerness in speaking about an author that described a camping experience showed his ability to reconnect with his inner self, through his recollections of the natural world. *"In terms of reconnecting ... actually; camping out in the stars ... the way he describes it is perfect."* A deep appreciation of the natural world is implicit in Bruce's ponderings.

Family Influence: Negative Impact

Family influence was also a major factor in the development of John's ecological identity. John said that his family recycled because, *"it was the law"*. They did not have any special interest in the environment. John mentioned that his grandfather walked in the woods and sometimes took him but rarely did they discuss the experience. John

commented that his grandfather was a quiet person. He walked because he had a heart attack and needed the exercise. John resisted my suggestion that the walks may have been driven by a love or appreciation of nature.

This nil passion, reinforced by his grandfather, the primary importance of family in developing values systems for ecological identity work. When John was later taught by an environmental activist, he did not form a strong bond such as another participant noted with this same teacher but on the contrary, it seems that his grandfather's passionless walking in the woods may have predisposed John to view the environmentalist as extremist and radical.

Family influence has had an important impact in developing John's ecological identity. *"My parents recycle now but if they didn't they get fines"* he said. John indicated that environmental education was not an interest of his so he will not focus on it as a teacher. When I asked, "If it isn't important to you, do you think that your students will perceive that?" John responded, *"I don't know how much I'll influence them, probably not at all. I'll go along with the recycling program."*

John did indicate a more positive experience in university. *"My biology teacher in university was more of an influence to me. His teaching was more about treating animals properly. I don't know why I liked him, it was the way he put it. He could see both sides of the issue. This came across in just the way he talked to us. Well, for instance he was a hunter. He understands population control. How you can prevent disease by culling the herd. He wasn't judgmental. That was just the way he came off to me. The environment is not that big of an issue to me. I don't worry that much about it."*

There are other passionate interests that will continue to impact his future teaching focuses, such as teaching children with learning differences. He plans to focus his energies on this field and did not see environmental education as being of much interest to him as a teacher at the time of the interview, although by the time the mentorship was over John had changed his views more than any other participant. This did not change the fact that it appeared from his statements that his family influences at an early age were more negative than positive in their view of environmental education.

Teachers as Mentors of Ecological Identity

After family influence, teachers formed the next most important relationship as mentors of ecological identity. Teachers were named by the four of five participants as having an important mentorship in the development of an ecological identity. It was not a role that participants identified for all teachers. On the contrary, three of five were able to name one teacher during their school years that had a strong impact on their ecological identity. Kristen did not name a teacher during her school years but was able to cite university professors who impacted her environmental views.

Communication of Joy and Wonder

Bruce had a very positive mentor in school. One of his teachers made a very positive impression on him. Bruce spoke affectionately of the teacher who designed outdoor experiences such as pond observations that allowed him to connect to the natural world. Bruce said these experiences were of formative importance in the construction of his ecological identity.

His teacher's positive advocacy on behalf of the environment set a positive tone of habitat care for Bruce. This investigation of the local pond habitat provided him with

an opportunity to identify with organisms from his local habitat. He mentioned that the organisms were returned to their habitat after the students had studied them. This aspect promoted a respect for the animals that they studied.

Ethan described activities that a favorite teacher planned for his class that brought him into direct experience of nature. Ethan explained how the teacher allowed them to construct their own ideas and feelings about the experience. Ethan preferred this kind of discovery learning to book learning. He described it as “*real learning*.” I asked about a teacher that he said had an impact on his ecological identity.

Ethan responded, “*Huge impact. I had him for biology. He was the one; he always took us outside. He had passion for it. He took it to another level. He actually made it interesting. He had us using compasses. Identifying different species. Another time he had a black light in a room. He used the light to achieve effect and draw our attention to different aspects of the specimens that he had laid out... just different things like that. He had a hands-on approach. Separate from the textbook. I don't think that textbooks make us think, you don't get near as much out of it.*”

Ethan enjoyed this course enough to later seek out this person in a postgraduate course. “*I also took a university course from this person, lots of activities in his university course. We did a lot of article reading. We discussed them in class. He took us for a field trip one night to a nearby beach...*” Ethan became quite animated when talking about this teacher and the stories and positive learning experiences came to mind very quickly.

Julie noted that she could not name a teacher who was of particular importance in the development of her ecological identity and only recalled instances where she might

have had to collect garbage or make a poster. Julie said that these were the only impacts from her school years.

The kind of activities Julie mentioned being involved in, such as garbage collection, seem to indicate that perhaps she just did not have a teacher who showed a strong deep interest and understanding of ecological studies and a sense of how to develop curriculum to further these objectives. Julie lives in a remote, pristine environment where perhaps these issues were not pressing.

Kristen, however, grew up in a suburban environment. She did not name a teacher who had a particular impact but her ecological identity was so strong she started a green club in high school, a club that folded after she left. Kristen added, *“I was pretty much an anomaly in high school. I was an extremist. I started harassing my school to get a recycling program going, an environmental club.”*

A Shared Mentor Exhibits Diametrically Opposed Results

Two of the participants have had a teacher in common. This teacher became an important mentor to one student and a role model for the future environmental attitudes, whereas for the other participant the same teacher was remembered as someone that had turned him off the environmental issues.

When an economic development project polarized John’s community, John’s family wanted to see the project come to the community. The teacher advocated against the project on environmental grounds. When the venture failed John blamed his activist teacher for failing to come up with a compromise. He felt that the inflexible approach of the environmentalist deprived his community of an important economic development tool. John indicated that years later the heart of this conflict is still very much alive in his

community. John said that his family members really were not environmentalists. His family's views precipitated the negative experience that he had had in school with the teacher.

John described the teacher as over zealous in her view on the environment. John said that the teacher had a negative impact on his environmental attitudes because of this. John's parents had advocated for the development project in his area that was thwarted in part by the environmental activism of this teacher and others. John said that the teacher's rigid adherence to environmental values turned him against her values.

One of the other participants in the study interestingly noted this same teacher as a very positive influence in their life, outlining the kinds of curriculum experiences such as spending a day at a pond near the school and identifying with some of the species that inhabited the pond as of great importance in the formation of ecological identity.

John's school memories evoked only the experience of being able to collect garbage on behalf of the environment. This has provided me with an interesting cross-section of data that shows that other factors are at play in determining how students perceive teachers in relationship to ecological identity. Perhaps threatened species could have been protected, John suggested, and the community would have had the opportunity to have a viable development that would have provided much needed jobs.

An opportunity that one may say was well planned and important may be viewed by another person as insignificant to the development of their ecological identity. These differences imply that that prior experience has an impact on the development of ecological identity, making early experiences of nature rate very high in the formation of ecological identity.

Many unanswered questions have surfaced for me regarding this dichotomy. Did this teacher perhaps skip the outdoor experiences the year that John was in her classroom? Could the type of experience that Bruce had invite him into a culture of learning and understanding or was John too predisposed by his family's background and negative attitudes about this environmental activist to connect personally or to identify with the person.

Do one's family and community background and experiences before entering the school setting set one up to either form a connect or a disconnect with specific school experiences? Can a family backdrop, where economic needs prevail, cause a person to experience school activities differently from other students, whose backgrounds have perhaps set them up to be more open to nature's story in different ways?

The Complexity of Assigning Causal Relationships

This says something about the complexity of assigning causal relationships. Diverse personal backgrounds can prepare individual's differently to receive the curriculum in the school setting. John's family had felt that this teacher carried her environmental concerns concerning an exotic species of insect to the limits in protesting against a development project in the area. John and his family felt that over-zealous environmentalists deprived the local community of a valuable tool for economic development. It outlines some of the difficulties that working on relevant local issues can create.

In the Absence of Teacher Mentors

Three of the five participants singled out a single teacher from their schooling who had positive impacts on their ecological identity. It is possible to go to a school

where there is no teacher who picks up this role of environmental advocate and therefore students may not have a teacher to identify with as a mentor of ecological identity.

Family and extended families may lay the groundwork for future experiences of ecological identity. In this research, the participants who noted they formed strong connections to nature as young children seemed to connect in a positive manner with others who did ecological identity work, when they were available in the school setting.

For example, a particular teacher was named a positive mentor of ecological identity by one participant and a negative influence by another. It seems that Bruce was predisposed to see the teacher as a positive mentor of ecological identity whereas John was not predisposed by prior experience to see the teacher in this positive light but viewed the teacher's influence as negative.

Ethan named a teacher in high school that was of particular importance to him because of the innovative constructivistic techniques. The teacher developed experiential educational opportunities for his students. Ethan later took a course at university from this same teacher. He anticipated more of the same kind of experiences this mentor had provided in the school setting, which were of a thought-provoking nature. This particular teacher continued to nourish Ethan's ecological identity, not just in his knowledge base but also in the manner in which he structured educational experiences for the students. Evidence of this mentor's influence is already apparent in the kind of activities that Ethan has planned and tried in his preservice teaching.

Participants in the study who had important role models in the early years went on to identify with this same kind of role model in their school years. Kristen, Bruce, and Ethan are examples of this. However John, whose family influences did not show the

strong interest in environmental issues, was not impacted in his school years in the same way.

Government's Role in Mentoring Ecological Identity

The government's role in mentoring the ecological identity of Canada has manifested itself in several ways throughout the data collected on this research. The data shows that government has had an influential mentorship role in constructing ecological identity of the participants in this research. The Canadian government's publicly funded programs in the areas of television, educational programming, and conservation laws were all cited by the participants as having impacted the formation of their ecological identity.

Public Discourse around Environmental Laws

Kristen spoke of how she was influenced by the conversations surrounding the government's reaction to various environmental crises in her teenage years. She spoke of how governments, at various levels, helped to build the participatory consciousness of a nation through the democratic process. This public discourse is the foundation of change in how we come to see ourselves as a nation. Government programs such as the national parks programs, advertising campaigns for parks and recycling, legislation and public television programming, and the publications of many different government departments were evidenced to have impacted the way that the participants have come to see themselves in relation to nature.

Ethan commented on how important he feels laws are in defining Canadian society and its underlying structure. He feels students need to come to see that they can have inputs into the formation of the laws in their society. "*Students come away knowing*

how to affect the environment and how it affects them. How to change attitudes and what it does on a much greater level, government policies etc... more along the lines of change. That's where all our change comes from, all our rules and laws, government policies." His beliefs about developing preservation areas are strongly supported by his attitude that the laws of the land can make these things possible for its citizenry.

A Sense of Trust in Public Programming

Bruce's skepticism with glitzy and exciting nature programs did not extend to vignettes done by Parks Canada, such as *Hinterlands Who's Who*. The sense of trust established through government-funded information programs is unparalleled and was cited by three participants.

Some of the curriculum ideas the participants suggested as possible lessons for future classes are rooted in past government-funded initiatives for students. Kristen linked a wetlands activity that she planned for students to a wetland package that was developed by the Canadian Wildlife Federation with funding from the national government. Although Kristen's lessons showed creative and original components, she did attribute the basis of her planning to the wetlands activity package that was generated through these government-funded initiatives.

The importance of wetlands to overall eco-systems and how the loss of wetlands impacts on habitat, floods, and the overall health of the planet are important concepts, which have been provided through this type of government-funded programming initiative. Kristen drew links to the package, which was researched and put together by the Canadian Wildlife Federation, as having had a formative influence on her current curriculum planning for her students.

Government Environmental Education Initiatives

Ethan's planned curriculum lesson, which helps children to come to understand the interconnectedness of all life, can also be found as part of a larger program, "Project Wild" originally funded with government sponsorship. The preservice teachers have not had many opportunities in a classroom setting to draw on classroom curriculum. The ideas that they used in planning ecological activities for their students have been influenced by the kinds of curriculum exposure that they have had in their schooling years.

