

Exploring Parents' Perception of the Importance of Nature Exposure

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Submitted for a Combined Honours Degree in Environment, Sustainability and Society and Environmental Science

at

Dalhousie University
Halifax, Nova Scotia
May 2016

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DALHOUSIE UNIVERSITY

DATE: May, 2016

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TITLE: Exploring Parents' Perception of the Importance of Nature Exposure

DEPARTMENT OR SCHOOL: College of Sustainability

DEGREE; Bachelor of Arts
Environment,
Sustainability and Society and
Environmental Science

Convocation: May 2016

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Table of content

Abstract.....	4
Acknowledgement.....	5
Chapter 1: Introduction.....	6
1.1 Problem.....	6
1.2 Purpose.....	7
1.3 Research Question.....	7
1.4 Definitions.....	8
1.5 Limitations and Delimitations.....	8
1.6 Significance.....	9
Chapter 2: Literature Review.....	9
2.1 Nature Deficit Disorder.....	9
2.2 Children and Nature.....	10
2.3 Parents and Nature.....	11
Chapter 3: Methods.....	13
3.1 Rationale for Qualitative Design.....	13
3.2 Role of Researcher.....	13
3.3 Study Population.....	14
3.4 Data Collection Procedures.....	14
3.5 Methods of Verification.....	15
Chapter 4: Findings.....	16
4.1 Influences.....	17
4.2 Benefits.....	18
4.3 Barriers.....	21
Chapter 5: Conclusion	25
References.....	27
Appendix 1: Notification Emails.....	30
Appendix 2: Consent Form.....	31
Appendix 3: Survey.....	32

Abstract

Research shows that children's time spent in nature is decreasing which often causes behavioural problems (Louv, 2008). This issue has sometimes been associated with parents' own lack of understanding of nature. It has been found that if parents themselves don't understand the importance of nature, or do not have a sense of bioaffinity (i.e. love of nature), then they are less likely to make choices that will expose their own children to nature (Strife & Downey, 2009). Using a case study approach, the goal of this study is to identify the influences that motivate and/or discourage parents from enrolling their children in the Wild Child Forest School program, an environmental education program with the goal of exposing children to nature. Further, this research aims to understand how parents perceive the importance of nature for their children's development. This work will add to the growing body of knowledge on motivations for nature exposure; help to fill gaps in the present literature available about parents' perception of nature; and to understand the barriers present, which discourage parents from exposing their children to nature.

Acknowledgements

I would first like to express my sincere thanks to my supervisor Dr. Tarah Wright for her patience and guidance helping me through this unfamiliar process. I would also like to thank Steve Mannel, Andrew Bergel and Daniela Turk for their advice and crisis solving skills along the way.

I would like to extend my sincerest thank to the Wild Child Forest School program and to Sally Trower for allowing me to survey parents enrolled in this program. This thesis would not of been possible without your help and cooperation.

Lastly, I am thankful for my friends and family who helped to motivate me along the way. Thank you for taking an interest in my project and providing me with advice.

Chapter 1: Introduction

1.1 Problem

In the past decades, research has shown that increased time spent in the natural environment has numerous benefits for children (Beyer et al., 2015). For example, being in contact with nature can help a child's physical and mental health (Louv, 2008). Nature exposure can also produce positive benefits for the health of the global environment. For example, research shows that when children spend time outdoors they create positive relationships with the environment, which then manifests as pro-environmental behaviour in adult life (Louv 2008). A problem exists, however, in that children have been spending an increased amount of time indoors and in front of screens. (Wahi, Parkin, Beyene, Uleryk, & Birken, 2011) A sedentary lifestyle, which, many children are now accustomed to, holds the risk of severing individual's exposure and connection with nature. In Canada, only 9% of children aged 5 to 17 meet the required 60 minutes of moderate to vigorous activity (Active Healthy Kids Canada, 2014). Furthermore, research shows that children are 6 times more likely to play a video game than to go outside to ride a bike (Strife & Downey, 2009). Richard Louv, an expert in the field of environmental education for children, calls this lack of exposure to the outdoors the "Nature Deficit Disorder" (Louv. 2008). This disorder is defined as behavioural problems such as lack of concentration and anxiety caused by the lack of time spent in nature. The connection with nature is crucial to the healthy physical and mental development of a sustainable society (Louv. 2008).

While children spend an increased amount of time indoors and are increasingly susceptible to the Nature Deficit Disorder, children are not the masters of their own lives or schedules. Parents are traditionally the schedulers for children's days and are the ones who make choices that can impact how much nature exposure a child has. Often children's' views correlate with their parents (Sigel, McGillicuddy-DeLisi, & Goodnow, 2014). How they are raised often defines what activities they are exposed to and what habits they develop in their

adult life. If a strategy to increase nature exposure is deemed beneficial to a sustainable future, it is essential to understand the impact parental affinity toward nature can have on their children. Further, it is pertinent to better understand what encourages and discourages individual parents to expose their children to nature and environmental education programs.

