

**Enabling the Wild Child: Measuring Child Sense of Place and Connectivity to  
Nature in Relation to a Park Experience**

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## ABSTRACT

Nature-deficit disorder is a condition termed by Richard Louv in 2005 to account for the disconnect from nature experienced by individuals, families, and communities in the developed world (particularly in a North American context). It has most notably been documented as a problem that afflicts today's children. In finding a solution to this concern, an understanding of what connects children to natural places is necessary. Connection to nature is defined in the context of this research as an emotional bond an individual has with the environment (Jager & Halpenny, 2012). Increasingly more people live in cities with less nearby nature; consequently, parks have become more important in the role they play in exposing people to the natural environment. Sense of place theory explores the meanings and attitudes people prescribe to a place (Derr, 2001) and thus provides an appropriate theoretical framework for examining park attachment in children.

This research seeks to understand what experiences in parks are most influential in fostering a sense of place and relate to a stronger connection to nature. This study followed a mixed methods design, using a survey tool in the form of a park activity booklet. The activity booklet contains both a sense of place and connection to nature measure, capturing children's voice through writing and drawings.

There were two levels of data collection and analysis. A pre-test was first conducted with families (N=7) to improve upon the usability of the instrument, selected through convenience sampling. The revised questionnaire was sent to schools in the Thunder Bay Catholic School Board where children ages 8-12 (N=460) completed the activity booklet in class while parents (N=133) completed the survey at home. Statistical

analyses were performed on the data using Statistical Package for the Social Sciences. The qualitative written responses were coded to uncover resultant themes.

The findings of this study conclude that allowing children unstructured time to explore the outdoors through imaginative play and nature appreciative activities is the best way to foster a connection to place. Further, sharing experiences with family members, and exploring natural features (e.g. lakes, forests, plants and animals) were most indicative of sense of place.

This study has developed a means of measuring the relationship between children's sense of place and connectivity to nature using one local sample population. It has provided insight on what experiences are most memorable in a child's park visit and gives reason to believe children can make meaningful connections to a place they visit. This research has pragmatic implications for park staff, as it provides information on aspects within parks that foster an attachment to place and connection to nature, illustrating where efforts should be focused to increase family visitation.

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## **1.0 INTRODUCTION**

### **1.1 Study Purpose**

Maintaining a healthy relationship with nature throughout one's lifetime has been linked to a number of emotional, cognitive and social benefits (Maller, Townsend, Pryor, Brown & Leger, 2006; Maller et al., 2009). Today's youth face a number of challenges obtaining outdoor experiences compared to past generations. Cultural shifts, land governance issues and changes to outdoor spaces and environmental education, are all contributing to children being further removed from the natural world (Louv, 2005). Author and journalist Richard Louv (2005) defines this disconnect from nature as nature-deficit disorder. Finding ways to combat nature-deficit disorder and cultivate outdoor play is becoming more of a recognized issue in developed countries. The Canadian Parks Council has given special attention to this issue as Canada's parks are well positioned to foster connections with the natural environment. As parks are largely natural spaces, they provide a lens to examine children's experience in nature.

Connection to nature in the context of this study is defined as an individual's affective attitude towards nature (Cheng & Munroe, 2012), meaning, their feelings towards nature and the emotional bond (Jager & Halpenny, 2012), they have with the natural environment. It is respecting, appreciating and feeling a sense of belonging within the natural world (Cheng & Munroe, 2012). For the purpose of this study it is measured through four elements: (a) enjoyment of nature, (b) empathy for its creatures, (c) sense of oneness and (d) sense of responsibility (Cheng & Munroe, 2012). Children's sense of place within natural places is also critical in understanding the values they ascribe to these settings. Sense of place considers the meanings they associate with the

place and what facets of experience are important to them. Fostering a sense of place and a connection to nature within parks speaks to a bigger conservation issue, that being, as children who have positive interactions with the natural environment are more likely to become environmentally conscious adults (Chawla, 1999; Ewert, Place & Sibthorp, 2005).

Maintaining public interest in Canada's outdoors is paramount to the sustainability of Canada's parks and protected places (Jager & Sanche, 2010). Visitation statistics suggest that national park use by younger generations is declining (Shultis & More, 2011). Therefore, Canadian parks have made changes towards a more youth friendly system, identifying gaps and challenges in programming (Parks Canada Agency, 2016a; Canadian Parks Council, 2014). Park managers recognize a unique offer is necessary to compete with other vacation options, especially considering Canada's changing demographics. During the last 25 years the number of immigrants settling in Canada have greatly increased (Chui, Tran & Maheux, 2007), as has the number of people living in urban centers (UNFPA, 2007). Given the traditional camping experience may not appeal to all Canadians, efforts have been made to target diversified user groups. Recently, Parks Canada has implemented alternative accommodation options such as cabins, oTENTiks and yurts with a plan of adding tree houses in the near future (Parks Canada Agency, 2016b). Parks Canada identified an interest in ascertaining families' views of alternative accommodation and if tree houses appeal to children who have a strong connection to nature. Part of my research goal included a collaborative effort with the agency to research this possibility.

The aim of my research is to determine what park features and experiences

contribute to a child developing a sense of place in a park and a strong connection to nature. Parents and children's views of accommodation options are also captured, with specific emphasis on the implications of the upcoming tree house offer. The research has pragmatic implications for park staff, as it provides information on aspects within parks that foster an attachment to place and connection to nature, illustrating where efforts should be focused to increase family visitation.

## **1.2 Organization of the Thesis**

This thesis is divided into seven chapters. This introductory chapter illustrates the need for the current research and sets the scope of the study. I begin subsequent chapters by sharing my personal experiences in nature. These stories follow a chronological order from ages 6-11 and will help to illustrate how nature has shaped my own life. Chapter 2 reviews the available literature, outlining the positive benefits of nature for children, the rise and potential causes of nature-deficit disorder, a means of measuring connection to nature in children, an overview of sense of place theory as it relates to this research, and finally, an overview of children's visitation and experiences in parks and protected areas in Canada. Chapter 3 outlines the methods. It provides an overview of the development and pre-testing of the survey instrument and some insight into the study area. Chapter 4 outlines the quantitative results while Chapter 5 explains the qualitative results. Chapter 6 ties the quantitative and qualitative results together with findings from the literature to explain outcomes of the study. Chapter 7 provides an overview of key findings and comments on limitations of the study and recommendations for future research.