The curriculum planning initiatives of these four preservice teachers speak to the importance of their past experience and exposure in shaping their future environmental teachings. This attests to the power of programming efforts that have been undertaken by the government to become part of the psyche of the nation and part of the toolkit teachers use to transfer cultural information to the next generation.

Formation of Participatory Consciousness

The various levels of governments have played a large role in shaping the participatory consciousness of the participants in this research through the kinds of programming developed, which relate to environmental education initiatives and ecological identity work. It is exciting to consider how past initiatives have infiltrated the consciousness of the nation. The latent power that exists to transform the future of the country through ecological identity work can only stagger the imagination.

Media's Role in the Formation of Ecological Identity

Three participants named television programming as impacting on their ecological identity. It was interesting to see how strongly participants treated the media as

a factor in establishing an ecological identity. Kristen, Ethan, and Bruce all commented on the *Who's Who Hinterland* commercials as having an impact on their ecological identity. Bruce mentioned how he had faith in these infomercials to bring him accurate information on native species. Bruce remembered watching Lorne Green's *New Wilderness*. Three participants, who also included David Suzuki as a mentor, viewed his program and cited it as an important influence on their ecological identity formation.

Kristen noted watching nature shows with her dad as a big influence in forming a strong ecological identity. Kristen attributed her motivation to form a green club and to undertake a recycling program at high school to watching television with her dad. "*Why did I start taking such an interest when I was in high school? I don't know, I was watching a lot of David Suzuki*" she remarked.

She spoke several times of the re-release of *Hinterlands Who's Who*, saying how she had loved these as a child and was thrilled to get an opportunity to see them again. When I questioned her again at length about the influence of her father, she again returned to the times that they sat and watched television as an older child underlining the value that she placed on these times together.

Other participants raised television programming as well. Bruce told his story about how he had become skeptical after seeing the making of a nature program in which lemmings had been forced to jump from a cliff. Kristen mentioned how prominently the environment was in the news when she was in her formative years.

Kristen commented that environmental issues do not seem to be at the fore of news broadcasts today, the way they had been when she was growing up. Kristen said oil spills and violations of environmental law seemed to capture the attention of the public

media in her formative years. *“The environment was a bigger issue in the news than it is now. The Exxon Valdez...listening to the news with my folks ... CBC was always on at my house”*

Media Mentors

Media figures were also named as important mentors in the formation of ecological identity. Three out of the five participants in the research named David Suzuki as an important mentor for their ecological identity. Participants in the study did not need to know the mentor personally in order to be influenced by them. *“Why did I start taking such an interest when I was in forming a green team high school? I don’t know I was watching a lot of David Suzuki.”* Media figures were named as important persons that contributed to the ecological identity of four of five participants.

When asked about mentors in an individual interview, Bruce commented *“A real life person ...obviously David Suzuki”* and then went on to speak of this media mentor. *“David Suzuki’s strong knowledge and love of the planet translates well in his work and teaching. Suzuki’s strong respect for the traditions of elders and his concern for the future health of the planet appeal to Canadians.”* Bruce calls David Suzuki, a *big influence. “David Suzuki has given me a strong global awareness.”*

Kristen has named David Suzuki as the most important person in her strongly earth based attitudes. *“It seems that might also be true for many Canadians. We identify strongly with David Suzuki. There is a way of thinking and a way of seeing our world that I attribute to him.”*

One of the focus group sessions looked at environmental writing and examined a number of books from that genre. Some books were chosen from nature writers who

write in a qualitative style, such as Thoreau, Mowat, and Horwood. Other titles were of a more quantitative style and took a more scientific approach to environmentalism. Kristen chose a quote from David Suzuki, which she suggested combined both the qualitative styles of nature writing with the more quantitative scientific approach to environmentalism.

Kristen said, “*I feel to really experience something, its better if you can share it.*” She said that David Suzuki’s book is qualitative in the sense that it uses biblical references and quotes Henry David Thoreau. Kristen also noted evidence of quantitative science approach in Suzuki’s book *The Scared Balance*. Suzuki includes hard statistical data on global warming balancing his science approach with wisdoms of elders and snippets of poetry.

Kristen affirmed the importance of David Suzuki in influencing the mass media. “This book *The Sacred Balance* is for the masses. Suzuki doesn’t want to make it too over your head or it’ll just pass you by and you won’t get any meaning out of it.” Three of the participants cited Suzuki on an individual interview sheet as an important mentor in this research confirming the important role as someone whose ecological views have mass appeal.

Early Experiences of Advocacy

Kristen’s early nature experiences allowed her to identify with the creatures of her neighborhood, and she became an advocate for their welfare at the early age of 4. It was noted that this advocacy for her local habitat presented itself at such an early age and is still readily evident as a part of who Kristen is today.

As she spoke about recent housing developments in her local habitat and a threatened loss of wild places, she remarked “*I will have to get home to do something about it.*” It seems that Kristen’s early sense of responsibility to speak for her local habitat later impacted her actions throughout high school. Her spirit of advocacy and action remain beacons of her ecological identity.

In speaking with Kristen about her early roots of advocacy, I noted that her mother encouraged Kristen’s advocacy by retelling the story. Kristen said on two occasions. “*Well that’s what my mom told me.*” This statement seems to indicate that Kristen’s mother encouraged her advocacy behavior. Is it possible that adults miss the opportunity to notice and encourage these early exploratory behaviors in children?

Is early advocacy present in all children? Does it just need to be noted and encouraged? Can society begin to praise children for attempts to see things from the perspective of other living things? Perhaps some families encourage political action more than others. Perhaps the very simple praise that she received for an action that may be common among young people was enough encouragement for Kristen to begin to see herself as a person who was able to act on behalf of others. This is certainly an interesting question, because I can see that these early behaviors are very much in evidence today. Kristen continues to take actions on behalf of the environment in her community and in her teaching.

School Experiences, Ecological Identity and Teaching

Programs that are used in schools can not only foster ecological identity but also mentor future teaching. Participants in the research had an opportunity to plan ecological identity lessons for their future students. I hoped this activity would shed some light on

the kind of educational experiences that the participants may have been introduced to in the past through educational programming. It also provided an idea of the manner in which they might attempt to integrate environmental lessons into curriculum programming for their future students.

Relating Past School Experiences to Future Teaching

Kristen says that students should have opportunities to *“be hands on and get dirty”* She takes an even stronger stance when she says, *“I have major issues when student’s don’t get outside. Environmental experience should be both interactive and fun. It’s hard for someone to appreciate anything unless you walk in someone shoes.”*

Ethan commented that his teacher-mentor put a lot of effort into providing the kinds of experiences that led to a deeper understanding of experiences of the wild and a more profound relationship to the natural world. He said that it was not book learning but that he was provided with experiences that helped him to learn by having the opportunity to think through things. It was an experiential constructivist approach.

Ethan felt that this was the way he learned best. He knew this teacher worked very hard to set up these learning experiences. When planning for future students, Ethan’s curriculum planning shows evidence of using experiential techniques to provide his students with opportunities to construct their own knowledge of the interconnectedness of everything.

Neither Julie, Kristen, nor John felt that the school system provided them with positive mentors. Julie and John mentioned activities such as garbage collection when asked questions about a program component linked to environmental studies. John said, *“In the little grades we’d go out and collect as much garbage as we could find, I don’t*

think that it helped us a lot.” When asked about school influences, Julie commented, *“Yeah, we collected garbage and cleaned the schoolyard.”* I asked Kristen to name some of the experiences she remembered from school, which had made an impact on her. *“I can’t think of anything, it was all pencil and paper. Art was hands-on.”* Kristen later enjoyed a course on environmental studies at university.

It seems that these kinds of activities without a development of a sense of wonder in the magnificence of the natural world can form shallow understandings. Students come to connect environmental studies with garbage collection without experiencing the magnificence and wonder that are implicit in the natural world.

If the love of nature is established first, caring for nature seems to follow quite naturally, as it did with Kristen, Bruce, and Ethan. Developing the kinds of deeper experiences that help students come to understand that these activities are the natural outputs of a person who identifies with the commons as being part of themselves.

Bruce seemed to be able to integrate environmental teachings into all areas of the curriculum. *“Literature ... you could do haiku’s... the emphasis is on the environment. You can explore nature by using haiku. You can integrate environmental attitudes into all parts of the curriculum. They were very much a part of the land. All the materials came from the land.”* Bruce seemed to understand that environmental teachings could be part of any lesson. He later reiterated, *“Again the idea of integrating into pure haiku, the emphasis is on the environment. You could use it to explore people’s attitudes of nature.”*

John said environmental education was not an area of particular focus or interest to him. In his interview I asked, *“If it isn’t important to you, do you think that your*

students will perceive that?” John responded, “ I don ’t know how much I ’ll influence them. Probably not at all. I ’ll go along with the recycling program.”

John’s attitude here shows that he doesn’t see any importance in teaching environmental education. John doesn’t feel that it’s his role to be an environmental teacher or that it has much to do with him as an effective teacher. To John it is just an issue of choice. John feels that it is his free will to pick and chose here. This may be perceived from his past background in education where only one teacher choose to make the environment an area of particular focus.

John’s attitudes later changed through the course of the research. He experienced the most positive growth in his ecological identity. It is interesting to consider whether his ecological identity was rejuvenated, reinforced or only just begun.

Children as Mentors of Ecological Identity

Children are sometimes able to mentor adults in the formation of ecological identity. John exhibited the greatest change in attitude of all the participants from the first interview to the last interview. This change came about through his involvement with Earth Day activities. He encouraged his students to partake and said that he could see how his students engaged with this mission of advocating on behalf of the animal, which they had chosen for the Council of the Animals Ceremony.

John said his students seemed to work with a deeper engagement than they had with some of the other activities that he tried with them. Even though time was restrictive, John noted that his students all were successful in identifying the habitat of their animal and in expressing the concerns of the animals that they had chosen to represent at the Council of the Animals.

John said that he felt touched when the students presented him with his spirit tree at the ceremony. John was determined to find a meaningful place to plant his tree. He had come to see the value in earth education and his ideas had changed in the course of his preservice and mentorship. It seemed that his head had found the links with his heart. His students, through their role-play as animals, were able to break through barriers and become mentors of their teacher's ecological identity.

It seems that these children in their earnest and simplistic understanding of the earth and its living inhabitants have been able to help John connect with the natural world. The students were able to rekindle primordial associations with the animal and plant world, helping John to see more clearly his connections to the earth around him. John was resistant to attempts by adults to bring about change in his attitudes towards the environment. John attributes his newly gained more positive insights about environmentalism to his students and their ability to help him see the natural world differently through their earth day ceremony.

Using Local Issues to Teach Ecological Identity

Kristen felt that by dealing with current issues she would be able to integrate environmental awareness into her every day curriculum. She cited the current issue of seismic testing. This issue is one that has a direct impact on the bioregion at the moment. Kristen thought that it was a good vehicle for uncovering the multiple perspectives that underlie many environmental themes. The destruction of fish habitat, jobs for the local economy and the issue of large corporations funneling money and resources away from the area are some of the prevalent issues Kristen thought could come to life with an issue that is close to home.

Kristen pointed out that it also helps students come to realize that the actions that they take in their corner of the world impact on larger global issue. *“This helps students to understand the interconnectedness of our world,”* she said. Local issues can help her students to comprehend what happens in their world and how it is perceived around the world in different spheres of influence.