1.2 Purpose

Using a case study approach, this research aimed to understand what motivated and deterred a small cohort of parents who enrol their children in the Wild Child Forest School program to expose their children to nature. The Wild Child Forest School program is a program under the umbrella of the Sierra Club Atlantic Chapter, which seeks to bring children back to nature (Wild Child Forest School, 2015). This program holds sessions on weekdays and weekends from children from the age of 3 to 12. This organization holds half days and full days sessions. Each session only hold about 10-12 children (Wild Child Forest School, 2015).

Further, the research examined what benefits parents perceive their child would receive when exposed to nature through this program. Also, this research aimed to identify barriers parents have experienced with accessing opportunities to provide nature exposure for their children. Identifying influences, motivations and barriers parents face creates a better understanding, which could potentially be used to improve nature exposure programing, access to program and to increase awareness about the benefits such programs can have on children.

1.3 Research Question

The main research question that guided this study was: What motivation and influences encourage parents to expose their children to nature through the Wild Child Forest School program? Further this research will also try to answer the following sub questions:

- What benefits do parents recognized when they expose their children to nature?
- How do parents perceive the importance of nature for their child's development?

- What are the barriers that prevent parents from exposing their children to nature?

1.4 Definitions

To truly be able to discuss this research, it is important to define some terms, which are recurrent throughout this thesis.

Biophobia: Biophobia is the fear of nature (Encyclopedia Britannica, 2015)

Biophilia: Biophilia is the love and connection with nature (Merriam-Webster, 2015)

Environmental Education: Environmental education is defined as learning about the planet, environmental issues and how to manage them better while trying to change human behaviours (Wals, Brody, Dillion, & Stevensons, 2014).

Forest School: Forest schools are becoming increasingly popular. Forest schools are bringing a new dimension to learning by bringing participants in the natural environment and exposing them to learning with nature as a guide (Forest School Canada, 2014). Like normal school, it is a weekly occurrence.

Nature deficit disorder: This term is borrowed from an expert in the field Richard Louv. The nature deficit disorder can be characterised as the lack of time spent in the outdoor leading to behavioural problems (Louv, 2008).

1.5 Limitations and delimitations of this research

This study had a number of limitations and delimitations. The time period for completing an Honour's thesis is very short. Therefore, time limits the scope and the possible outcome of this project. Another limitation of this study was that the researcher of this study could not choose who responded to this study. There is a sample but within the sample itself only willing participants could answer.

To make this research manageable delimitations were imposed. The data collection being quite short, parents were only surveyed in late January and February. Therefore, only parents

available in this time frame were able to respond. Considering the contacts of the lead researcher, only parents of this particular outdoor program were surveyed. There are however other children outdoor programs in the area. Furthermore, limiting myself to this program limited the sample size and at the same time the validity of the results. In addition, this survey was sent by email. Any parent without an email address will not be able to respond.

1.6 Significance

The true significance of this project was to understand what influences parents had to expose their children to nature in a single case study. By doing this, this research also helped to identify barriers to exposure. Understanding the barriers and influences could help the Wild Child Forest School program, and potentially environmental education programs in general, to better acknowledge what they should focus on to help motivate parents to enrol their children and improve their programming.

This research is significant since it helped to fill the gap in the literature about environmental education and adults. Very little is known about how parents perceive nature and why they often omit to expose their children to the natural environment. It is difficult to move forward in this field and to improve exposure to nature without having the appropriate literature available.

Chapter 2: Literature Review

2.1 The Nature Deficit Disorder

Has mentioned previously, the nature deficit disorder is the lack of time spent outside leading to behavioural problems mainly in children (Louv, 2008). These behavioural problems for example are anxiety and aggressive behaviour. There is also amassing evidence that increasing the time children spend in nature can help to appease an Attention Deficit Hyperactivity Disorder and other similar disorders (Louv, 2008). This term is coined by an

expert in the field Richard Louv in his book *The Last Child in the Woods: Saving our Children from the Nature-Deficit Disorder*. Richard Louv also calls the environment “restorative” meaning that the environment can be used as a tool to remedy the situation. Both of these concepts are not approved scientific terms but are now more commonly used in the field of environmental education along with the term “de-natured” which is also becoming common (Strife & Downey, 2009).

2.2 Children and Nature

Richard Louv (2008) advocates that when children spend less time in nature, the level of depression, obesity and cognitive disabilities rises and that this is a growing trend. Other researchers support this claim showing that children are more than ever before spending time in front of screens (Faber, Taylor & Kuo, 2006). There is now a strong correlation between decreased outdoor time and rising childhood obesity and depression (Frumkin, 2005). This problem has been associated with increased urbanization, diminishing numbers of green spaces and too many structured activities (Strife & Downey, 2009). While some children might get enough outdoor play, some literature argues that structured programs may not be enough and that they do not achieve the same beneficial outcomes (Rosenfield & Wise, 2001).