## 2.0 LITERATURE REVIEW

### 2.1 Introduction

*Age 6 (1994): Walking for what seems like ages on tired legs we finally reach our backcountry campsite; my parents, our family friends and their children are on a weekend getaway in the wilderness. I gaze at a golden field surrounded by trees, our own little backcountry escape nestled in the hemlock forests of Kejimikujik National Park. My first lesson in conservation is not to pluck moss from the earth. I reason with my parents that I was simply trying to make a soft and inviting home for the woodland fairies. I catapult through the water, loving every minute of the sand and clay underfoot. Then, quieter time spent on the lakeshore, in vigilant pursuit of unsuspecting bullfrogs. At the end of day, exhausted and happy, I curl up in the arms of my mother. We close off the night with popcorn cooked over the fire and a perfectly toasted marshmallow.*

There are a number of related theoretical strains that form the basis of this research, beginning with the health and psychological benefits that result from children spending time in nature (the converse being nature-deficit disorder). This chapter begins with an overview of known benefits of spending time in nature, followed by an overview of nature-deficit disorder and its speculated causes, which include: changes in culture, outdoor spaces and education. This will be followed by an evaluation of tools used for measuring children's connectivity to nature. Due to the rising awareness and concerns associated with nature deficit-disorder, Canadian parks have developed strategies to encourage children and youth to visit parks. The relationship of children and parks will be explored followed by an overview of sense of place theory. Sense of place theory looks at people's connection to place and thus provides an appropriate theoretical framework for examining park attachment in children; this section does not provide a comprehensive review of sense of place literature (which is outside the scope of this research) but rather an examination of the most commonly used concepts from sense of place research in resource management and environmental psychology.

## **2.2 Benefits of Nature for Children & Youth**

Many studies have documented a wide range of benefits resulting from spending time in nature for all people (Bowler et al. 2010; Cervinka, Röderer & Hefler, 2011; Golbey, 2009; Maller et al., 2009; Sobel, 1993; Stutz, 1996; Ulrich, 1993; Ven den Berg, 2015). Children and youth are of special importance when noting benefits as they are at an important stage in the development process (Golbey, 2009; Sobel, 1993). Persistent outdoor activity throughout the lifespan has been shown to have significant health benefits such as, “stress reduction, physical activity, social ties and social support, healing and immune functioning” (Kuo, 2013, p.175), further illustrating the importance of facilitating opportunities for people to recreate outdoors.

A number of social, mental and physical benefits of outdoor recreation have been studied (Louv, 2005). One such finding is that spending time in nature reduces stress (Golbey, 2009) and increases feelings of wellbeing (Bowler et al., 2010; Cervinka, Röderer & Hefler, 2011). A finding pertaining to social benefits is that green space fosters social interaction and thereby promotes social support (Cohen, Inagami & Finch, 2008). In terms of physical benefits, being outdoors increases levels of physical activity, and in doing so helps to prevent the wide range of diseases that accompany being overweight (Golbey, 2009; Kuo, 2013). Additionally, positive mental benefits can in turn have positive outcomes for one’s physical health, because the two are dependent on one another.

In particular, many studies have focused on time spent outside as preventing or lessening symptoms of attention deficit hyperactivity disorder (ADHD) in children (Taylor, Kuo & Sullivan, 2001). This theory began with the work of Stephen and Rachel

Kaplan on attention-restorative theory demonstrating, "...that a person does not have to live in wilderness to reap nature's psychological benefits – including the ability to work and think more clearly" (Louv, 2005, p.103). Similarly, Ulrich (1984) found the aesthetics of nature appear to have a calming, restorative effect whereby patients in a hospital who were facing a window that overlooked a natural setting recovered faster than those who had no window or were not facing a natural scene.

Fostering positive behaviours early in life carries over to later in life (Chawla, 1999); Pretty et al. (2009) concluded "early socially-stimulating environments are crucial. Later emotional well-being and cognitive capacity is profoundly influenced by early social development" (p.4). Additionally, exposure to nature and the outdoors as a child leads to environmental awareness, which can lead to environmental consciousness that often persists later in life (Aspinall & Montarzino, 2008; Chawla, 1999; Ewert et al., 2005; Pretty et al., 2009; Sobel, 1993). Fostering environmental consciousness in today's youth is important considering the state of the planet. If we do not impart interest in young people, then who will be tomorrow's environmental stewards? Thus it is critical to ensure that children not only have the opportunity to engage in nature-based recreation, but that they develop an attachment to natural spaces.

### **2.3 Nature-deficit Disorder: Reasons for Disengagement**

The term nature-deficit disorder was introduced by Richard Louv to account for the increasing gap between children's activities and nature. Louv defines nature-deficit disorder as, "the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses" (Louv, 2005, p.34). He believes this disorder can affect individuals, families, and even



communities, though he sees it as especially prevalent in today's generation of children and youth. His research has identified the following factors as reasons for child disengagement: a shift in culture, land governance, a change in outdoor spaces and lack of education. These barriers to outdoor engagement are examined in the subsequent sections.

### *2.3.1 Cultural Shift*

There has been a shift in demographics where today more than 50% of people live in urban centers (UNFPA, 2007). This change in settlement patterns has influenced how children spend their free time. In North America, today's children spend a much higher proportion of their time indoors than the previous generation (Louv, 2005), and the time they do spend outdoors is highly organized and usually takes place in structured spaces (Wridt, 2004). In a study on youth engagement with the outdoors, seventy percent of Canadian youth (ages 13 to 20) were found to have spent approximately an hour or less outside each day (David Suzuki Foundation, 2012). In the 2012 Report Card on Physical Activity for Children and Youth, only 46% of children participated in active play for three hours or less per week (Active Healthy Kids Canada, 2012).