“The oceans are all interactive.”” Kristen pointed out and what happens in one part of the ocean impacts on the whole ocean. *“If whales migrated away from the area of seismic testing because it interfered with their sonic communications systems then other areas of the oceans may have the habitat changed by the arrival of this species. That’s how a local issue then becomes a global issue. The considerations that are to be made are greater than just the local considerations of economy and jobs. The larger earth community has to be taken into consideration.”*

Kristen pointed out that local issues are a profound means of environmental engagement. She said that teachers tend to avoid the topic of destruction of the local forests in school. Rather than discussing the fact that the government subsidizes the spraying of hardwood trees for the benefit of foreign owned pulp companies in Nova Scotia, teachers prefer to have children discuss the destruction of the rain forest, convincing them that environment destruction is not really within our sphere of influence. Kristen adds, *“Taking a local issue makes it personal.”*

“Children,” Kristen remarked, *“need to see that their actions can lead to positive changes. They need to see that they do have transformative power and they can use it wisely to work with their community for the benefit of the earth community. Students*

need to feel that their actions can make a difference. Taking action on local issues shows responsibility to the local environment”

Kristen suggested that having an environmental fair, similar to a science fair and heritage fair, might generate interest. Also planning mini-conferences and inviting students from other schools can help to bring issues of the bioregion into the discussion and help students understand the interconnectedness of all living things.

Identification with Ever-increasing Circles of the Commons

In coming to understand the concept of the commons, we begin to see that what a person will do for themselves they will also do for an extended sense of self. As the individual comes to identify with habitats outside of their person, these shared areas become part of a common that may be shared by others as well. It is the boundaries of self that become extended in ever-widening spheres of influence in ecological identity work. Individuals who have an extended sense of the commons will act to protect that area which they identify with themselves.

Kristen’s comment in referring to a loss of public space that is happening a thousand miles away in her home community says it all. *“I must get home to do something about that.”* Kristen demonstrates an increased sense of commons. This neighborhood is like an extension of herself. As she would react to protect herself, she also reacts to protect her local neighborhood.

Evidence of Kristen’s increased circle of the commons first appeared at the age of four when Kristen asked her mother where all the animals would live when they began construction in a field near her home. Evidence of a growing circle of the commons is evident in much of what Kristen says through the data gathering process.

Recurring Themes in Ecological Identity Work

The themes of childhood places, damaged places and experience of the wild are themes, that Thomashow (1995) has noted reoccur in ecological identity work . I note that these themes did appear in the formative narratives of the participants in this research.

Childhood Places

The theme of childhood places came up with four of the five participants. Julie recalled just sitting by the ocean with her mom. She felt that this oneness with nature has a healing aspect for her. Julie felt that her mom would know of her connectedness to nature and the healing power it held for her.

Kristen spoke of the importance of early camping trips with her family and experiences with nature. She talked about how she played out in the field near her home. Her mother has recounted this story in recent years. Kristen identified with this habitat so much so that she was visibly upset on hearing that her special play spot was to be developed.

Ethan spoke of his move to Black's Mountain in his early childhood. This was undoubtedly a special place for him. His aunt took him on lots of walks and excursions and her connectedness to nature had a spiritual aspect attached to it. This early positive experience with nature seems to have colored some of his choices in later life. Ethan mentioned the walks that he would take with his aunt and mentioned how she would point out things in the forest.

I soon discovered however that Bruce had a profoundly unique sense of the importance of special places. Thomashow (1996) describes the bonding that motivates positive actions of many peoples from around the world to be driven by their memories

of a special childhood place. *“They have fond memories of a special childhood place, formed through their connections to the earth via some kind of emotional experience, the basis of their bonding with land or neighborhood”* (p. 9).

When I questioned Bruce about how he developed his interest in exploring special places he told me that his interest in nature began in childhood. His dad would bring him along on walks. These walks developed his interest in exploring place. As he grew older he became interested in exploring special places. Bruce noted that for him there was an historical cultural aspect to this exploration. He said that he was interested in finding out how things once were in a place. Bruce explored old foundations and deserted farms.

Bruce explained that his interest in special places stemmed from an interest in culture. In his youth Bruce collected stories from the old folks in his local area and went to visit places that had been of interest at one time or another in the past. I was quite surprised when taking the participant group to a little known cave in the local area to find that Bruce had not only been there before but he had been there on several occasions. This type of exploration of place was a unique interest of his and luckily one that he made efforts to share with his friends.

Bruce has a sense of place and an appreciation of landscape that seems deeply ingrained in a person so young. He seems to be deeply interested in the history and culture of the area in which he grew up and the landform from which he came. His connectedness to landscape and a deep spiritual sense of connection cannot be learned only felt. Perhaps it was his way of talking to the old folks in the community to get the oral history of the community that helped him to develop a deep sense of the uniqueness and history of his home. Bruce has a drive and a willingness to share his delight with

others. Past behaviors indicate that in the future he will continue to cultivate these kinds of experiences with his friends and students.

Bruce claims that environmental education is not a particular focus but his actions speak very differently. Bruce has a deeply ingrained ecological identity that will be shared with his students whether intentional or as incidental learnings. It was a longing to share that forced him to encourage his friends to undertake a hike in one of his favorite spots. The day was memorable for Bruce not because he was able to get to a favorite hiking spot but because he was able to introduce a friend to the experience and share it with someone.

A teacher who is willing to share her or his personal and private places with others, whether inside an institutional setting or outside, will do much to teach the kind of respect and appreciation that is needed for sacred places. Bruce also has sensitivity to the history of an area. He is able to read the special mysteries of past life that impact on him and share that experience with others.

Evidence of special places was apparent with Kristen, Julie, Bruce, and Ethan. John did not speak of a special place that was important to him. He did say at the end of the project that he would find a special place to plant the *spirit tree* that was presented to him by his students. He said that the tree meant a lot to him and he wanted to be sure to put it in a special spot.

Damaged Places

Damaged places is another theme that runs throughout much ecological identity work (Thomashow, 1999). Ethan, Kristen, Julie and Bruce all named instances of damaged places. These instances all have the theme that shows they are saddened by the

destruction of habitat that is part of what they consider to be the commons. It is part of the habitat that they have come to identify with. Instances of habitats that have become damaged are instances in which the participant feels that the damage has been done to oneself in some sense.

Ethan was anxious to discuss damaged places. He was upset by the abuse of national parks. He noted how people threw cigarette butts and wrappers even though they had come to the wilderness to see pristine sites. It was as if they did not make the obvious connection that if they despoiled the environment than it would not be there for them in the future.

This disgust, I think, led to Ethan's political belief that wilderness areas should be protected from the general public. Visitors should have to prove that their purposes are honorable. Not all should be issued permits to go into a wilderness area. An understanding of essential qualities and proof of intentions should be required to protect these places from a general public that does not act in a deserving manner.

Kristen can recall, as a very young child she came home crying when she realized that the vacant lot near her home was to be developed. It seemed that she had identified with the organisms that lived there. She cried and asked her mother where would they all go. This early activism seemed to underscore activism that reappeared later in her high school years in high school when she struggled to get a green club underway and encouraged her local high school to get started at recycling.

Julie felt that it was wrong that boats in her remote island home were discharging harmful effluents into the environment. This area was an area of concern to her. It is

interesting to note that Julie identified most directly with the water in her environment and it is also the water that she showed the most concern for.

Bruce spoke of a neighbor that owned a small business nearby. He told of puddles of oil and gas that polluted the local soils and also of refuse that was carelessly strewn about the site. It was upsetting for him even as a young child to witness this type of destruction of the local environment that he had become attached to. *“I was influenced in a back hand sort of way. Not really good influences, a neighbor who owns a trucking company. With empty oil drums, all this stuff. What an environmental scar. Oh my god the devastation! It made me think about globally the kinds of things that can happen.”*

Unlike the others, John told no such story of environmental destruction. His stories had more to do with the fact that his family was just uninterested in environmental topics and their motivation to recycle had more to do with their desire to comply with existing laws than it did with an earnest desire to see materials reused or returned to the earth in a way that was efficient and honored the natural processes of nature.

Experience of the Wild

All of the participants chose a walk in the woods or wilderness camping as their first and or second choice of an activity that helped them to feel connected to nature. A walk in the woods and wilderness camping are activities that directly connected the participant with nature itself. Choosing these activities is a choice that directly connects the participants with an experience of the wild and shows a love of this kind of experience within each of the participants.

Rather than choosing to be alone on a walk, Julie commented, *“ We are never really alone when we are in the woods. We have the feeling that we are not alone”*. The

participants showed a confidence in nature to provide them with the kind of experience that was be meaningful and enjoyable.

Bruce's personal adventures and excursions definitely speak about his love for the wild and untamed. When describing his best day ever he talks about sharing a favorite nature retreat with a friend. Bruce chose a trail that was not broken or marked. It was challenging but he felt that his friend would be able to do it. Bruce spoke about his love for kayaking the peaceful tranquil waters and the special significance being at one in nature had for him.

Ethan also spoke about experiences of the wild that he had with friends at a retreat who had similar interests. Bruce enjoyed this aspect of his job in which he was able to hike in unknown territory with people who were skilled and capable and loved similar kinds of adventure experiences.

Spiritual Experience of Nature

Two of the participants described their experience of nature as having a spiritual component. Ethan, in attempting to describe the relationship that his aunt had helped him to develop with nature, described it as a spiritual experience. Bruce also had the ability to describe experiences with a component that was very spiritual.

Ethan's affection for his aunt was evident in the way that he spoke about her. This gave an added dimension to the experiences that he described in which she was involved. Ethan said that his aunt had made friends with a Mi'kmaq elder in his mountain home area when she was young. Ethan felt that her spirituality may have been connected to the cultural views of this First Nations person, who had shared his perspectives on nature with his aunt.

Bruce told a story about a part in the book *The Celestine Prophecy* in which he was able to get a deeper sense of understanding of nature and the manner in which energy flows through eco-systems. It allowed Bruce to transcend normal species barriers and come to a much deeper understanding of how connected living things are to each other. It spoke of a communion of all beings and how energy flows through all living things in the universe.

It was unfortunate that the janitor arrived and came in the room quickly ending this intimate discussion at this interview. I will always wonder what Ethan may have added to explain his comments, which may have helped me to understand his spiritual understandings of nature as they relate to his ecological identity.

When we had the focus group session on qualitative and quantitative readings, Bruce chose a quote from Berry's *Dream of the Earth* that deal with public spirituality.

“Even while we locate the area of our discussion as that of public spirituality, I would like to indicate that any realistic discussion of our subject must take place in the context of the supreme historical event of our times: the discovery of a new origin story, the story of the universe as emergent evolutionary process over some fifteen million years, a story that now provides our sense of where we are in the context of universe development. Our new consciousness of the universe and the planet earth can be understood as a revelatory experience of universal significance for the human community and for every phase of human activity”(Berry, 1995 p.29).

I note that Berry has gone on to describe this public spirituality as the functional values and their means of attainment in an identifiable human community.

In discussing this quote, Bruce remarked to the focus group, “*I refer to the public spirituality, I feel that it is much more significant than the cultivated spirituality of specific groups.*” As he read his quote it was evident that he was searching to convey the unspeakable. It often is difficult to convey a spiritual understanding of nature because, as people, we have so much interference with the past parameters of traditional religions for how we have come to think of spiritual understandings.

“*Maybe I’m just reading what I want to it. I think he is saying that if there is more of a collective consciousness...*” Bruce trailed off finding it difficult to put into words understandings that are new to our postmodern moment and perhaps are not topics that we have become comfortable discussing within the realm of school experience. The rest of group was silent, murmuring approval as Bruce struggled to make his intangible ideas on spirituality and the public experience concrete.