The access to green space and to a safe environment is also discussed in many articles. More green space can sometimes seem like the solution. However, access is not necessarily enough considering safety and crime rates have been known to limit outdoor play (Strife & Downey, 2009). This is why environmental education programs are needed in urban environments. Beyer et al. (2005) surveyed multiple classrooms in six different schools. They concluded that once again safety is a factor which limits children's time spent outside. Nevertheless, they found environmental education programs could help to reduce fears children may have about the environment and subsequently break down one of the main barriers and increased

levels of outdoor play. Furthermore, research shows once children start spending more time outdoors the likelihood of developing environmental awareness and environmentally friendly values increases greatly (Cheng & Monroe, 2012).

2.3 Parents and Nature

As explored above, children are affected by the lack of exposure to nature. However, the goal of this research was to explore how parents are influenced towards bio affinity and what are the barriers and influences, which push them to expose their own children to nature. Research has shown that many things can influence the perception adults have about the environment. Palmer, Suggate, Bajd & Tsaliki (1998) examined how different experiences of adult at certain stages in their lives influenced their perception. This research used questionnaires, which were given to environmentalists from different countries. In Slovenia for example, 90 people out of 245 said that close family was the main influence. On average in every country, it was shown that reading about the environment is very effective but being involved in certain activities such as encouraged recycling, being part of a green organisation did not engage them in being more environmentally friendly. For example, in the United Kingdom playing outside as kid seemed to be the factor, which had the most influence on their adulthood habits. A study by Chawla (2006) also supported this claim showing that the more parents are exposed to nature as children, the more likely they are to lean towards environmental career choices or simply environmental friendly values. This study also discussed that knowledge about the environment is not enough to lead to action and that research must include variables such as personal investment in the issue, environmental sensitivity, and skills using the environment.

The role of childhood factors in becoming environmentally friendly in their adult lives is becoming increasingly evident (Cheng & Monroe, 2012). Another study conducted by Palmer, Suggate, Robottom & Hart (1999) compared how adults were influenced to develop

environmental awareness in the UK, Australia and Canada. This research looked at factors such as religion, outdoor experience in youth and close family and friends. For example in Canada, the main factor, which influenced adults to develop environmental awareness, was nature outdoor experience in childhood. Nevertheless, this study did not go into more details about how awareness could be increased and does not explore the topic of parents and how they specifically understand the importance of nature for their children.

Another study done at Royal Roads University (Moore, 2014) aimed to explore the knowledge parents have about Forest Schools and the potential barriers parents' experience. This research being very similar to this thesis found that often parents who spent more time in nature were more inclined to expose their children to nature. This research also focused on the lack of knowledge, which parents hold about the availability of Forest Schools in Canada and therefore identified this problem to be the main barrier to Forest School enrolment. This similar work did not however identify barriers and influences, which challenge parents who are already aware of Forest School programs.

In addition, it is argued that neighbourhood safety and crime levels have an impact on the severed connection between children and nature. (Frumkin, 2005; Jackson & Tester, 2008). Some research claims that parents do not expose their children because they are simply not familiar with the environment (Cheng & Monroe, 2012). Some even call this the culture of fear for parents (Strife & Downley, 2009).

Has shown above in the similar studies adults can be influenced by certain experiences to enjoy nature. Nevertheless, this does not prove that their children will be exposed to nature. This is mainly the point this thesis meant to explore; the influences, which make parents, enrol their children in environmental education programs. This work was looking for what

led to action and to knowledge transcendence on the part of parents. The purpose of this thesis was to try and understand why parents would expose their children to nature. No studies were found on the enrolment barriers and influences for already established Forest Schools. There is a knowledge gap when it comes to Forest Schools and their enrolment incentives.

Chapter 3:Methods

3.1 Rational for a Qualitative Design

The goal of this research was to understand influences, experiences and points of views of parents. This goal could only be achieved by means of conversation and questions. For this reason, qualitative methods such as the use of a survey were more suitable than quantitative data collection (Creswell, 2013). Further, to try and understand the research question to its full extent, open-ended questions were considered more appropriate (Creswell, 2013). Open-ended questions allow the participant to explain without restriction, and allows for the collection of empirical data. By using an *a posteriori* coding method, this research saw what emerged from the survey and explored many different influences and barriers, which motivated parents (Creswell, 2013). Qualitative methods allowed this research to be fully exploratory and broader. Furthermore, similar studies have always used qualitative methods such as surveys and interviews to assess similar questions (Palmer, Suggate, Robottom & Hart, 1999).

3.2 The Role of the Researcher

For this research, the role of the researchers was to explore in the least constrictive manner how parents perceive the importance of nature for their child. For this study, the researcher was considered an instrument of data collection. The role was to fully explain to participants of the survey what was involved in this research, what they could expect from this research

and how their participation could make a contribution to new knowledge. The role was also to obtain consent from the participants and to protect anonymity and confidentiality.

The researcher for this study has been working with the Wild Child Forest School for almost a year and has already created many connections with the parents of the Wild Child Forest School. The researcher of this study has observed parents and children interacting in the field and in doing so has developed a better understanding of the issue at hand.