One reason children are given less free range in the outdoors is the perception of the dangers that are present, with culture and family heritage potentially having a direct impact on people's perception of such dangers (Fraser, Heimlich & Yocco, 2010). Safety and the perception that nature is not near one's homes are barriers that make children and youth less likely to engage in outdoor activities. Incidences of child abductions frequent the news, and although there are not necessarily more abductions, they are being depicted much more readily in the media (Louv, 2005). As a result, parents do not feel safe letting

children play unsupervised (Karsten, 2005) or travel on foot to and from school (Hillman, Adams & Whitelegg, 1990).

Another cultural shift is the importance placed on technology. “In the span of a century, the American experience of nature has gone from direct utilitarianism to romantic attachment to electronic detachment” (Louv, 2005, p.16). There is a problem with indirect learning through machines; whereas free play in the outdoors encourages creativity and self-discovery (Golbey, 2009), computer and video games do not foster this same degree of learning (Louv, 2005). In an effort to combat this issue, attempts have been made to integrate technologies into outdoor recreation activities. For example Parks Canada has a new partnership with Google Maps to enable people to take virtual tours of national parks and historic sites in the comfort of their own homes (Macleans, 2013). The hope is that by exploring the trails and landscapes online people will want to do so in real life. Another example is the iNaturalist application, which provides an online community for reporting observations of plant and animal species (iNaturalist.org, 2016).

### *2.3.2 Changes in Governance of Outdoor Spaces*

In developed countries, Louv (2005) argues there are many cases where government regulations impede natural play. Private land and recreation areas are subject to many laws that often restrict activity, require fees and consequently, limit accessibility. Most countries do not even have a general guideline for play space allocation and not enough people live near accessible green space (Louv, 2005). For-profit play centers and well-manicured fields for organized sport are replacing wild tracts of land (Tandy, 1999). Everything is managed and monitored, there is no freedom for children to choose, and as a result creativity in play is lost (Tandy, 1999).

Wridt (2004) noted that children have gone from playing in the streets, to parks and playgrounds to indoors. Archival and statistical analysis of historical data illustrate that children in 2003 did not play outside as much or for as long as those who grew up in the 1950's and 1960's resulting in Karsten's (2005) three classifications of children; "outdoor" children, "indoor" children and "backseat generation" (meaning those mostly driven places by their parents and whom are highly supervised). Similarly, children have less independent mobility (Hillman, Adams & Whitelegg, 1999). A lack of understanding of the developmental benefits is an additional barrier to outdoor play, as many adults feel that unstructured outdoor play is less important than structured organized sports. (Fraser et al., 2010). Parents of the millennium exert much greater control over children's play compared to the past (Tandy, 1999).

A contemporary positive measure that governments have taken is to recognize the need for incorporating green space in urban areas, such as easily accessible neighborhood parks and urban parks (i.e. Rouge Park in Toronto, ON, Canada's first national urban park.), which is beneficial as people are more likely to utilize nearby green spaces (Wridt, 2004). Moreover, frequent visits to nearby nature have been shown to have health benefits (Kuo, 2013). Children who access the outdoors on a more frequent, consistent basis gain the most benefits (Kuo, 2013; Pretty et al., 2009).

### *2.3.3 Education*

There are issues of concern in today's generation with regards to their knowledge, attitudes and behaviour pertaining to the environment (Louv, 2005). In a study conducted in the United Kingdom, more eight year olds could accurately identify characters in the popular Japanese trading card game Pokemon than species of plants and animals in their own neighborhoods (Balmford, Clegg, Coulson & Taylor, 2002). One educational trend that is a cause of children distancing themselves from nature is that curricula are putting too much emphasis on the ecological degradation of the planet (Louv, 2005). David Sobel, (a co-director of the Center for Place-based Education at Antioch New England Graduate School) said this results in "ecophobia" (Louv, 2005, p.133), which is when the environment is presented from such a disastrous outlook it causes withdrawal, where children and youth feel the problem is overwhelming and correspondingly, children choose to dissociate. Other challenges in the field of environmental education include: change in demographics (i.e. greater cultural diversity, change in traditional family structure) (Hudson, 2001), increased focus on risk management of outdoor play combined with less accessible green space (Louv, 2005), and a lack of teacher confidence, knowledge and expertise in facilitating outdoor learning (Marcinkowski, 2009)

Louv (2005) suggests that environmental-based education is one solution to nature-deficit disorder where natural spaces in one's community, schoolyard or backyard are used as a space for learning. Partnerships with schools, federal and provincial parks and non-profit organizations are an integral part of creating new child/youth outdoor programming opportunities. Outward Bound is an example of a successful environmental

education program, and is considered one of the United States' leading examples (Louv, 2005). Forest School Canada is a successful initiative of the Child and Nature Alliance of Canada to provide courses to equip educators with the skills they need to lead outdoor classrooms (Forest School Canada, 2016).

#### *2.3.4 Summary & Reflection*

The concept of nature-deficit disorder is gaining traction. In the United States, awareness is increasing with the Leave No Child "*Inside*" movement. In Canada, the Child and Nature Alliance was formed in 2009 "to create a deliberate and comprehensive Canadian strategy to celebrate outdoor play and activity" (Child & Nature Alliance of Canada, 2014). The issue is not only gaining awareness in North America but also globally: "In 2007, the World Future Society ranked nature-deficit disorder as one of the top 10 concepts that could impact and shape world health in the years to come" (Driessnack, 2009, p.71). One of the eight themes during the 2014 World Parks Congress (WPC) was '*Inspiring a New Generation*' (IUCN World Parks Congress, 2014) and as a result in November 2015, the Brandwein Institute hosted a three-day North American Summit in which key stakeholders came together to create an action plan for connecting present and future generations with nature (Brandwein Institute, 2016). This evidence points to a growing movement on the importance of creating opportunities for children to build attachments to natural places, and Canada's parks provide a space in which young people can do so.