Bruce’s other choice of quote at this focus group session was from Klein’s *No Logos*. Bruce explained to the group that when we purchase something we are not really buying the object as much as we are buying the image of the object. “*People buy a product for the image not the product*” Bruce challenged. In this way Bruce critiqued consumer culture and the devastating impact that it has had on the environment. In particular he cited free trade zones as areas where people live in abominable conditions. In many cases, he explained, it was not that we needed the object that was purchased but we were buying the image, that it signifies our spiritual impoverishment as a consumer culture.

Bruce’s strong sense of place seemed to also echo an almost spiritual component as he struggled to explain the feelings that he had in connection to the field of Culloden, a

place that was very special to him. *“It felt very powerful. All these powerful emotions...All these stirring emotions, yet you’re just in a place.”*

Bruce’s sentiments seem to indicate that as humans we need to take our place in the scheme of things and that we need to reexamine our place on this planet. We need to rethink our role. Bruce remarked, *“We are part of the ecology. There have been thousand of years when we were part of that. Thinking we can control the earth and take what we want, it’s perverse really but that’s the mentality.”* It seems that Kristen also has a sense that we are disconnected as a species and we need to rethink our place on this planet. *“We’ve disconnected ourselves from our whole reason for being here. We are just part of a whole”* added Kristen.

Healing and Restorative Properties of Nature

Nature seems to be able to bring healing to some of the participants. Several times during the data gathering process, participants noted how their mood could be altered by an experience of nature. The field of ecopsychology is beginning to examine how humans’ relationship with the natural world impacts on their mental state. Evidence of this impact was abundantly clear in several comments of the participants.

Julie told how the water restores her sense of calm each time she is near it. *“In the summer I’d get up in the morning before everyone else on go down on the wharf and just sit there, unbelievable ...”*

For Kristen water also has a healing power. *“If life is crazy, bring me outside. I really appreciate why I am doing things. It will bring me back. It makes me feel so much better. Mary has a fish tank now and a beautiful view of outside It gives me a*

peaceful feeling..” Kristen is very clear in her comments about the power that nature has to bring restoration of her soul and spirit.

In Chapter 5, I will reflect on the themes that recur in the participants’ narratives and further analyze how their narratives can help me to understand how ecological identity influences the manner in which a teacher approaches a student’s nature connections within the curriculum.

Chapter 5: An Analysis of Data

My Reflective Analysis Structured by the Participants' Narratives

Children's love of plants and animals is strong and very evident in their everyday living. Small events can create an atmosphere that builds an appreciation for nature experiences in the everyday. For example, at Whycomomagh Education Centre, the day the chicks hatched in the Grade One class, the news spread like wildfire throughout the school. Another day, two students came to school with an eel, which their dad had caught while diving and the whole class cheered as the eel was added to the aquarium that housed the species of the Bras D'Or. Our school librarian boiled lettuce nightly for an aquarium that she filled with pollywogs in the library. She came to the school even on the weekends to feed them, understanding that her efforts are so enjoyed by the students. Students transplanted their flowers and vegetables to school gardens after getting them started in the greenhouse windows in their classrooms. Another day a call was made to the local botanist to identify an unusual species of moth. The secretary even got into the action watering the parlor maple and other plants donated to the school. Students collected indigenous seeds to plant on a talus bank, which we were restoring.

These are everyday occurrences that students and teachers at Whycomomagh Education Centre are so frequently immersed in that we take them for granted. Sometimes as environmental educators, teachers think that students' experiences of nature occur on that hike we take once a year. But nature is ever present and it would probably be far more difficult to have a day in which the sounds and sights of the biosphere of this planet do not touch us.

Becoming present to the experience of nature has enriched my daily life through this research. Plants and animals bring joy to nearly everybody's lives, as does place. Our lives as humans are so intertwined with experiences of nature that we are in many ways oblivious to the importance of nature in our lives. We do not notice the ways that everyday experiences of nature enter our lives.

In this chapter, I reflect upon formative stimuli in ecological identity, transformative learning that contributes to ecological identity, the relative roles of quantitative versus qualitative approaches, transformative learning and how embodied wisdoms have informed my understanding.

Public Roles in the Formation of Ecological Identity

Media mentors have been shown to be of great importance in the development of a positive ecological identity. If the public media does play an active role in the development of people's ecological identity and our participatory consciousness then it goes without saying that the government of our country has a unique opportunity through the support of public television to encourage even further positive links to nature through the use of its programming opportunities.

Through the use of media, the participatory consciousness of the country can be raised and developed in a very positive manner. Programming can and is being used to help develop a bio-centric view of the planet. This role could be expanded in many ways. The media has been well used to promote consumer culture. This is a unique opportunity for media, through books, radio and television, to begin to usher in the Ecozoic Era. This role has already begun in some areas of media, but there is room for expansion as citizens' sense of where consumer culture is today regarding the planet becomes evident.

Ushering in the Kyoto Accord is certainly a good place to start. As citizens we could use more information about the Earth Summit and its tenets. This will help us to see the direction that we must travel and help to inspire young people as they take up new careers in architecture, engineering, design, and media. Shaping a new ecological society is something that happens daily. Being more informed about what Kyoto stands for and the kinds of projects that are being undertaken to meet our targets is a great place for the media to start. As young designers see what is being done, they will begin to modify and improve on what they see.

The discussion of the importance of nature programming in the formation of ecological identity has led me to believe that governments have a responsibility to provide excellent programming, which can serve to provide experiences that help individuals to identify with the natural world around them. It is a unique opportunity. It seems odd that, in the thousands of commercials that students watch, a couple of infomercials put together by Parks Canada and Environment Canada have made such an impression on the psyche that they were mentioned by two of the four participants in the study. Government funding for projects such as these can contribute positively to improve the knowledge and understanding of complex ecosystems and their interactions. Governments have a unique opportunity to allow its people access to the wonder and awe that surrounds them.

This evidence suggests that a celebration of the diversity of habitats and organisms can contribute to the development of a positive ecological awareness among the citizenry of the country. Government's role in the development of an ecological

identity has been successful in the past, which leads me to believe that this role could be strengthened and maintained in the future. It is exciting to think what the possibilities are.

Transformative Learning

Education can replicate the status quo in society or become a vehicle for continual change and transformation. Coming to know ourselves as an interconnected species will involve coming to know out interconnectedness. By focusing on the myriad of ways in which we are connected to the rest of the living world, we can come to understand our place in the communion of all things.

Transforming people's current vision will require a shift in the basic premise of their understanding of human's place in the world. Film is an interesting medium to reach persons at a cognitive, intuitive and embodied level of knowing our home, the earth. Media can bring to light both implicit and explicit knowledge. It can highlight people's cognitive ways of knowing as well as heighten embodied and intuitive ways of knowing.

New Media

New uses of the media can evolve to help mankind make the transformation into the Ecozoic Era. The media could be used to encourage more farmers to grow organic products. The media could encourage the best and brightest minds to help develop low impact alternatives. Canadians took pride for so long in the throw away habits of a consumer society, a pride that was encouraged by the media's corporate sponsorship. Now the media can help to reward reducing, reusing, and innovative environmental solutions with the appropriate cultural capital that will reinforce these actions.

Ethan named a local poet who wrote about Lohen's Mountain as an important influence in his life. Ethan was influenced in his identification with his bioregion by the

poetry of a neighbor. This is an unusual approach, but one that was very effective in helping Ethan identify with the geography of his local area. Canadians are beginning to see more integration of the arts with science. It is a reintegration of the human spirit from a more compartmentalized approach of the recent past.

My attempt to use the medium of film to put across ideas with a transformative focus was successful in connecting with some participants but not successful with others. Interestingly, it was Julie, who professed to have the least expertise and training in the field of environmentalism, who got the most from this film. On thinking this over, I came to the conclusion that it is Julie's embodied connection and identification with her home habitat that provides her with a deep connection to the earth. Water seems to be the single unifying aspect and connector for this island dweller. Her firm sense of ecological identity dictates to her that she can never live removed from the water.

To put Julie near the water is pretty much to plug her into her deep sense of self. Water is a conduit to her spirit to her soul. Such a strong sense of ecological identity emerged quickly, even though Julie professed that she knew little about the environment. Julie perhaps had fewer expectations in seeing the film and took from it what she wanted at an intuitive level and did not worry about the rest. Julie gained confidence in becoming cognitively aware of her deep embodied connections to the natural world. Coming to know and understand one's connections brings about a sense of well-being and belonging which is lacking in the postmodern world.

Sometimes a public media campaign can have slow results as, with the Participaction Campaign to encourage Canadians to become more active. The success was not overnight, but with continued efforts Canadians finally got the message. It was

time to get active. If people can now be encouraged to try sports and recreational activities that have less impact on the environment but get them out in nature in non-obtrusive ways, the gain will be twofold. Perhaps people will choose cross-country skiing over snow-mobiling or sailing over four wheeling. They will save on fossil fuels, get more exercise while protecting the environment and other species all at the same time.

At the beginning of the Iraq war television brought Canadians images of millions of people all around the world protesting the war. These images could not help but to give an overall impression that ordinary folk all around the world are opposed to war as a solution to conflicts. War wreaks extreme environmental waste and devastation. The bombing of hundreds of oil wells following Desert Storm made the smokestacks of industry seem insignificant in contrast.

“ The human right to peace is about the fundamental shift that is occurring in not only the way we see the world and our interactions with other individuals and nations, but in how we think about and relate to the world around us. War is no longer considered a natural response to threats to security. (Roche, 2003)

War is not seen as an environmentally appropriate solution to any problem either. War and the production of weapons in all countries should be stopped. Although this sounds impossible, it could possibly be the sanest decision that the human race will ever make and also the most environmentally friendly. New uses of media can highlight the causes of thousands of people who work in the dark, so to speak, for environmental causes around the world. This can help to create the participatory consciousness that is so necessary for change. Opportunities to encourage positive ecological identity will promote biophilia and a love of the planet.

Mindfulness and Reflection in Understanding Ecological Identity

This research has led me to come to view environmental educational experiences in a different light. Through the process of the research I have become more reflective about my own experiences of nature at an early age, throughout childhood and as an adult. I have come to recognize instances of special places in childhood and the importance that they have had in my own narrative.

Some of the stories of early childhood that I have written in chapter 1 have begun to take on a new significance. I have come to understand the importance of my own early experiences and to now see how they were also experiences that connected me very solidly to the natural world. The research has helped me realize how these experiences, which have shaped my life in very profound ways, were also very related to my ecological identity.

I can now understand other experiences in my life in the light of my ecological identity. My husband commented on our first date that he wanted to live on a farm in the country. I have always known that this comment was of pivotal importance in our relationship, but even now as I sort through memories of my early childhood it becomes clear that he struck a chord with my ecological being. Coming to understand that ecological identity is part of who we are and how we interrelate with the rest of the planet is basic is reconnecting our species with the rest of the planet. Coming to know ourselves in relation to the rest of the planet will structurally change the building block upon which civilization is founded and bring about the radical changes that will reconnect our species with the rest of the planet in a meaningful way.

Qualitative versus Quantitative Approaches to Environmentalism

For a long time environmental educators have focused on using mostly quantitative data to teach environmentalism. They monitored and measured to find the problem and then they reported on it. Recently, the value of an arts based approach to environmental education is gaining more attention, and more qualitative approaches are being used to build links with nature. This may help some students to connect with a love of nature and may address the more spiritual aspects that have been discussed.