3.3 Study Population

This study used a non-probabilistic, purposive sampling approach. The participants for this study were not chosen randomly but from a specific study population. The whole population was surveyed and not only sub-groups. The study population, about 30 parents, was composed of parents who currently send or have sent their children over the past year to the Wild Child Forest School program. The coordinator of the Wild Child Forest Program developed a complete list of Wild Child parent emails. The researcher sent an email to each of the parents asking them to participate in the study (see copy of email in appendix 1). A consent form was included in the survey once participants chose to participate in the survey (see copy of consent form in appendix 2).

3.4 Data Collection Procedures

This research was designed around the distribution of a single survey. Surveys are an effective way to reach a larger sample in a timely manner (Creswell, 2013). Considering the scope of the project, surveys were considered the best way to collect data rapidly and effectively. The surveys had a mix of open-ended and closed questions (see Appendix 3). Surveys helped to give a good overview of some of the influences, which encouraged parents to enrol their children into nature programs. These surveys are also a good starting point for future research on the subject matter.

For this research, extensive preliminary research and literature review was conducted. With this information, a survey was formulated. Shorter and concise surveys are known to be more effective (Creswell, 2013). Therefore, the survey was designed to only contain 10 questions. Once the survey was completed, an application to the Dalhousie Research Ethic Board was written and sent. The survey was then pilot tested and moved onto the computer software Opinio. Opinio is a survey software approved by Dalhousie University which helps in the gathering and comparing of data (Opinio, 2015). The main researcher of this project distributed the survey. Once the data was gathered, each survey was analyzed and coded using an *a priori* coding technique. To draw clear conclusions, the data was then compared to the literature previously analysed. This helped to determine any trends between the influences and barriers explained the literature and the data. With this data analysis, this research looked at how parents responded differently to identify influences and barriers to enrolling children in environmental education programs. The results were made available to the Wild Child Forest School.

3.5 Methods of Verification

The goal of verification in qualitative research is to ensure that the study is reliable, valid and also trustworthy (Creswell, 2013). Trustworthiness of the study is about the quality of the investigation. To achieve trustworthiness, the study must be credible, transferable to other cases while available for comparison, dependable and conform to the evidence used to support the study (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Some of the main methods of verification are establishing a methodological and sampling coherence and thinking theoretically. Methodological coherence is making sure that the methods are adequate to answer the question while sampling coherence is choosing the best sample population to answer the question. Thinking theoretically is about establishing reaching an outcome, which can be used for further research. In the case of this thesis, all these components were addressed. This therefore ensured the quality of this study.

Chapter 4: Findings

12 participants out of 30 answered the survey. It is important to first consider that about 80% of the respondents had children between the ages of 1 and 6. Therefore, the majority of the results correlate with this group age.

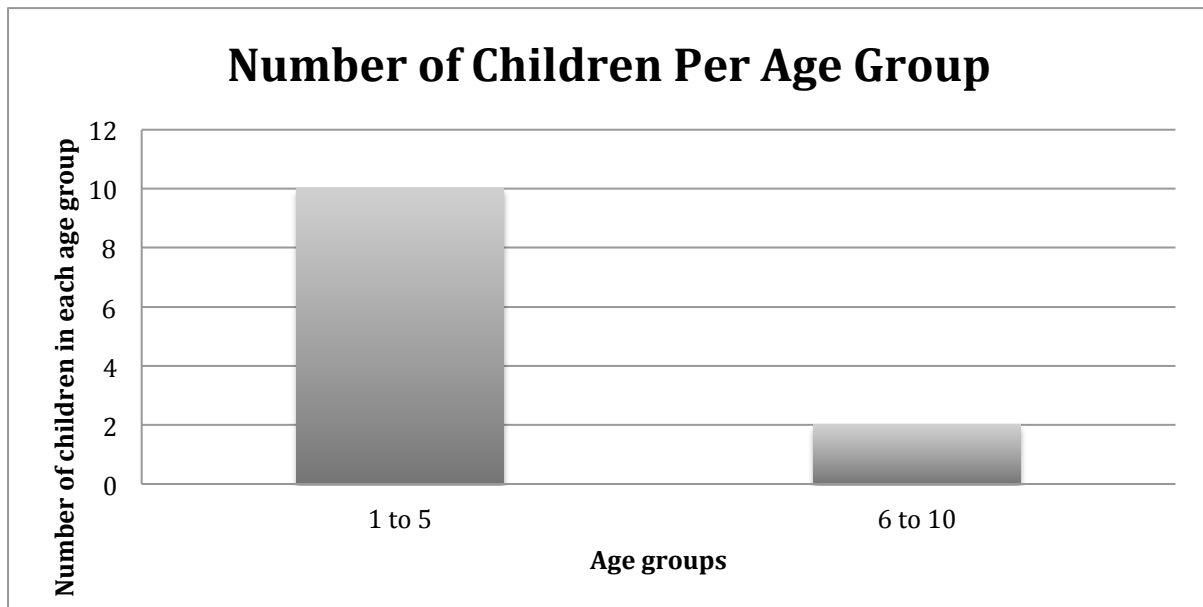


Figure 1. Number of children per age group identified by participants

This survey identified that children involved in this study spend the majority of their outdoor time per week playing in backyards followed by going to diverse parks and playing in a forest. For example, 10 respondents mentioned that their children spend between an hour and five hours playing in the backyard per week while only eight respondents mentioned forest exposure was between one and three hours per week. The “other” outdoor environments mentioned by surveyed parents were playgrounds and school outdoor time. There was no indication of other structured outdoor program (e.i skiing, soccer). Figure 2 below shows that no children spent more than four to five-hours in a single environment per week and that children spend mainly two to three hours hours in each environment per week. Furthermore, no children partook in “other” activities for more than two to three hours.