## 2.4 Canadian Parks & Protected Areas & Children & Youth

The Canadian Parks Council has given special attention to the issue of nature deficit disorder as Canada's Parks are well positioned to foster connections with the natural environment:

*Parks agencies share the mandate, the dedicated staff, and most importantly, the exceptional natural places that were created for the benefit of all Canadians. Working across all sectors and disciplines, we can ensure every child – rural or urban, rich or poor – is given the chance to explore a nearby field or stream, experience the wonders of a provincial park, and develop an appreciation for nature that transcends their generation. Canada's parks provide the space and opportunity for families to bond, children to play, and communities to meet. They lie at the heart of our efforts to forge a renewed relationship with nature.*  
(Canadian Parks Council, 2014, p.23)

As parks offer opportunities for more direct contact with nature, they provide an appropriate setting to examine children's experience in nature. Through review of the literature on nature-deficits, Kuo (2013) addressed the question of nature dosage in relation to health and well-being and found three general themes: "maximize minutes; all forms, all doses help; the greener the better" (p.177). Although benefits of frequent exposure to everyday nearby nature are well documented (Kuo, 2013), more pristine, awe-inspiring nature has the most profound effect on health and well-being (Kuo, 2013).

The future of Canadian parks and protected areas depends on youth. "Youth are an indicator species. They reflect the state of the relationship between park agencies and the communities that make up Canadian society" (Canadian Parks Council YEWG Report, 2011, p.6). In turn, it is important to facilitate opportunities in which they can learn about the natural world. Park staff would like to see youth more actively involved in parks. The Parks Canada Agency and National Park Service report a decrease in young visitors (Shultis & More, 2011), particularly due to increased dependence on electronic

devices. Both agencies have extended education efforts to increase child visitation especially in urban areas (Shultis & More, 2011). However, they lack the knowledge and resources to facilitate youth-based programming (Canadian Parks Council YEWG Report, 2011).

Dearden and Rollins (2009) identified that partnerships between park agencies and schools are lacking and initiatives need to be made to engage children and youth both in and outside of parks. Similarly, the Canadian Parks Council Youth Engagement Working Group (YEWG) also recommended that park agencies do more to collaborate with schools and nonprofit organizations (Canadian Parks Council YEWG Report, 2011). As previously discussed, education is essential for fostering stewardship in youth. The YEWG's report outlined that Canadian parks branding and communication strategies are not meeting the needs of young Canadians (Canadian Parks Council YEWG Report, 2011). Three youth specific programming barriers identified in the YEWG's report are: cost, transportation and difficulty accessing information.

At a federal level, Canadian national parks are doing more to establish partnerships and learning opportunities outside of park boundaries (Dearden & Rollins, 2009). They are also taking on initiatives to develop new visitor experiences within parks to ensure they are relevant to a diversified user group (Shultis & More, 2011) such as the *Xplorers program* (Parks Canada Agency, 2013a) and the *Learn to Camp* event (Ontario Parks 2016a; Parks Canada Agency 2013b). The Canadian Parks Council and Ontario Parks have put forward a *Healthy Parks, Healthy People* initiative with the goal of increasing awareness of how parks can positively contribute to Canadians' health.

As these above initiatives illustrate, Canadian parks are working to make changes

towards a more youth friendly system. A state-of-knowledge report put together by the University of Northern British Columbia and the Canadian Parks and Wilderness Society addresses literature on park visitation and nature connectedness and indicates gaps where further research is required (Wright & Matthews, 2014). The report calls for a better understanding of the concepts of sense of place and connection to nature as they relate to parks. It is not simply getting children into natural spaces that will make a difference to their well-being and future participation in outdoor recreation activities, rather, the benefits lie in instilling a sense of place and connection to nature through exposure to such places.

## **2.5 Measuring Child Connection to Nature**

Assessing a child's connection to nature helps in determining their intention to participate in nature-based activities in the future (Cheng & Monroe, 2012). Gosling and Williams (2010) found that people who had a strong connection to nature also exhibited pro environmental behaviours and an expanded sense of self. Thus, children who have a strong connection to nature are more likely to not only want to visit a park but care about the future of the park.

There are a limited number of existing scales that measure connection to nature. In a report conducted by the University of Essex for the Royal Society for the Protection of Birds (RSPB), Bragg, Wood, Barton and Pretty (2013) put together a comprehensive list of existing scales (Table 2.1) that measure people's connectivity to nature. This list includes: Connection to Nature Scale (CNS), Nature relatedness Scale (NR), Inclusion of Nature with Self (INS), Environmental Identity Scale (EIS), and the Emotional Affinity to Nature (EAN). Bragg et al. (2013) also identified two scales that have been developed



specifically for children: Connection to Nature Index (CNI) and the Nature Connectedness Inventory (NCI) (summarized in Table 2.2)

Table 2.1: Adult Connection to Nature Scales Comparison

<b>Author</b>	Mayer & Frantz (2004)	Nisbet et al. (2009)	Schultz (2002)	Clayton (2003)	Kals & al. (1999)
<b>Scale</b>	CNS	NR	INS	EIS	EAN
<b># of factors</b>	Single-factor trait measure	3-factor trait measure	Single-item measure	5-factor measure	4-factor state measure
<b>Measures</b>	affective & cognitive aspects	affective, cognitive & behavioural aspects	affective with elements of the other 2 aspects	affective, cognitive & behavioural aspects	affective aspects

Source: Bragg et al. (2013)

Table 2.2: Child Connection to Nature Scales Comparison

<b>Author</b>	Cheng & Monroe (2010)	Ernst & Theimer (2011)
<b>Scale</b>	CNI	NCI
<b># of factors</b>	4-factor trait measure	2-factor measure
<b>Measures</b>	affective & cognitive aspects	affective & cognitive aspects

Source: Bragg et al. (2013)

The goal of Bragg et al.'s (2013) research was to evaluate existing connection to nature scales to find one best suited for determining connection to nature in children. The chosen scale would then be used in a future study of the Royal Society for the Protection of Birds (RSPB) to develop a baseline of children's connection to nature in the UK. Factors they considered were effectiveness, ease of understanding and practicality of administration. Bragg et al. (2013) chose three measures based on this review to test on a sample of 76 UK children, one of which was developed for children (CNI) and two of which were adult measures adapted for use by children (NR and INS).