Participant's Perception of their qualitative versus Quantitative Influences

Kristen noted that her selection from David Suzuki was a mix of arts and quantitative writing styles. Different readers may prefer different styles of writing but Suzuki's (1999) book, *The Sacred Balance*, seems to have something to reach everyone. It has mass appeal. Kristen noted that David Suzuki included facts from scientific studies but also used quotes from wisdom traditions, including the bible, to make his points and bring a more spiritual quality to his work.

I noted that John who professed no interest in environmental studies was able to connect with a book written by Farley Mowat. "*This is the kind of thing I like.*" he said. "*This appeals to me.*" It would seem to confirm that qualitative nature writing may help to provide inroads to help reach learners who, for various reasons, may have turned away from the traditional kinds of books written on current environmental issues, which may espouse a doom and gloom mentality and not attract new converts to the fold.

John showed a real and instant connection to this type of writing and it may seem to point to the idea of using nature writing to expand the circles of identification with various habitats. Through books people can come to identify with habitats and niche that occur all over the world. John's willingness to borrow the book was a first sign that

qualitative materials might be the thing that could link him to nature. It could be an indication that this type of nature writing could also be used to interest other students who are apathetic about environmentalism to taking an interest in their ecological identity.

Ethan's point of view on quantitative versus qualitative writing differs. Ethan understands the purpose of using science in helping to tell students about environmental issues. *"I think that kids understand statistics better. I think that it hits harder."* Kristen agrees, *"You can't leave the science behind."* Both paradigms have ways of expressing environmental concerns and different participants chose quotes from both quantitative and qualitative means of expression.

Suzuki, himself a science writer, has come to understand the importance of qualitative writing as a way of getting to know the world around us. Suzuki shows that he has also come to comprehend the dangers of science in its manner of naming the world:

"Language weaves worlds of being and meaning but this is a double edged sword. Calling a forest "timber, fish, resources" the wilderness "raw material" licenses the treatment of them accordingly. Definition identifies, specifies and limits a thing, describes what it is and what it is not: it is the tool of our great classifying brain. Poetry, in contrast, is a tool of synthesis, of narrative, it struggles with boundaries in an effort to mean more, to include more, to find the universal in the particular" (p. 201)

Suzuki's quote can help educators to understand how the manner in which different cultures name the world can go far to quantify their worldview.

Integrating Ecological Identity into the School Curriculum

Students who were exposed to the complex ecological developmental activities showed a propensity to want to develop these links in integrated lessons for their students. Bruce spoke about how he could integrate lessons in writing haiku poetry with environmental objectives. Kristen was able to plan wetland activities that would help students construct their own understandings of the importance of wetlands and why they are important. Ethan was able to demonstrate how to help students develop an understanding the interconnectedness of everything.

Students who were not exposed to integrated environmental activities were not as likely to demonstrate how to integrate activities for future students. This finding reinforces the idea that mentors must pass on cultural information of ecological identity or it will be lost to the next generation. This attitude was evident with John, who felt that his only experience with environmental education was when he was asked to pick up garbage in the schoolyard once a year. John indicated that he was not interested in teaching environmental education. It was not his thing.

This finding is mirrored in Julie's experience with earth education in her schooling. Her experience in school with ecological education was narrow and did not provide her with rich understandings to draw from when planning a lesson for her future students. This is not to say however that the strong ecological identity that she developed through family experience would not come across to her students and enrich their lives. Julie's intuitive understandings will enrich the lives of all whom she meets.

As part of an education system, educators must do more to ensure that attitudes towards the environment are integrated into the core curriculum so that they do not become marginalized in this way. It is of wonder that educators can include so much in a

curriculum but do not do a better job of developing a relationship with the very earth community that sustains people's lives. For example, the water cycle is covered in depth, but this is done in a mechanistic way so that it is not really connected to understanding the larger life community.

Expanding One's Personal Boundaries

When individual's are born their world is small and they are at the centre of their world. As they grow and develop they come to identify themselves with family. Family often introduces them to nature, as my sister did taking me on that amazing walk through the woods. She also took me on a second walk through a graveyard. We guessed that this was a voyage to heaven because it was such a lush verdant carpet of green with large overhanging canopies.

As individuals grow they begin to identify with their local habitat. Their identity is in ever increasing circles of the commons. Kristen certainly identified with the field and the animals near her home. Her mom recalled her early efforts on behalf of the animals who lived there when development threatened this area. Kristen's concerns at age 4 were for the animals who lived in this field, because she had identified with the field as a part of her commons and a part of who she was.

Ethan spoke lovingly of the area that he became attached to, Lohen Mountain. To hear Ethan speak of this place makes one yearn to want to visit it with the certain knowledge that it is indeed a unique place worthy of his special interest and affection. Ethan's area of attachment or his circle of identification grew as he grew older to encompass Canada's Park system.

His concern for parks and for the idea of wilderness itself surprised me. I was surprised by the fact that he wanted people to have to earn the privilege of visiting designated wilderness areas. He felt that not everyone is worthy of visiting wilderness areas and that a person should prove that they are capable of being a responsible visitor. Again since Ethan has identified with the wilderness as part of himself he wanted a way to insure it does not become a damaged place.

In a similar pattern Bruce became attached to the area near his home and later expanded his attachment to special places as far away as Scotland. Again I can see that his circles of identification have increased throughout his life in a pattern that took him from identification with the local habitat to an understating and identification with places around the globe.

Bruce chose a quote from Naomi Klein in his focus group session on qualitative versus quantitative writing styles. Naomi Klein's piece dealt with globalization and multinational corporations. Bruce spoke about consumer lifestyles and how the need for a product is generated. *"It not so much the product as it is the spin about the product."* It is not always that we, as an individual, need a product, Bruce explained, but that the spin is created to make us feel that we do need it. Bruce also talked about public spirituality and how it is more important than the spirituality of cultural groups.

One's personal boundaries have to be expanded to include what society at large declares is worthy of our concern. The participatory consciousness of the world is moving towards an understanding that the health of the planet is vital to the survival of all living things on the planet. For too long human interests have been brought to the fore to

the detriment of the health of the planet. We must experience a paradigm shift that brings the needs of the human into a balance with the survival needs of the rest of the biosphere.

Embodied Wisdom Informs My Understandings

Bruce's story of the fields of Culloden in Scotland prompted me to recall an instance when I too had become totally overwhelmed by a special place. The experience was so powerful that it was a shock to my whole bodily system. My body's reaction to a special place had been a surprise and embarrassment to me as well.

The experience had occurred on a visit to a childhood place, which had since become a public park and recreation site. Very well groomed and well cared for, there was evidence that efforts had been taken to maintain this special place, which had probably been the favorite childhood spot of many and hence been spared from development because of this. It was when I reached the "old oak tree" that we as children in our neighborhood had grown attached to, that I was completely overcome with emotion.

It seemed that once I was in the canopy of the tree I was under its spell. Its powerful aura could be felt. This was the tree that had called out to us as children and encouraged us to drop what we were doing and make the substantial hike to visit it. That we would make the pilgrimage to visit this tree was usually quickly agreed upon even though it was a significant hike to get there. We seemed unable to ignore its call in the same way that many Maritimers are unable to deafen the call of the ocean.

This seems to be an embodied knowledge; a way of knowing that defies rational explanation. Bruce has responded to the calling to explore remote places since a very young age. It was not a mainstream activity in which many young people were involved.

Julie insistence that she will never live far from the ocean is something that she knows about herself at a very deep embodied level, just as I know that my connectedness to that “old oak tree” was also at a deep level. I reflected on how this tree seemed to call us to visit overcoming substantial efforts as a group of children to make the pilgrimage to visit it. In this section I reflect on how Teachers can validate all paths to an ecological identity and to modes of knowing that include the spiritual.

Validating all Paths to Ecological Identity

Participants expressed their connections to the natural world around them in very different ways. Participants were able to make connections to nature through cognitive, intuitive and embodied ways of knowing. All of these ways of knowing showed the participant’s understanding and connection to earth processes and impacted on the participant’s ecological identity.

When I consider the different modes of knowing that make up one’s ecological identity, I conclude that teachers should allow students the kinds of experiential opportunities that will nourish the different modes of knowing. As well families, schools, administrators, media and governments should consider these modes of knowing when they are involved with ecological identity work. Providing experiences that can nourish all these ways of knowing will strengthen people’s ecological identity. The disconnect that has developed between the human and the natural world will be changed through ecological identity work at all levels of one’s being and all levels of one’s knowing.

Teachers teach the water cycle in school.

“Another path to the same knowledge lies in the direct experience of nature. By watching the sky, observing the land, following the water courses and noticing

how living things depend on water, one can derive a very sophisticated intuitive understanding of the relationship between water and life” (Thomashow, 1995 p. 20)

Some people arrive at the notions of interconnectedness from a cognitive model, in which they study to understand the basic biogeochemical cycles; others come to intuit the same interconnectedness in purely experiential ways.

Nourishing only cognitive experience will not make up the deficit that exists. In order to connect deeply with the natural world learning experiences must be structured so that cognitive, intuitive, and embodied ways of knowing are nurtured. The research indicates that people know what people have lived; it may be difficult for persons that have not had learning experiences of a cognitive, intuitive or embodied nature to provide them for their students without explicit instruction in how to do so.

One warm summer evening as I lay in bed, reading about environmental issues, my husband convinced me to get up. He rowed me to the centre of the lake and asked me not to speak. I looked around and noticed that the stars formed a complete canopy brilliantly set in a black velvet sky fringed with twinklings of the northern lights at the horizons. Before rowing me back to shore he noted, “*You won’t find this in any book.*” It is with this wisdom that I come to realize that one’s earthly experience is diverse and there are many paths to ecological identity. All valid, like the sections of the orange that are distinctly separate and yet all taking their place to form the whole. Individuals can learn from each other and from the natural world, and teachers need to be open to different kinds of learning in order for this to occur.

Modes of Knowing

I think Julie affirms Thomashow's (1995) belief that there are different ways of knowing and for some people knowledge of nature may be intuitive, as it was with Julie. Julie knows that she will never live far from the water. This knowledge has become a deep part of her identity. Julie has an intuitive knowledge about herself in which she is able to perceive this knowledge and express it. Asking Julie to live away from the water would be like asking me to live on the moon. The landscape she grew up with, in which she was able to see water on all sides, has become very much a part of her identity and who she is as a person.

Kristen's cognitive knowledge in the area of ecological identity was strongly evident. She has read widely on the topic, attends to newscasts and policy changes that are of an environmental nature, and expresses plans to continue to follow these cognitive activities in the future. Her ecological identity is manifested powerfully in this manner, this is not to say that she does not have intuitive or embodied understandings but that she has expressed the cognitive component of her ecological identity fervently in the current research.

Bruce's sense of embodied knowledge became apparent through his unique ability to express it. I can recall instances when I have heard another person put into words a feeling that I have had but that I was unable to express. Embodied knowledge can be difficult to measure. Sometimes when I hear someone else put this kind of understanding into words, my whole body agrees and I think, "Yes, I always knew that!" The words that one uses to express it may make it unrecognizable to one person while producing an "aha moment" in another. *"I feel connected to the earth when I'm walking along the shore. I*

love water. I am thinking about being out in the kayak. You're in a calm space. The water is soothing, you're just meditating."

The spiritual aspect of ecological identity can be embodied. It can be difficult for one to express and yet a deeply engrained part of one's being. Bruce's words express his mood and his actions, yet there is a sense that there is something more that is embodied and inexpressible.