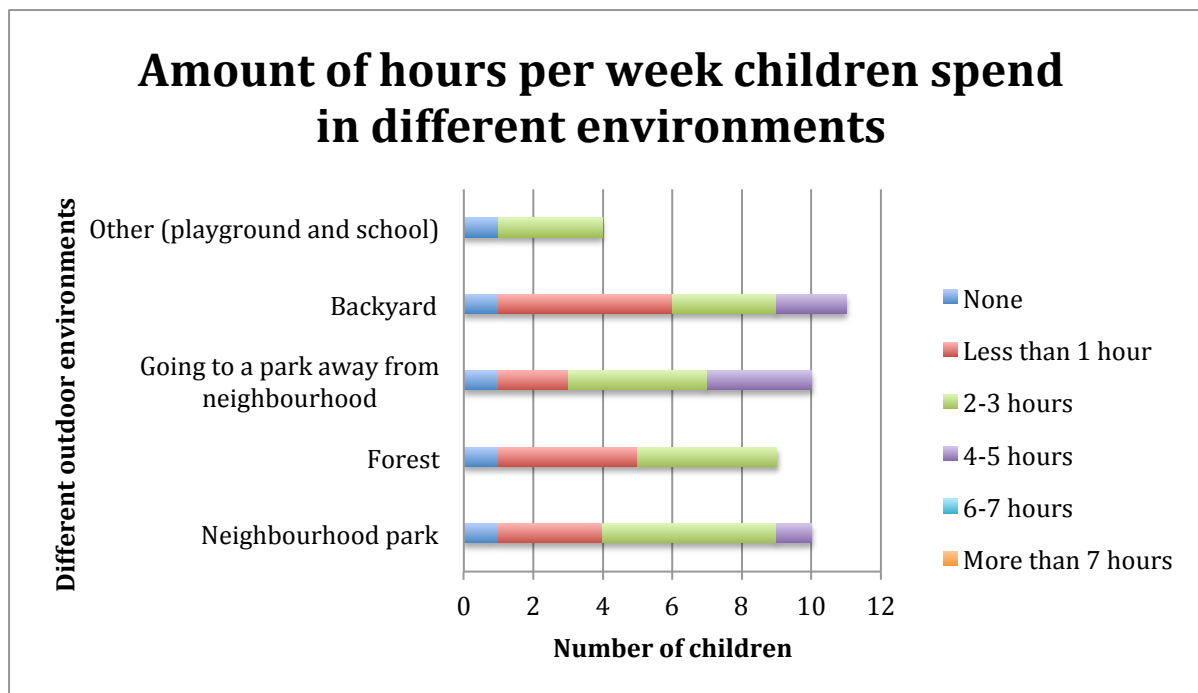


Figure 2. Amount of hours per week children spend in different environments. (Modified graph from Opinio software 7.3)

This survey also identified that many participants experienced a more rural lifestyle growing up than their own children. Therefore, parents today may have experienced different barriers than previous generations if we take in consideration this urban lifestyle. In addition, about 41% of respondent still believe that children do not spend enough time outside even with the time spent outside in the Wild Child Forest School.

The following section explores the major finding of this thesis and compares each theme to the literature. The following results are divided between influences, benefits and barriers.

4.1 Influences

When looking at what influenced parents to enrol their children in the Wild Child Forest School, not all of the parents indicated that their own nature experiences as children were a conscious influence, yet all mentioned that they were very active in the outdoors as children. This result is interesting considering that many studies have proven that children spending

time outside can influence adults to make similar choices once they reach adulthood (Chawla, 2006). While the parent's personal own nature experiences as children may not have been a conscious influence, perhaps subconsciously it had an impact on the parents decision to enrol their child in a nature-related program.

Some participants mentioned a newly found environmental awareness due to their own personal research on beneficial impacts of the environment, which influence them to expose their children to nature more than their own experiences as children. Participant #6 mentioned that they felt: “more compelled by research (and our general happiness) around importance of outdoor play and connection to nature for children”. The idea of new environmental awareness through research was not something found in the previously analyzed literature for this study.

4.1 Benefits

The analysis of the data revealed 4 main benefits, comfort, knowledge, relationship with nature and unstructured play and main influences being personal research and nature exposure. While some of them were identified in the literature, new perceived benefits emerge from this survey.

Comfort. When asked what influenced them to expose their children to nature, many participants mentioned the idea of comfort. The idea of their child being comfortable in nature and being able to use nature for its resources seemed to be a major draw for parents, as participant #1 mentioned: “Inspire a comfort with and love of nature from an early age”. While some parents stated the actual word comfort, others discussed this topic more vaguely. For example participant #11 said: “I would like to see our son develop more

familiarity with the woods and learn to see them as not threatening’’. This quote also demonstrated that this parent was aware that children might be afraid of the outdoors.