A short form of the Nature Relatedness Scale (NR-6), with the wording adapted for children was one of the chosen measures. The Nature Relatedness Scale measures an

individual's level of connectedness with the natural world. The original, full scale consists of 21 items rated on a 5-point Likert scale, from 1 (disagree strongly) to 5 (agree strongly). The NR-6 contains 6 items rather than 21, four of which assess 'self' (personally identify with nature) and 2 items that assess 'experience' (feeling of comfort and desire to be in nature) (Nisbet et al., 2009). A total nature relatedness score is obtained by adding up the individual scores and dividing the total score by 6.

The other adult scale adapted by Bragg et al. (2013) for use by children was the Inclusion of Nature with Self (INS) scale. The INS asks participants to rate their connectedness to nature by choosing 1 of 7 pairs of circles that differ in their degree of overlap. In the original measure, within each pair one of the circles is labeled 'self' and the other circle is labeled 'nature'. Bragg et al. (2013) adapted the scale for child participants by labeling the circles 'me' and 'nature' and instead of 7 pairs of circles there were only 5, enabling scores to range from 1-5, similar to the other two instruments used.

The Connection to Nature Index (CNI) was the only measure tested by Bragg et al. (2013), which was designed specifically for children. The CNI, developed by Cheng and Monroe (2012), measures children's affective attitude towards nature. It is a questionnaire containing 16-items that are rated on a 5-point Likert scale, from (strongly agree) to (strongly disagree). Cheng and Monroe (2012) used elements previously identified in research that appear to influence environmental attitudes, to develop the CNI. In their reworking of the scale for UK children, Bragg et al. (2013) lumped together some elements as one, as they were concerned that children would not differentiate the items the same way as adults would. The following are the four constructs used in the CNI: (a) enjoyment of nature, (b) empathy for its creatures, (c) sense of oneness, and (d)

sense of responsibility. In addition to the CNI, Cheng and Monroe (2012) included a number of survey questions regarding three variables that have been identified in the literature as influencing children's attitudes toward nature: (i) experience; (ii) nature near the home; and (iii) family values toward nature. Cheng and Monroe (2012) found a significant positive correlation between scores on the connection to nature index and each of the four variables, suggesting that the connection to nature index is indeed measuring an important affective attitude toward nature (Cheng & Monroe, 2012; Bragg et al., 2013).

Additionally, Cheng and Monroe (2012) found connection to nature predicted interest in participating in nature-based activities. Assessing children's interest in participating in nature-based activities is of importance to park staff for program planning purposes and increasing child park visitation. One can assume that children with a stronger perceived connection to nature will be more likely to identify nature-based park features and experiences as the most important aspect in forming an attachment to the park.

The three connection to nature measures were judged on their relative performance in terms of statistical reliability, inter-scale comparisons and correlations, ease of understanding and practicality of administration (Bragg et al., 2013). In terms of statistical reliability and inter-scale comparisons and correlations all three of the measures performed acceptably. However out of the two trait measures, the CNI had higher internal consistency than NR-6 (Bragg et al, 2013). In terms of comprehension and completion as well as outcome, the CNI was found to be the most appropriate by children and staff (Bragg et al., 2013). Cheng and Monroe (2012) found that this measure was best

suitable for 8-10 year olds, while Bragg et al. (2013) recommended it for children ages 8-12. Based on the findings of Cheng and Munroe (2012) and Bragg et al. (2013) I chose the CNI as the most appropriate scale to use in my study to measure connection to nature. Additionally the recommended age range for the measure falls within the target age for looking at place attachment in children (Sobel, 1993) and, therefore, it is well suited for my study.

## **2.6 Sense of Place**

Sense of place theory is utilized in many areas of research including architecture, environmental psychology, resource management, geography and environmental education. Each discipline has unique ways of interpreting sense of place, although there is overlap in many trains of thought. Derr (2001) defines sense of place as “an integrating concept that moves physical places into a personal realm; it represents the unique way people tie together places, experiences, and the meanings they derive from or ascribe to these, and the emotional bonds to places they will hold (Derr, 2001, p.7). Borrowing from Derr’s (2001) work, I am interpreting sense of place as ‘having a meaningful connection to a place’ and in the context of this research, that place being one that is natural. For the purpose here, I am seeking a particular understanding of sense of place theory as it relates to natural settings, tourism and child place attachment. These three areas of place-based research seem the most fitting for an examination of connection to a place that is: a) visited rather than part of a child’s everyday life; b) in a park focused on natural surroundings; and c) child centered. The research areas of natural resource management and environmental psychology address these topics, and the associated researchers define sense of place as made up of place attachment and place meanings (Kudryavtsev,

Stedman & Krasny, 2012).

### *2.6.1 Place Attachment*

Place attachment describes the relationship people have with places (Ramkissoon, Smith & Weiler, 2013; Ramkissoon & Kneebone, 2014). Altman and Low (2003) define place attachment as “attachments to people, ideas, psychological states, past experiences, and culture” (p.11). Derr (2001) describes place attachment as a subset of sense of place referring to the emotional meanings people ascribe to certain places. Attachment research has taken a largely quantitative approach, with many researchers (Kaltenborn, 1998; Kyle et al., 2003; Moore & Graefe, 1994; Vaske & Korbin, 2001; Williams et al. 1992) using scales of place identity and place dependence to define place attachment, while other researchers also include place affect and place social bonding (Ramkissoon et al., 2013).

Within environmental psychology and environmental management, researchers have looked at processes that lead to recreationalists’ attachment to settings. Others have looked at the connection between sense of place attachment and environmental behaviours (Kaltenborn & Bjerke, 2002; Larson, Freitas & Hicks, 2013; Ramkissoon et al., 2013; Vaske & Korbin, 2001). Bricker and Kerstetter’s (2002) study on the varied meanings whitewater recreationalists attach to place, concluded that they would not have gained the same level of insight had they used traditional measures such as place dependence and place identity. Brown and Raymond (2007) measured attachment using a psychometric place attachment scale and measured landscape values using a map-based measure. After comparing the measures, the map measure of place meanings was seen to be equally successful at predicting attachment and it provided richer, place-based information for land use planning.