A Kind of Spiritual Knowledge

"Spirituality refers to the deeper resources of the human spirit and is involved the non-physical, immaterial dimensions of our being; the energies essences and part of us that existed before and will exist after the disintegration of the body" (O Sullivan, 1999 p.260)

Spirituality is one's inner world of love, knowledge and creativity. Spirituality relates to ecological identity as one widens his/her spheres of affection to include increasingly larger circles of the biosphere. With one's love and knowledge of the natural world come the spiritual component; without it we have mere facts without feelings. Without feeling one will not get the political action that is so necessary for change to occur.

Ethan mentioned that his aunt developed "a spiritual aspect" in her connection to nature. She transferred her deep love of nature through the walks and outings in which she included Ethan and his siblings. Ethan said that she would point out features of the local landscape. Ethan felt that she was seasonally tuned in to nature cycles. She would plant seeds, gather up bugs by hand, or harvest apples for pies in response to nature's

clock. She passed on this sense of being tuned in to nature. Her passion for nature was based on love, which displayed a creative aspect.

Ethan's deep love of nature displays openness to a kind of deep spirituality. Ethan seems to comprehend at a spiritual level how energy moves through complex systems. Ethan also understands at a deeper level how he is a part of this flow of energy. This level of understanding can help humans to transcend species boundaries to see how they are part of a communion of the whole. This kind of spirituality can help Ethan's students to understand the importance of forming connections with nature. *"We've disconnected ourselves from our whole reason for being here. We are just part of a whole"* Kristen commented.

Ethan's yearning for intimate experiences with nature will guide his relationships with his students. Ethan can mentor a new generation in a way that his aunt passing this profound relationship with the natural world to a new generation mentored him. These traditional wisdoms need to be cultivated and nurtured.

Kristen seems to be well aware of a larger cosmological purpose. Her comments show that her views are progressive and embrace an Ecozoic Era.

"Most people don't view themselves as part of nature and animals but above and beyond it. I got out of pure applied sciences because I didn't like that view. I didn't feel that I had all the answers. We've disconnected ourselves from our whole reason for being here. We are just part of a whole."

A sense of wonder with the universe is what needs to be cultivated in children. Today there is entrancement with technology, but perhaps people are losing that sense of cosmological wonder and awe that is spiritual in its nature. *"We are in need to a*

spirituality whose scope and magnitude will open us the wonder and joy of the universe” (O’Sullivan, 1999 p. 264). Widening our circles of identity can help us to develop empathy for the creatures around us. If we come to see other living things as part of ourselves, then we will have greater empathy for them. Ethan, in talking about a book that has impacted on his ecological identity, discussed the *Celestine Prophecy*. Ethan seemed to have difficulty putting into words exactly what he was thinking and feeling. *“The Celestine Prophecy is such a crazy book. He is down in the rain forest and sees there’s ... such a huge patch of jungle ... he’s talking about the energy force... that we get from it ...what we don’t see and that we don’t understand.”*

I had read the same book and strikingly, I had also been very taken with the same passage. I too had felt that it had aspects of a world interpretation that were of value and consideration in both a scientific and spiritual discourse. When he put his head down and said, *“It’s such a crazy book ...”* It intrigued me that Ethan had the same sense of almost embarrassment at enjoying the book.

I particularly identified with the moment in the book that he referred to. It was a scene in the rainforest. It was the implication that there is somehow more than we see. That there is energy force that flows and courses through the universe and of course flows through us. This flow of energy unites us as living beings on this planet in a way that nothing else does. It is the bond that ties us together with the rest of the living world and yet it is never discussed in this manner.

I think this passage refers to the “communion of subjects” that O’Sullivan (1999) refers to. The sense that humans are truly one with the myriad body of living organisms. This sense of unity is what I think Ethan referred to. I feel that it was somehow a

transformative moment of enlightenment for him. This passage allowed Ethan to see the material world and energy force fields as all part of the great transformation of matter and energy in the universe. There is an embodied knowledge here that we do not always have the words to express. It is not something that is discussed in everyday discourse. This type of knowledge is part of a great spiritual knowing and must be felt more than learned.

Some people have disliked this particular book because of this aspect. Perhaps they think it leaves the realm of the everyday and moves beyond a point into an area that makes them uncomfortable. Ethan seemed to have a sense of the discomfort, not with the ideas themselves, I believe, but in how they would be received by me. There is an element of risk when one somehow ventures from the widely accepted cognitive realm of knowing into an intuitive or embodied way of knowing. I was pleased that he had chosen to confide this personal moment of awareness and at the same time know that he was leavening it open to my interpretation, which has its own perils.

From Ideas to Action

Kristen has shown how she can use local issues to help students come to see the interconnectedness of all living things. Chaos theory helps to show how even the smallest actions have impacts and are felt, perhaps even half the way around the world.

Taking children to present briefs to the Nova Scotia Environmental Review Panel on Environmental Law helps them to understand that there is a connection to be made between their beliefs and their actions. An action by a child, as simple as drawing a picture of a deer and a rabbit standing outside a chain link fence, can help to show how bulk water exports can privilege some while marginalizing others and a more bio-centric view of the world is needed to prevent these situations from becoming common place. If

corporations have more power than sovereign nations through free trade agreements, where does this leave the animal population of the world?

People must be willing to abandon the rugged individualism that was forged in a pioneer spirit. They must come to see the connections between themselves and other community members, seeing such connections may help, to establish the trust that is needed to become comfortable with sharing their connections with place. I think a beginning is in sharing the special places that meant a lot to us as children. We can share the sense of loss that we feel at the disappearance of these places, the sense of loss that tormented Kristen as a young child. Kristen's sense of empathy for the other organisms that have lost their homes can also become part of a dialogue that can include other-than-human perspectives.

Kristen's strong ecological identity has compelled her to take action. In high school her beliefs translated to action in her efforts to form an environmental club and get a recycling program going in her local high school. Most importantly is her willingness to share her strong cognitive understandings of the interconnectedness of all things with others. Kristen has a clear understanding of her feelings and what is motivating them. She does not shy away from the moral and ethical responsibility. She said "*People must be willing to say what they think publicly.*"

Making the Connections

This research has shown the ecological identity is formed through direct experiences with nature, and there is no replacement for nature as the primary teacher and mentor in this regard. Nature speaks to individuals in its many languages when they listen and the participants prioritized opportunities to be immersed in nature such as taking a

walk in the woods by yourself, strolling on a beach or wilderness camping as the best ways to commune with nature.

Several other influences were also noted as having important impacts on ecological identity. Humans are mentored in their relationship with nature by significant others in their lives. Our families help to form the first and lasting interpretation of nature and its importance in our lives. The participants in this research identified teachers as having both positive and negative impacts in the development of their ecological self.

A teacher who helped to stop a community development project that a participant's family promoted was seen as having a negative impact on his ecological identity. The same teacher had an extremely positive impact on another participant who was predisposed by prior experience to be open to nature experiences. Shallow educational experiences that linked environmentalism quite simply with litter collection and neglected to develop the ecological identity of students through connections with the awe and wonder of the universe failed to have the participants name teachers as important mentors. They also gave these students little idea about how to integrate environmental teachings into the curriculum when they became teachers.

The development of a strong positive ecological identity in the early years underlined a later willingness of the participants to get involved with the planning of integrated environmental activities with their future students. Ecological identity intersects with the political identity to produce citizens who are willing to take action on behalf of the environment. This research has underlined the importance of the development of ecological identity as the precursor to responsible citizenship and action.

Thomashow (1995) reports that values are considered as personal in our society.

However an effective forum for public life can only occur if people develop a discourse that includes shared values and seeks common ground.

Schools can help to develop a discourse that can shape shared values of citizenry. Schools can help to provide opportunities to connect students with their ecological selves. It is through a consideration of one's larger cosmological purpose that people can come to know themselves and their place in the universe. Humans must come to consider the larger purposes of being. This has to be part of the discourse. Schools must not shy away from these larger cosmological questions that were once linked with religion. Without a return to secular, we must ask ourselves where we are going as educators and how we plan to get there.

When I reflect on the enlightened state of these young preservice teachers, I have to consider that understandings that have taken me two decades to reach are already in place for them at the very beginning of their careers. I had thought that coming to these understandings would perhaps be part of a developmental process that would take time. It therefore seems more likely that their understandings are a part of a postmodern cosmological awareness of our present discourse.

Bruce spoke of the importance of developing a collective conscious in regards to the present state of the planet. Environmental education in the school system is at a shallow level. Environmental concerns are only addressed as to sustainability issues in providing for human concerns. Bruce's comments speak for themselves in that they reveal the complexity of his understanding of his ecological self.

“The idea that as human were is part of a closed ecosystem. We are all part of this broad spectrum. We are apart of the environment. What we do has a direct effect. If you throw something in the garbage, it doesn’t just go away, it goes some place. It’s all connected. Getting the world in which we live. To realize that we are driving animals into extinction. The idea that we are all part of this broad spectrum.” At a later time he reiterates. *“We are part of the ecology. There have been thousand of years when we were part of that. Thinking we can control the earth and take what we wan;, it’s perverse really but that’s the mentality.”*

Participatory Consciousness

A holistic view of the natural world and my connection to it are ideas that took me a lifetime to form. Although I certainly was very connected to nature as a young person, I was part of the discoursed of the times, which included a “back to the land” movement. I had also been impacted by studying Tolstoy and Dostoevsky, both of whom advocated a reconnection with nature in their times. However my current ideas on ecological identity have been impacted by more recent studies. It seems that these current ideas are deeply present in three of these young people in ways that they were not in my youth. It was surprising for me to meet these young people and to learn how profound their understandings of the interconnectedness of all living things were.

This finding implies that perhaps I must consider that I am merely a product of my times. Understandings of the world and one’s place in it are changing. These changes are part of a dialogue that we are able to participate in as active citizens. The views of these students are more in order with my current thinking. And so it seems that these

youth are more a phenomenon of the postmodern moment in time than they are of an age difference that exists between us.

Although some of the ideas seem new there are also wisdoms, which have been alive in wisdom traditions for thousands of years. There exist no doubt, other wisdoms and sensitivities to nature, which have been lost to those of modern area. It is amazing to think that almost all drugs, even synthetic ones, are modeled on plant molecules. This is indeed a very close relationship with the plant world. Plants give us our very life and yet we sometimes lose the sense of gratitude of former generations who were perhaps more in tune with their deep connection and reliance on nature.

Postmodern understandings do not, as a rule, occur in modern times. People have never been at this moment in history before. As educators, this moment is ours to seize. It is our role to create the dialogue that will move us into the new millennium. Let us not falter with a show of bravado in the accomplishments of our own species but let us rethink our role on this planet.

“Environmental education must recover, recognize, reflect and utilize indigenous history and local cultures as well as promote cultural linguistic and ecological diversity.” (O Sullivan, 1999 p. 254). O’Sullivan implies that, as educators, we must acknowledge the historical perspective of native peoples and encourage bilingual education. Bilingual education promotes the absorption of diverse cultural views.

Many cultures have worked out balanced ways of living with nature that are peculiar to their own geographic areas. Many of these cultural adaptations are indigent to particular habitats. When people lose languages, they also lose the cultural identity that is embedded in them. By preserving languages we, as educators, can learn the wisdom

traditions that were evolved by people who lived for thousands of years in a particular region. We can learn about the unique relationship to the natural world, which that culture had developed. This relationship has grown out of the soil of the region.

Environmental education is not neutral but value based (O'Sullivan, 1999) for this reason schools must take on the larger issues of in whose best interest they are acting.