Responses from this study may suggest that parents see their children gaining comfort in the environment as a life skill. Parents hope that gaining skills such as coordination, good planning and learning about different species will help their children be more comfortable and diminish any fears about the environment. It could also be concluded that knowing that their children are comfortable in nature will help ease parents’ minds about outdoor forest play. These results provide interesting guidance for the Forest School programs. In a study by Beyers & al. (2005) they found that reducing children’s and parents fear about nature could help to increase outdoor play and enrolment in environmental education programs. Given the results of this study, to improve enrolment the Forest Schools could increase efforts into bringing parents into to nature or demonstrating safety measures taken to ensure children’s safety.

Knowledge. Parents can perceive many benefits to exposing their children to nature (Louv, 2012). The results of this study found that the participants valued the knowledge they felt their children would gain from participation in the Forest School: “I would like to see our son develop more familiarity with the woods and learn to see them as not threatening (as popular culture would have them!) but places of learning, healing, recreation, and beauty” (participant #11). When asked what particular benefits they anticipated, parents answered: “Outdoor skills (shelter-building, making a fire, learning about wild species of flora and fauna). -learning self- sufficiency and the importance of good planning. (appropriate clothing, snacks...etc) (Participant #11). The belief that knowledge will be increased by engagement in environmental education programs is well documented in the literature. Many scholars have found that student’s environmental knowledge increases after exposure to intentional nature

programming, which in turn facilitates affective connections to nature, and the promotion of environmentally responsible behaviours (Kuharet al. 2010; Turtle, Convery, & Convery, 2015).

Relationship with nature. Another theme discovered within the participants' responses was that parents wanted their children to develop a relationship or an attachment with nature: "Inspire a comfort with and love of nature from an early age" (Participant #1). Parents were motivated to enrol their children in environmental education programs because they recognized the potential for their child to create a relationship with nature: As one parent said: "Forest school is a way for him to continue to connect with nature" (Participant #2). The opportunity to build such a relationship with nature and the benefits it brings seemed to be a major draw, which influenced parents to expose their children to nature. For example, Participant #5 said: "I want him (my child) to appreciate the outdoors and natural environment as places for fun, learning and especially, conservation".

These responses along with the influence of their own nature exposure described earlier, suggest that parents want their children to have a relationship with nature as some of them experienced when they were children. Parents sought out the Wild Child Forest School program to offer the same opportunity to their own children: "I value nature and time spent there and want the same for my kids" (participant, # 1). Therefore, the parents own relationship with nature seemed to be something they want to transcend to their children. A similar conclusion was achieved the article by Cheng & Monroe (2012) which found that after surveying children a major predictor of their connection with nature was the family member who transmitted their love of nature to them. Therefore, what could have influenced parents was wanting their children to have the same opportunities they had even if they live in a more urban environment.

Unstructured play. Participants indicated that enrolling their own children in the Forest School was another way to add activity diversity into their children's lives. In particular, many participants mentioned that they wanted a source of unstructured play for their children. As one participant said: "We felt the forest school would offer more time in 'true' nature (not playgrounds), opportunities to play with other children in nature, learning from mentors who love nature, and time to explore nature in a semi-structured way" (participant #5). Parents explained that the lack of time their children spend engaged in unstructured play during regular daycare and/or school, and being influenced by this concern to seek other ways to provide unstructured play. The Wild Child Forest School was therefore a way make up for their daily structured activities.

Unstructured play is a major theme explored in literature about environmental education. This is especially discussed by Richard Louv (2012), who advocates that unstructured play helps to develop certain cognitive abilities, such as imagination and creativity that cannot be obtained with other organised programs such as soccer. Further, Fjortoft and Sagerie (2000) demonstrate that the natural landscape has particular qualities that meet a child's need for stimulating and challenging play environments, and that children who play in the natural environment demonstrate better motor skills and are more creative in their play than children who play in more traditional playground settings. Considering all the publicity and attention that unstructured play is getting, parents are looking for programs that can achieve this outcome. This was definitely identified in this study.

4.2 Barriers

The analysis of the data further showed the barriers that the participants associated with enrolling their children in outdoor education programs in general. Three main barriers for parents exposing their children to nature through the Wild Child Forest School were

identified in this study: time, safety and accessibility to programming. These barriers are discussed in more details below.

Time. Participants expressed that with busy schedules, the difficulty they have with exposing their children to nature is time. With day care, school, and extracurricular activities, parents find it difficult to make time to get their children outside. As one parent said: “I would love to have my child in nature daily, but as a mother with three wee kiddos time does not allow for it. We get our children outside as much as possible- but I wish more often” (participant #10). Parents also expressed concerns with what they perceived as a lack of time devoted to nature in their child’s regular school or daycare. For example, participant #4 said “I wish more of the daycare day was spent in nature (they spend 0.5-1 hour/day outside, but is in a fairly structured playground”. Nevertheless, this can seem like a barrier to nature exposure but it does also push parents to seek outdoor environmental education program for their children.