### *2.6.2 Place Meanings*

“Place meanings refer to the values and symbols placed on the landscape” (McInnes, 2010, p.31). They are the building blocks of attachment, satisfaction and behavior. Stedman (2002) found that place meanings were the most appropriate place measure for defining characteristics of the physical environment. Although place meanings are more localized than place attachment, they are more difficult to measure because potential sources of meaning for any given place are numerous (Young, 1999). Stedman (2002) suggested that although the development of place meanings is not as well understood in comparison to other place value definitions, clear quantifiable models provide insights in how they are formed.

Young (1999) looked at tourists’ use of parkland in Australia and found evidence to suggest that preconceived notions about the place contribute to one’s place meaning while actual experience of place does not significantly affect place meanings. McInnes (2010) used sense of place theory to evaluate interpretive material at Waterton Lakes National Park. While she acknowledged that Young’s (1999) emphasis on pre-visitation variables may be valid, she felt it was still important to influence place meanings for the visitor during his/her visit. For the purpose here, I acknowledge that sense of place is a complex topic and there are a number of place meanings dependent on pre-visitation factors. However, my aim is to address those meanings that are identified during the visitors’ time in the location.

### *2.6.3 Sense of Place & Children*

Many factors contribute to developing sense of place in children including children’s experience, family experience, and community (Derr, 2002). Several

researchers agree on the multidimensionality of children's sense of place (Derr, 2002; Hartt, 1979; Lim & Barton, 2010). For children, sense of place is dynamic and constantly changes and evolves with new experiences. To provide places that are meaningful to children, we need to first understand what it is about places that cause children to form an attachment. A transactional model has been popular when examining children's sense of place as it takes into consideration both the "context and process of transaction" (Lim & Barton, 2010). The context piece is especially important to consider given that current research is not focusing on the relationship a child has with everyday places he/she frequents but rather a place visited on vacation, within a limited number of times. For the purpose here, I define children's relationship with place as 'sense of place' because this construct has been used for children. Although this terminology has only been used to describe children's relationship with places in an everyday context, I believe it can be extended to places they visit as it has been done with adults (Bricker & Kerstetter, 2002; Brown & Raymond, 2007; Gunderson & Watson, 2007; Klatenborn & Williams, 2002; Schroeder, 2002). What is being measured is a 'sense of place in the park', not the child's overall sense of place. While acknowledging that place meanings that contribute to sense of place are multidimensional in nature, I only focus on those which occur within the confines of the park or other outdoor places that the youth in this study indicate as being special.

Children's sense of place in nature has been studied in relation to natural spaces around a child's home or neighborhood. In the field of environmental education, in regards to sense of place related to natural experiences, research tends to focus on evaluating environmental-based programming and fostering stewardship (Ernst, T., 2011;

Kudryavtsev, Kransy, Stedman, 2012; Semken & Freeman, 2008). I chose to spend more time focusing on research in environmental psychology and resource management due to these fields better encapsulating children's place meanings in outdoor recreation areas. In Derr's (2001) doctoral dissertation, she sought to work with children who lived in an area where they would have regular contact with nature so that sense of place could be looked at in an environmental context. Therefore, she could examine the importance of different factors of the natural world in developing a sense of place. She found that sometimes children's learning of care and respect for plants and animals is tied to a larger land ethic, and sometimes it is not. There were children who demonstrated a sense of place but did not identify nature within their special places. This result is related to "the web" of cultural place (Derr, 2001), when children live in and experience a place where nature and culture are integrated into a way of life. This is important as Derr (2001) demonstrated that sense of place is not the same as having a connection to nature. Thus, sense of place and connection to nature are measured differently.

## ***2.7 Measuring Sense of Place***

### *2.7.1 Research Methods Used with Children*

The literature on methods to identify sense of place in children tend to involve traditional methods such as interviewing, and in recent years more creative, innovative, participatory methods such as videography, photography, mental maps, drawings and guided walks (Barker & Weller, 2003; Trell & Van Hoven, 2010). Such methods have been used in an attempt to better engage children in place-based research (Trell & Van Hoven, 2010). While interview methods are only ideal with children who are quite articulate, methods such as videography, photography and mental maps are attractive to



children who communicate in different ways (Barker & Weller, 2003). These methods allow participants to have a more sensory experience, helping to elicit memories of the place (Trell & Van Hoven, 2010). A drawback with more creative methods is that analyzing the data can be time consuming and it is possible certain findings might be “overemphasized as meaningful” (Trell & Van Hoven, 2010, p.101). Giving the child choice of methods or having a more traditional method such as interviewing paired with a newer method results in richer data as it allows for a more inclusive means of communication for different children (Barker & Weller, 2003; Roe, 2006; Trell & Van Hoven, 2010). This combination of multiple methods is called the mosaic approach, in which traditional and participatory methods are both used so that the child has multiple ways to share their meanings (Baird, 2013). In addition to allowing the child to express their feelings for a place in their own meaningful way, children are more engaged with a research task they deem to be fun. While quantitative methods have been less popular for research on children, Barker and Weller (2003) argue there is a place for quantitative methods such as questionnaires in child research. As these scholars suggest, “Although they may not allow child-friendly communication to the same extent, they are invaluable in providing large scale information for children’s advocates in the policy process” (p.50).