“The wisdom of all our current educational ventures in the twentieth century serves the needs of our present dysfunctional industrial system” (O'Sullivan, 1999, p. 7) Should schools serve the needs of corporations, countries, or the planet at large? Why should children be educated? Is continuous progress and economic growth a model that we should continue to abide with, or is this model better serving the needs of corporations and their bottom lines?

Education should not replicate the status quo in society; rather education must be a tool to transform society and lead citizens of the world in new directions. Education must be reflexive to the needs of society, and the world now needs to be rescued from a tragic loss of species diversity. Environmental education is an act of social transformation (O'Sullivan, 1999). Environmental education must integrate knowledge, skills, attitudes and actions (O'Sullivan, 1999 p. 156)

I encourage other educators: Let us embrace this moment and travel through space knowing that we must let mother earth guide us into the future. *“Each of us has the ability to act powerfully for change; together we can regain that ancient and sustaining harmony, in which human needs and the needs of all our companions on the planet are held in balance with the sacred, self-renewing processes of the Earth”* (Suzuki, 2002 p.239). Humans have assumed a lead role for the last 200 years and the results have been

less than impressive. Let's embrace our future (Berry, 1999; O'Sullivan 1999). The change must be swift.

Celebrating Successful Connections to the Natural World

Young children in their elementary years can develop the sense of awe and wonder at the complexity and beauty of nature that often accompanies these younger years. I see this quality in the Grade 1 students who are fascinated with the hatching of chick eggs in their room or the Grade 2 students watching the butterflies they hatched leap into the open air for the first time. This inter-species concern can be developed and nourished. Perhaps not by having all spiders move inside the school room, but simply by developing the sense of wonder that accompanies an observation and understanding of the viewpoint of the other in this way.

Techniques which begin the conversations that force people to see the world through multiple species perspectives will help us to develop a clearer sense of our cosmological moment in the universe. It will help students to understand how and why the earth is at the point of the largest mass extinction since the death of the dinosaur *and also how we have come to this place* in our history. Schools have shied away from larger questions because they are questions that have been dealt with within the traditions of organized religion in the past, which border on spiritual and ethical dilemmas.

It would seem to me that there is an opportunity here for governments to take more responsibility in providing programming for young children that helps to create interest and identification with the world around them in a manner that is both honest and intricate. It need not be exotic nor about a world that is unattainable to them. Student program initiatives such as Roots of Empathy develop a sense of empathy for the other.

Similar innovative techniques can be used to develop interspecies empathy and introduce a less hierarchical power structures to school. Students need to learn mutual respect for all living things.

“Before people can become citizens, they must see themselves as neighbors. It is their attachment to a place, the fact that they all live and care about it that brings them into relationship with one another, making them neighbors” (Thomashow, 1995 p.101). Developing this sense of shared values and decision making in regards to a more bio-centric position can begin in the school. Today neighbors reside both next door and in communities around the world. Witnessing the millions of people around the world who organized and captured media attention to protest the recent Iraq war, it is possible to see that citizenship and shared values know no geographic region.

“These are parallel healing processes, the ability to restore an ecosystem and the personal awareness to restore one’s psyche. An overdeveloped, polluted, disturbed ecosystem is not different from an exploited, burned-out psyche. Both require the full attention of the reflective environmentalist (Thomashow, 1995).

A healthy ecological self will be manifested as a unique connection to the natural world. When the connections to the natural world have been established and a sense of the awe and wonder at the complexity of this unique planet as the only known habitable space in this vastly complex universe, then you will be able to truly appreciate the sense of wonder at the complexity and richness of the life on it. An appreciation will be felt for the intricate balance that has developed within the interconnected components and cycles that bring life, renewal, and homeostasis to our home, the place we all love, our earth.

Chapter 6: What Did I Learn and Where Do I Go From Here?

Ecological identity is a part of one's human identity. It is part of who we are. Our interpersonal relationships connect us with our human species. Our ecological identity is formed through the relationships that we nurture with the rest of the biosphere and the earth itself. It is manifest individually and collectively our values, beliefs and actions.

In this chapter I reflect on some of the implications of the insights that I have gained through the process of the data gathering and research writing. I examine the importance of early experiences in laying the groundwork for the formation of ecological identity. The process of increasing one's circle of identification with places held in common and one's eventual activism appear to be arrested if the person does not have the opportunity to form close and positive bonds with the natural world.

Implications of the Findings

The participants who identified strongly with special places in their youth were also the participants who expressed concern for damaged places later in life. Participants who identified with special places in early childhood were more likely to express an interest in learning about how to take action to improve the environment. This identification with nature appears to be a prerequisite of an expanding sense of the commons at a later age.

The one participant who did not identify with his local habitat did not experience an expanding sense of place, nor did he experience activism on behalf of the environment at the time of his original interview, which the other participants did. He did not identify sufficiently with a place or a species to want to act on its behalf until he came to

recognize his connections to the natural world through the ecological identity work that he did with children.

The evidence shows that children themselves can act in a mentoring capacity for adults, helping adults to make the connections with nature that will lead to positive ecological identity and activism on behalf of the environment. John attributed changes in his attitude to his young students.

The research indicates Canadians trust public television and conservation programs to help them learn how to behave in accordance with conservation laws to the benefit of the planet. The national government has a unique opportunity to enlighten the discourse of Canada and to help its citizens come to know, love, and act on behalf of the environment in the country. These connections are best developed in the early years.

Developing a participatory consciousness in which one's ecological identities can grow and flourish through the family, school, media, and government can help to shape an ecological worldview for the next millennium. Schools, governments, and educational institutes can help to shape a more biocentric view in order to create a culture of shared values. Educators must participate in a discourse that responds to past traditions that were able to keep a balanced approach to the environment while integrating postmodern phenomenologies. The future will involve a search for new and synergistic ways of moving forward into the Ecozoic Era. The challenge belongs to all educators.

Rita Joe's (1988) poem expresses a metaphor for lost communication, the disconnect with nature.

I have lost my talk

The talk you took away.
When I was a little girl
At Shubenacadie school.

You snatched it away:
I speak like you
I think like you
I create like you
The scrambled ballad about my word.

Two ways I talk
Both ways I say,
Your way is more powerful.

So gently I offer my hand and ask
Let me find my talk
So I can teach you about me.

(Rita Joe, 1988)

In Rita Jo's poem she says she has lost her talk, her native tongue. The metaphor can apply to earth education. In many ways we have lost our ability to talk or relate to the rest of the living world. We have lost the sensibilities that once connected us with the rest of the living world. Ecological identity work is about rediscovering ourselves and redefining our true being, reinventing a new mythology.

Civilization has removed us from the natural world and in some ways placed us apart as separate beings. We no longer think of ourselves as animals, as part of the natural world. In many ways we too have lost our talk. We have taken on a scientific and economic language which is more powerful but has formed a disconnect with the natural world.

We will never regain the simplicity of earlier origin stories, believing gods were rolling rocks when it thundered (O'Sullivan, 1999) A new postmodern epic must incorporate past wisdoms with future visions for peace and prosperity for the earth.

Ecological identity work, through a shift in our basic premise of action and thought, can focus one's worldview through a lens that allows us, as individuals and as society, to come to know ourselves and our connections with the rest of the living world more intimately. It moves us from the isolation of seeing ourselves as part of the "other" to a view in which we see ourselves in communion with the other species. Understanding our ecological identity allows us to share a symbiotic interconnectedness with the living world.

Ecological identity is a study in the communion of the whole of the living world. Coming to know our connections frees us from the existential malaise in which we feel that we are alone and isolated. It reunites us with the other species of plants and animals with whom we inhabit our planet. It brings about a feeling of wellness in which we see ourselves as truly part of the "main" and leads us away from an era when humans have focused on their distinctness and separateness from the rest of the living world. It is part of the developmental cosmogenesis that we now come to understand; how we must find our place in the biosphere or perish along with thousands of species.

This realignment of the human species with the natural world has tremendous potential for the reintegration of our species as a part of the biosphere. This realignment with the natural world has begun to refocus human potentialities; learning from past earth wisdoms of indigenous peoples to honor a more biocentric focus and leading away from the anthropocentric course that has led to the greatest mass extinction of species since prehistoric time. Through the personal awareness developed in ecological identity work, one begins to recognize that it is evident that a sense of wellness that accompanies the

identification, realization and understanding of the ways that one is connected to the natural world.

The study into the ecological identity of five participants has shown that it is possible to unearth the connections that people have made with the natural world. These cognitive, intuitive and embodied ways of knowing our world can be explored, affirmed and celebrated. This awareness of one's connections to the rest of the living world enables one to act on behalf of that circle of identity. Circles of identification begin with the local, the places that individuals have become attached to in their childhood.

Individually and collectively, as we mature, circles of identification widen, as does our concern for these childhood places and the many other places that we may hold in common with others as places, which with we identify. We may develop a connection with our own backyard as a youth, later our concerns may grow to encompass our entire planet with its jungles, deserts, and oceans.

Sometimes people are not consciously aware of their connections to the natural world. They are so deeply embedded as to have become invisible to the person. It was most astonishing to see the participant who initially claimed to have no real connection or interest in the environmental concerns identify connections through his work with children and in so doing, be moved into action.

Unearthing nature connections in oneself through ecological identity work can provide a sense of connectedness and belonging. This sense of belonging has been shown in this research to nourish one's ecological sense and to compel individuals to act on behalf of the living world. Through these kinds of actions we have begun to embark on the journey of transforming the future focus of our species. An acceptance that we are

one part of the world of living creatures motivates us to take different kinds of actions than those that we would have taken seeing ourselves as above and separate from the other creatures. This simple shift in our understanding of our place in the cosmos has potential to help us act on behalf of our larger sphere of identification, thereby changing our future vision.

Recognition of the importance of our species' developing early connections with the rest of the natural world can impact how we, as educators design policy and outcomes for education. A national day care strategy could insure that opportunities for young children to play in natural settings are valued as an integral stage in child development. Outcomes for education could be restructured to insure that children have opportunities to explore their connections with the natural world. This represents a change from the current focus on sustainability issues to a primary focus on belonging.

Future Research Paths

Finally I will take a look at the directions for my future research. The area of the formation of ecological identity in young children is an area that could benefit from further study. Researching how the ecological identity is established in young children may help to determine how family experiences can interplay with public experiences in the home, daycare programs, schools and other setting for preschool and school- age children. Varied experiences that children have had with their families and care givers will give interesting opportunities to study a new generation of nature experiences.

As we embark on an educational course that will foster ecological identity we become involved with education that affects the heart and soul as well as the mind,

education that will reunites us with our central purpose for who we are and where we are going on this cosmological journey.

In order to improve the outcome for this planet and the species that live on it, we as parents, community members and educators need to cultivate strong ecological identities in youth. We need to insure that children at an early age experience nature and identify with the species in their local habitat.

Will an increasingly technologically advancing society suffer negative impacts on the formation of ecological identity in its children? Can the national government set regulations for a national day care policy that will ensure that children will have time spent in natural settings? Can programs for family environmental literacy impact a change? The development of a National Day Care Strategy could be an opportunity to develop policy that would recognize the importance of formative experiences in ecological identity in our young people. Research could help to determine the best kinds of experiences to help our youngest Canadians come to identity with nature at a preschool age.

What can educators learn from children? Can children help mentor adults in the way that they helped John to reconnect with his ecological self? Can children help us, as a society to deepen our ecological identity? Can youth help to form a more bio-centric relationship with the natural world?