Safety. Safety was also a theme discussed in the survey. Only a small number of parents mentioned this as concern. However, some of the parents did struggle with trusting programs to take care of their children in a forest environment. Some participants mentioned very specific concerns, for example, one participant said: “Bee stings. Not having a teacher that I can trust to be aware of my child’s risk acceptance levels” (participant #10).

The theme of safety has been explored many times in the literature. For example, Cheng & Monroe (2012) mentioned that parents are often unfamiliar with nature and therefore are more resistant to expose their children to this environment. Much of the literature also discusses the safety and crime rate being a barrier to outdoor play (Strife & Downey, 2009).

These types of safety concerns related to community environment did not seem to be a deterrent factor to the parents in this study.

Unstructured play may seem like something the participants of this study want for their children. However, there is a disconnect between what parents want for their children and what their comfort/safety level is willing to let them expose them to. As mentioned above one of the main concepts parents are looking for is the concept of unstructured play. However, concerns for safety was another theme explored in the survey. This theme was not as prevalent in this study as it was in others (Cheng & Monroe, 2012). Nevertheless, it is difficult to achieve unstructured play without letting go of safety concerns. Parents will have to increase their trust level to environmental educators. Therefore, even if parents are environmentally aware, the issue around safety could stop them from enrolling their children. Trust relationships are something programs such as the Wild Child Forest School should consider working towards to increase enrolment.

Access to Programming. Many participants mentioned the lack of access to environmental programs for their kids: “There wasn't any for young children until Wild Child came along” (participant #1), “There are very few structured or semi-structured nature education/experiential activities or programs in Nova Scotia for 3 - 5 year olds” (participant #5). Many participants explained that they could not find any other full time outdoor environmental programs in the Halifax Regional Municipality (HRM). Furthermore, it was indicated that other environmental education programs in the area did not take appreciation of nature seriously. As mentioned before, parents stated that they enjoyed a more rural lifestyle has children but because of the nature of their work, urban living is necessary. This urban lifestyle became a barrier creating a lack of access to programming for their child's nature exposure. Therefore it is clear that to increase the transcendence of appreciation to nature

from parents to children, more programs are needed. These programs must be accessible in a timely manner for parents who live in an urban environment. Without access even parents aware of environmental education programs cannot truly expose their children to nature no matter how great they believe these programs are.

There is much literature that discussed lack of accessibility to green space (e.g. Beyer & al, 2005), but to date there has been very little discussion regarding lack of accessibility to environmental programming. Accessibility to green space is not necessarily enough because of safety issues surrounding certain areas and the fear of nature certain parents and children hold. The study done at Royal Roads University (Moore, 2014) also found that parents' knowledge of the availability of forest school programs in Canada to be a barrier. This study along with this thesis can therefore argue that accessibility is a barrier but also it is possible parents may not be aware of the options which surround them.

Forest Schools could also partner with school boards to integrate certain Forest School activities in the curriculum, which could help with time restraint parents may face but also access to programming. Furthermore, this could help to create credibility and awareness to Forest Schools. This is a growing trend in other cities such as Ottawa, where a similar program to the Wild Child Forest School is offering field trip options to school boards (Nease, 2014). The Wild Child Forest School has done some sessions with certain schools but this is a practice, which could always be improved and increased.

Aside from the barriers explained above, another interesting result arose from this study. In the literature identified, mental and physical health benefits of outdoor play and environmental education programs are often seen as the primary benefit (Louv, 2008). However, in this survey, health benefits were only mentioned once, by one participant only.

It is interesting to see that what participants in this survey perceived as benefits such as comfort in nature and knowledge were not related to health. This leads to wondering if parents were more aware of health benefits associated with outdoor play, if enrolment rates or trust in these programs would be higher.

Chapter 5: Conclusion

Bringing children back into nature is becoming a priority to increasing sustainable values in our society. Nevertheless, it is not always simple for parents to do or to see benefits in exposing their children to nature. The goal of this research was to identify what a small cohort of parents believes the benefits; influences and barriers are to the enrolment and exposure to outdoor environmental education programs. With the use of survey, this research used a case study approach to inquire parents who enrol their children in an outdoor environmental education program called the Wild Child Forest School.

After this survey and a coding process, it is now clear that the main motivations and influences to nature exposure for children was parent's own exposure to nature and a newly found environmental awareness through research. This seemed to be consistent with the literature. Parents deemed nature exposure to be important because they wanted their children to be comfortable with nature, acquire new knowledge about nature and create a relationship the environment. Unfortunately this goal is hard to achieve because of accessibility to programming, safety, and time. The combination of these perceive benefits and barriers however can sometimes push parents to seek and enrol their children in environmental education programs such as the Wild Child Forest School.