Sense of place research with children has focused on places that are permanent fixtures in children’s lives such as school, home and their neighborhood. I argue that it is possible for children to develop a sense of place for places they have spent limited time, such as parks, because studies have examined children’s satisfaction for places they visit. To measure which factors are most important to children in developing a sense of place

in a park, research on children's sense of place in their everyday environments and adult's sense of place in visited natural settings has been considered. When studying children's attachment to place, it is clear qualitative methods are favoured. Children need to express their feelings toward a place in a way they feel comfortable rather than having pre-determined options to define the meaning for them. Purely quantitative methods are often too restrictive to really understand a relationship to place from a child's perspective. Methods such as surveys often have trouble holding a child's attention. As previously mentioned, methods such as drawing, photovoice and interview techniques have been popular for ascertaining sense of place in children. However, these methods are time consuming and result in a smaller sample size, which makes the results less reliable. As a result, I decided to develop a survey in the form of an activity booklet for assessing sense of place specific to a child's park visit. The instrument is designed to be fun and allows children to answer questions through writing and drawing.

### *2.7.2 Selecting Place Meaning Categories*

To determine which place meaning categories to include in the activity booklet I considered research on natural resource management (Schroeder, 2002; Brown & Raymond, 2007; Klatenborn & Williams, 2002; Gunderson & Watson, 2007) recreation (Bricker & Kerstetter, 2002) and tourism studies (Young, 1999), focusing on the place meanings and values adults ascribe to natural landscapes. I then compared the place values that are repeated in the literature with those that have been identified in children's sense of place research in environmental psychology.

Klatenborn and Williams (2002) and Young (1999) both looked at the place values tourists ascribe to natural settings, comparing tourists and nearby residents of a

national park, finding that residency and repeated visitation had limited effects on the type of place meanings participants mentioned. Young (1999) found many preexisting factors contribute to developing place meanings by tourists such as motivations for travel, previous travel history, destination preferences, psychological motivations for travel, the type of travel, and place of origin. Gunderson and Watson (2007) considered place meanings ascribed within a national park, finding that people could deem a place important even if they had never visited it. These findings support the argument that people can have a sense of place for somewhere they visit infrequently or only once.

Brown and Raymond (2007) studied the relationship between place attachment and landscape values. Place attachment was measured using a psychometric scale, which has been a popular measure in environmental psychology. Klatenborn and Williams (2002) also used a similar psychometric scale to measure the strength of attachment of park features; they used a survey containing Likert scale questions to assess the nature of attachment. Brown and Raymond (2007) took a different approach in identifying landscape values, with the use of a map-based measure. They provided participants with 12 predetermined landscape values with accompanying sticker dots, each containing a different importance rating, ranging from 5 to 50 points. Survey participants placed any combination of landscape value sticker dots on a map to indicate both the location and importance of the value. After conducting statistical analysis comparing the items on the psychometric attachment scale and the landscape values map scale, many of the landscape values predicted place attachment so that the map measure not only told the nature of attachment but also the strength. This result suggests that the psychometric place attachment scale is not the only approach to assess place attachment and there is

validity in looking at place meanings to determine place attachment.

Bricker and Kerstetter (2002) looked at how place attachment can affect one's experience while participating in nature-based tourism activities, finding that the place meanings participants described overlapped. They labeled these overlapping constructs as base dimensions and used themes as a basis for further exploration. They found sub-categories within these base dimensions that further explained special place meanings. They felt they would not have gained this kind of insight using traditional measures such as psychometric measures of place attachment that measure place dependence and place identity (Moore and Graefe, 1994; Williams, Anderson, McDonald & Patterson, 1995; Williams and Roggenbuck 1989). This conclusion suggests the necessity for a design that allows for more personal choice than the psychometric place attachment approach.

Schroeder (2002) had people identify their special places in nature and considered what meanings, values, experiences and memories made the place valuable to them. He used an open-ended qualitative survey approach and came up with a list of themes based on participants' answers. He found a number of sub-themes within the large overarching themes. His findings demonstrate the need for open-ended measures when determining place values.

Of the studies reviewed, Gunderson and Watson (2007), Bricker and Kerstetter (2002) and Schroeder (2002) chose qualitative methods, while Klatenborn and Williams (2002) and Brown and Raymond (2007) used quantitative methods and Young (1999) chose a mixed methods approach. Place meanings which were identified in the 6 studies are summarized in Table 2.3, illustrating a great deal of overlap in the identified place meanings; the conclusions give credibility to a quantitative approach in which place

categories are defined but special meanings within those categories are open ended.

Table 2.3: Summary of Nature-based Recreation Place Meaning Categories found in the Literature

	Schroeder (2002)	Brown & Raymond (2007)	Young (1999)	Klatenborn & Williams (2002)	Bricker & Kerstetter (2002)	Gunderson & Watson (2007)
Natural/ Wilderness	✓	✓	✓	✓	✓	✓
Heritage	✓	✓	✓	✓	✓	✓
Beauty / Aesthetics	✓	✓	✓		✓	✓
Therapeutic	✓	✓	✓		✓	
Social ties	✓			✓	✓	✓
Exciting	✓		✓		✓	✓
/New Family	✓	✓		✓		
Significance						
Recreation		✓		✓	✓	
Remoteness	✓		✓		✓	✓
Intrinsic Value	✓	✓				✓
Ecological Importance		✓	✓			
Spiritual		✓	✓		✓	
Educational		✓	✓		✓	
Preservati- on						
Gratitude	✓		✓			
Uniqueness			✓			✓
Cultural				✓		✓
Access					✓	✓

Note: Place meanings which were not repeated in more than one study were not included.

Natural/wilderness and heritage were place values that were recurrent across all studies. Additionally, beauty, social ties, excitement, family, recreation, remoteness, intrinsic values, ecological importance, therapeutic, spiritually valuable, educational importance, preservation, gratitude, uniqueness, cultural and access were also factors that overlapped. To decide which place meaning categories were the most appropriate for this

study, literature on children's sense of place within the field of environmental psychology was considered.

Although limited research has been conducted on children's sense of place in visited natural attractions, I drew from literature in children's home/community environments in cases where researchers have tried to include the importance of nature in their analysis. Derr (2001) examined children's sense of place and place attachment in northern New Mexico. She studied children who live in both urban and more rural areas to get a sense of how nature contributes to developing a sense of place. Through qualitative analysis, she examined children's favourite places, exploring places, and places children use for emotional needs. Reasons for favourite places were based on activities, place features, togetherness and mental well-being. Within these themes, natural places, places with plants and animals, places with family and friends and commercial places were most commonly mentioned. Additionally, culture and family history, access/mobility and social stability appeared to play an important role in determining the value of places. These place categories are similar to the functional place categories defined by Hart (1987), which are: land use places, social places, commercial places and aesthetic places.