Research could help to define the need for first-hand experiences of nature in the development of ecological identity. How will the world be affected if educators allow childhood to be come increasingly more technologically based with little or no opportunities for them to form bonds with the natural world? Younger children are part of

a new technological age and activities such as walks and family camping trips may not be as prevalent as they were 20 years ago, when the participants in this research project were growing up. It will be interesting to see how these differences are impacting on the formation of ecological identity.

The Earth Adventures project could also provide a tool for further research into how the governments can structure family adventures so that young children are provided with lots of opportunities to connect with nature at an early age. This may help to demonstrate whether or not governments can successfully plan activities for youth that will encourage positive identification with an increasing area of the commons. A look at the successes and failures of this program may help to shed some light on the behaviors of young children in school, extra-curricular, and family settings. These questions remain unanswered and may perhaps provide the topics of future research.

It would also be interesting to study the impact that adults have on youth in the development of their ecological identity. Kristen's mom listened to the voice of her youngster. She understood the importance of Kristen's narrative. Kristen's mom, by retelling the story, insured that this story would occupy a central caveat in Kristen's unique life narrative. It has also challenged me to think about the manner in which we respond to young children. How might things have been different if Kristen's mom had never retold the story to others?

This story has become central to who Kristen is, Kristen herself now does the retelling. Through retelling Kristen's narrative grows in strength and seems to occupy an even larger slice of who she is and what she is about. The results of this are that those who have come to know the uniqueness of her narrative are holding Kristen accountable,

affirming the statement, “Narrative is life and life is narrative” (Clandinin & Connelly, 1999).

Conclusions: Creating Collaborative Communities of Shared Values

Ecological identity work provides us with a window on our soul, a link with our being. In a world of estrangement and alienation, it is central to our understanding of ourselves as passengers on this blue planet that is whirling through space. It will help us to redefine our central purpose, to restate our destination for a more bio-centric future and act in accordance with our postmodern beliefs and world-view.

Ecological identity is manifest in cognitive, intuitive and embodied ways of knowing. Formative narrative experiences of ecological identity at a young age help us to identify with the commons, with an area of the environment that is outside of ourselves. This area of the commons grows in increasing circles throughout our lives. As we identify with a species, we become more willing to take action on its behalf.

Ecological identity is concerned with positive feelings of connectedness with the natural world. This need to develop the affective side can be nourished by spiritual experiences. No longer can we continue to compartmentalize ourselves as humans, we must reintegrate the whole of our persons in the education process.

Some participants of this research have had deep and profound experiences of ecological identity in the school system whereas others have not. Other participants in this research have had shallow or no experiences in the school system in which they have had an opportunity to experience connections with nature. In order for citizens of the future to be willing participants in the process of taking care of our planet earth we must ensure that young children have opportunities to experience the wonder of nature.

Students who have not been provided with positive experiences of nature cannot be expected to act on its behalf.

Students who have identified with nature from early experiences in their families are more likely to be receptive to school experiences concerning the environment. However it is possible to develop our ecological identity in later stages of our life, as shown in this research. Attitudinal change is possible. Children can assist adults in developing their ecological identity and beginning the process of identification. Educators need to be able to structure profound and moving experiences for this to happen.

Ecological identity is the piece that has been sometimes ignored by the school system. Teachers have asked students to act on behalf of the natural world without providing them with the kinds of experiences that would link them to that world and in so doing insure that they would be compelled to act on behalf of the organisms that they have come to identify with through those experiences.

One's ecological identity has been constructed through early experiences with nature. It is also impacted through family, media, government and schools. All manner of connection with nature can be strengthened to ensure that we come to see ourselves as fully a part of the living-breathing world of plants and animals. When this happens there is no doubt that acting on behalf of the biosphere will follow in a natural progression. It has been the disconnect with nature that has allowed us to come to see ourselves as distinct and separate from the other species with whom we share this planet.

At some level, we must all want the same thing for the planet. Schools should not shy away from the larger questions of cosmological purpose. Active citizenship is an

essential outcome of the public school program. School can help to develop a collaborate process skills in which cooperation; negotiation and shared meaning and decision-making skills can be taught to the young in order to help them come to understand the process of participatory consciousness building and its importance in transforming society.

“What I propose is very simple: it is nothing more than to think what we are doing” (Arendt, 1958). Without giving some thought to our larger cosmological purpose, we are simply whirling in space. We must discover what activities link us to our passion for the earth. When students are passionately and emotionally involved with saving the planet, then all the decisions that they make will reflect this desire.

In order for the communion with nature to be fully restored, as a society we need to move into the post modern era drawing from the rich and diverse wisdom traditions of our past, our eyes firmly fixed on our new mythology which will lead us to a peaceful co-existence with the plants and animals with whom we share our world. Moving into the Ecozoic Era will involve a shift in our thinking of the magnitude of the Copernican Revolution, which brought us to a new understanding of our relationship with the rest of the universe, this shift will be a joyful reunion with the natural world.

We now must come to a new understanding of our relationship with the rest of the biosphere on our planet. This revolution has begun and can be experienced daily. The school system should now begin to help students form links with the natural world that will guide their passage into this new Eco-zoic Age. And what a wondrous adventure it will be!

The following poem expresses my new found joy at the love affair that I have begun to deepen with our planet, our earth.

Pachamama

A planet brown

Just beneath her epidermis the earthworm works

Its magic of renewal

Every ounce of brown earth alive to thousands of species

Who call it home.

A planet green

She breathes through the bronchi of leaves

that produce oxygen

Fueling life processes

Chaos into pattern.

A planet yellow

The glow of the sun

Whose gift is life,

Energizing and refueling

Daisies.

A planet blue

Her waters circulate her lifeblood.

A beached whale rescued

returned to sea,

A human rescued from a shark

By a pod of dolphins

An interspecies language

Never lost!

Sparkling clear waters

Reflected in the azure sky

Renewing,

Quenching our needs

to belong

A planet alive

Every nook a niche

A rock, a home to an algae and fungi

United as lichen

The joy of living in communion,

Harmonious symbiosis.

Coming to know our knowing

Brings joys untold.

Celebrate our connections

Celebrate Gaia!

Rekindle the joy

Of being on board

Our earth,
Our Mother and Father

May we know ourselves and by knowing

Celebrate the journey

An epic adventure.

And guide our acts.

By: Betsy Jardine

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APPENDIX A**Baseline Questionnaire:****Preservice Teachers At Whycocomagh Education Centre**

(Note- You may withdraw from the research at any time by informing Anne Sherman of your intention to withdraw. Contact Ann Sherman: 902-867-5163 ann.sherman@stfx.ca.)

Date _____

Name _____

1. Give the five words that the topic “ environmental education “ brings to mind.

2. What do you feel is the most pressing theme that students should come to understand when learning about the environment?

_____.

3. Describe a lesson that you might share with any class that has an environmental theme.

4. Name an individual that has impacted on your attitudes towards the environment.

5. Can you think of a book , song or program that might have impacted on your environmental attitudes?

6. Can you think of a person who has impacted your life and helped to change your environmental attitudes?

7. How do you think you will be best able to reach students?

8. What kinds of situations do you feel might promote the learning of the kinds of environmental attitudes that you want to inculcate in students?

9. Can you rate the following activities?

The activity that would be most helpful to give you a feeling of being in communion with the earth should be listed as #1.

The activity that would make you feel the least connected to the earth would be # 10.

- _____ taking a walk in the woods by yourself
- _____ white water rafting
- _____ taking water samples of the lake near your home
- _____ watching a nature program
- _____ doing an air quality sample of a classroom
- _____ listening to a lecture on global warming
- _____ taking bottles to the nearest recycling depot
- _____ painting your living room
- _____ planting a garden
- _____ wilderness camping

Questions for the Taped Individual Interview

(Note- You may withdraw from the research at any time by informing Anne Sherman of your intention to withdraw. Contact Ann Sherman at 902-867-5163 or ann.sherman@stfx.ca.)

1. You named these five words _____ as ones that come to your mind when you think of environmental education, would you like to comment on each as to explain your choice.
2. You said that _____ was the most pressing environmental theme. Do you want to tell me a little about why you made that choice?
3. This, _____, is the lesson that you described as an environmental lesson that you could give a class. What affected your choice? Can you tell me a little more about it?
4. You named _____ as an individual that has impacted your environmental attitudes. What is it about this person that caused you to choose them?
5. You named _____ books, songs and programs as ones that have affected your environmental attitudes. Can you tell me a little about why you might have chosen them or how they impacted on you?
6. When asked, how you thought that you would be best able to reach your students, you wrote _____. Why? Do you think that this would be the best method to use?
7. Can you tell me a little more about the kinds of situations that you feel did the most to develop your environmental attitudes?
8. You rated the following activities as to which activity would give you the feeling of the greatest communion with the earth and which would give you the least. Can you comment on your choices?

APPENDIX C

Discussion of Quantitative versus Qualitative Writing on Ecological Themes

(Note- You may withdraw from the research at any time by informing Anne Sherman of your intention to withdraw.

Name _____

Directions: Take ten minutes and look over the books on the table.

Select one book from the group marked quantitative

Select one book from the group marked qualitative

The books in the middle group defy classification, if you select one of these be prepared to discuss which paradigm (or both) best describe it.

Look through the books displayed.

1. Select a few lines that you would like to read from a book in the pile that is marked qualitative.

Sample #1

Title _____ pg _____

Excerpt _____

Select a few lines to read form a book that is marked quantitative

Sample #2

Title _____ pg _____

Excerpt _____

Optional : Select a book form the third pile

Title _____ pg _____

Excerpt _____

Tell why you have chosen this particular piece.

Which of you pieces is better able to communicate knowledge about the environment? _____

What types of writing do you think are most powerful in reaching your students?
Why?

APPENDIX E

Letter of Informed Consent for Participants

Research Project: Narrative inquiry into formative experiences of participants' ecological identity.

Ecological identity pertains to how we view the environment as part of who we are. Ecological identity is constructed through our contact with nature and our perceptions of the workings of eco-systems. It entails the ways that we construe ourselves in our relationship with the earth. It is manifested in our sense of self, our values and our actions (Thomashow 1996).

This is a letter of invitation to participate in a research study into the kinds of experiences that have led you to form your ecological identity. The knowledge gained will be used to help the researcher to plan educational experiences for students. The information gained will also be presented at the Canadian Network for Environmental Education and Communication Conference.

With your permission, the data gathered will be used anonymously in this research. The data will consist of a baseline questionnaire, an individual audio-taped interview (approx. 30 minute) and the recorded conversations with other participants from three focus group sessions.

- As a participant you will be free to refuse to answer any question that is posed.
- You may ask to turn the tape recorder off at any time during the individual or group interviews.
- You may withdraw from the research process at any time.
- If you withdraw, your data will be discarded and destroyed.
- The taped interviews will be transcribed and the information kept confidential.
- The transcript, tapes and other materials will not be identified by name but by a pseudonym.
- The transcripts, tapes and other materials will be kept in a secure location for two years following the completion of the researcher's Masters of Resource Degree.
- No one will be identified as the source of any quotation.

Please understand that the data collected is to be used for research and educational purposes only. By signing the document, you are giving permission for the release of the data and we assure you that the confidentiality guidelines will be maintained as outlined above, including use of the data in written reports and educational conference contexts. Your name will not appear in these reports. Please contact me at any time that you have concerns.

Researcher's Contact Information

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Phone: 902-863-2650
902-867-5414
Email address: lmacdona@stfx.ca

Your signature below indicates your consent to be interviewed as part of this research process.

Name of participant _____

Signature of participant _____

Date _____

APPENDIX F
Ethic's Review Board Approval