Some of the barriers and influences identified were very similar to the literature analyzed in chapter 2. Parents want to transcend their love for nature and allow their children to benefit

from it as they did. However, their own comfort level and lack of programs in the area is limiting them. Nevertheless, accessibility, comfort, time restraints and knowledge about nature were all themes, which emerge from this study. For this reason, this research can be added to a body of literature, which is trying to understand and prove the importance of nature exposure. Very little studies concentrate primarily on parents such as this one. Therefore, this is significant in aiding to fill the gaps.

This study suggests that parents recognize many benefits in nature exposure for their children. However, the barriers such as access to programming sometimes limit their capability to enrol their children in environmental education programs. While accessibility to programming may be improved with the help of provincial governments, environmental education programs should create better awareness about the benefits. Not only should they try to show parents that there is nothing to fear about letting children enjoy nature in unstructured way, but they should also create awareness around health benefits which parents may not be aware of. Furthermore, partnering with school boards could be a way to create a sense of credibility to environmental education programs. In order for children to develop sustainable values it is important that parents transcend their appreciation for nature to their children. For this to become possible benefits identified should be advertised and barriers diminished with partnerships and parents exposure to nature.

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Appendix 1

Survey Email

Thank you for consenting to be part of our study on parent's perception of the importance of nature for their children. You are receiving this email because you have provided your email to the Wild Child Forest School and have children enrolled in this program.

As we outlined in the consent form, we value your privacy and assure you that all responses will be kept anonymous and used for research purposes only.

Taking this survey is quick and easy. Please complete the survey by February 26. You can click the link below to start the survey.

Reminder email

This is an email to remind you that the survey on parent's perception of the importance of nature for their children will be closing in four days, on February 26th. Your participation in the survey is very important and we value your opinion.

You can click the link below to start the survey.



CONSENT FORM

Exploring parents' perception of the importance of nature exposure

You are invited to take part in a research study being conducted by me, Camille Dumulon-Lauziere, an undergraduate member at the College of Sustainability, as part of my honours degree at Dalhousie University. The purpose of this research is to understand the motivation, which lead parents to expose and enrol their children in environmental education program. The goal is also to understand the barriers, which could stop parents from exposing their children to nature. I will write up the results of this research in a paper for my class, called the honours thesis.

As a participant in the research you will be asked to respond to an online survey sent by email. This survey will be done on the online software called Opinio. All responses will be saved on a secure Dalhousie server and processed using Stata Statistical software. The survey does not ask for your name, and no grouping with less than 10 responses will be reported.

Your participation in this research is entirely your choice. You do not have to answer questions that you do not want to answer, and you are welcome to stop the survey at any time if you no longer want to participate. All you need to do is close your browser. I will not include any incomplete surveys in my analyses. However, if you do complete your survey, if you change your mind later, I will not be able to remove the information you provided because the surveys are completed anonymously, so I would not know which one is yours.

Information that you provide to me will be collected anonymously, which means that there will be no questions asked in the survey that asks for identifying details such as your name or email address. Only my supervisor and I will have access to the survey results. I will describe and share general findings in presentations/my honours thesis/scientific journals. I will keep anonymous survey information so that I can learn more from it as I continue with my studies.

The risks associated with this study are no greater than those you encounter in your everyday life.

There will be no direct benefit to you in participating in this research and you will not receive compensation. The research, however, might contribute to new knowledge on how to encourage parents to expose their children to nature.

You should discuss any questions you have about this study with Camille Dumulon-Lauziere. Please ask as many questions as you like. If you have questions later, please feel free to contact me or my supervisor. My contact information is cm665429@dal.ca

If you have any ethical concerns about your participation in this research, you may contact Research Ethics, Dalhousie University at (902) 494-1462, or email ethics@dal.ca

Appendix 3

Question 1:

Relationship with the child involved in the environmental education program. If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind.

Mother
Father
Stepmother
Stepfather

Legal Guardian
Other please specify:

Question 2:

Age of the child. If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind.

1-5
6-10
11-15

Question 3: Please indicate the amount of hours your child plays in each environment. If your child/children plays in different environments please fill the empty boxes. If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind.

Hours per	None	Less than 1 hour	2-3 hours	4-5 hours	6-7 hours	More than 7 hours
Playing in neighbourhood parks						
Playing in a forest						
Going to park						
Backyard play						
Other						

Question 4: To what extent do you agree with this statement: The child I have enrolled in the Forest School Program spends enough time in nature. If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind

Strongly Agree
Agree
Disagree
Strongly Disagree

Question 5:

When you were a child (before the age of 18) what experiences did you have with the natural world (e.g. playing outside, camp, etc.)?

Question 6:

To what extent do you feel that the nature experiences you had as a child influenced your decision to enrol your child in the Forest School?

Question 7:

What are the main factors that influenced you to enrol your child in the Wild Child Forest School program? If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind

Question 8:

What benefits do you anticipate to see from your child's enrolment in the Wild Child Forest School? If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind.

Question 9:

What, if any, concerns do you have with your child interacting with nature through the Wild Child Forest School? If you have more than 1 child enrolled in the Forest School, please answer the questions with your oldest child in mind

Question 10

In general, what barriers have you encountered when looking for environmental education or nature experiences for your child/children?