Considering which categories were repeated in Table 2.3, while also realizing that children will not differentiate between some of these categories, and lastly taking into consideration the factors that Derr (2001) and Hart (1987) found to be prevalent in sense of place research with children, I decided to use the following 8 place meaning categories to include in the activity booklet: 1) nature 2) family 3) historical importance 4) friends 5) beauty, 6) exploration, 7) activities and 8) accommodation.

The reason for including the last category ‘accommodation’, although not a recurrent theme in Table 2.3, is that it is an aim of this research to capture children’s opinion of diversified accommodation types.

As an added measure to see if certain categories are more indicative of sense of place, children were asked to rate the top three place meanings they felt were the most important in their experience of place.

## **2.8 Chapter Summary**

It is clear that there is an issue with children being disengaged from the natural world. The Canadian Parks Council acknowledges the reality of this issue as they have noted a decline in young visitors to parks across Canada. To attract young people to parks an understanding of what connects them to place is necessary; sense of place research and more specifically, an investigation of park-based place meanings could help to inform park staff what experiences and park features are most important to children. Of further considerations their sense of connection to nature and how this relates to park experiences also contributes to their likelihood to respect and care for parks in the future. My research looks at what place meanings children ages 8-12 ascribe to parks, while comparing these place meanings to their connection to nature.

## **3.0 METHODS**

### **3.1 Introduction**

*Age 7 (1995): Weaving through apple trees, barreling full speed ahead down the slanted hill in front of my best friend's house, forest surrounds the grassy plain of her front yard. We must travel fast to avoid being seized by the goblins that lurk in the shadows of the pines. Arriving safely, we catch our breath slumping into the chairs we've crafted from strategically placed fir boughs. We stuff crab apples in-between the crevices of large tree roots, our makeshift kitchen for days where we enact the lives of foraging squirrels. Our own private forest oasis, where we can be anything we want from lumbering elephants, to racing gazelles; a place of uninhibited imagination.*

As a child, the forest was my playground. Given I have a parent who worked in a Canadian national park there were no shortages of park visits, outdoor adventures or camping excursions in my childhood. Working as a camp counselor in my adolescent years, I came to appreciate the importance of children spending time outdoors and developing a connection to the natural environment. It led to me wanting to learn more about what experiences nurture a child's connection to nature.

This chapter provides the rationale for a mixed methods approach, the context for the study area and presents the research questions. A description of the pre-testing of the survey instrument and subsequent modifications made based on the results is provided. Sampling, the data collection process and how the quantitative and qualitative methods were analyzed are also explained.

### **3.2 Research Questions**

Review of the literature has led to the formation of three research questions:

- 1) What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?
- 2) What place meanings are associated with a stronger connection to nature?



- 3) Do children who indicate tree houses as their accommodation of choice have a stronger connection to nature than those that choose other kinds of park accommodation?

### **3.3 Methodology: Mixed Methods Approach**

This research requires a pragmatic approach. I chose a mixed methods study to allow for more generalizable results through quantitative analysis, but with the added depth of qualitative analysis - capturing children's voice through written excerpts and drawings. A survey approach allowed for a larger sample size, ease of distribution and analysis, along with more generalizable results. Adults' experience of natural places is different from that of children; this is why it is important to work with children directly (Sebba, 1991). Additionally with sense of place research, and especially in the case of children, it is important not to be restrictive. For this study, I presented children with questions around 7 place meanings that were identified in the literature (i.e. family, nature, friends, exploration, activities, beauty and accommodation) The place meaning category 'historical' was deleted from the list due to the results of the pre-test. Similarly, Young (1999) prescribed a number of place meanings asking participants to rate the meanings on a 5-point Likert scale. Young (1999) took place meanings identified through an interview process and had participants rate the importance of each meaning on a 5 point Likert scale. For this study, I assumed the general meanings that would be identified but allowed for children to provide specification within the meaning. For example, for the category 'beauty', they could describe exactly what it was about that outdoor place that made it beautiful to them, adding a depth of findings that would not be possible if I had not included the qualitative component to the survey. The approach also

allowed the response to be expressed creatively through writing or drawing. Quantitative data were collected on sense of place in the park by having participants rate the 7 place meanings. Connection to nature was also assessed via quantitative data gathered through the 16 questions that comprised the Connection to Nature Index (CNI). Thus, my study involved both quantitative and qualitative analysis.

### **3.4 Operationalization of Scales**

The data collection instrument (activity booklet) consisted of two separate scales, one that assessed a child's connection to nature; the other assessed sense of place, with a couple of added preliminary questions on park visitation. For measuring connection to nature, the pre-existing CNI scale was used, as described in chapter two (2.5). For measuring sense of place in a park, no existing quantitative measure was appropriate for children's use, so, based on a review of the literature, I chose relevant place meanings to form the framework of the survey (see chapter 2.7). Although two different scales were used, they were administered as one instrument. The survey instrument was assembled in an activity-style booklet (See Appendix A). To capture a large sample size, I decided to survey children at school. They were asked to reflect on a past park experience while completing the survey. To make the survey more inclusive to this larger audience, children who did not visit a park were asked to answer the place meaning questions in relation to another visited outdoor venue such as their family cottage. A shorter questionnaire was also developed for the child participants' parents. Questions on the parents survey included asking about visitation frequency, accommodation preference, and demographic questions regarding their child's age, grade, gender and community of residence.

### 3.5 Study Area

Thunder Bay (Figure 3.1) was the chosen study area as there are multiple parks within 80km of the city. Thunder Bay has a population of approximately 109,140 and is located in Northwestern Ontario on the shores of Lake Superior, surrounded by Canada's boreal forests and the Canadian Shield (City of Thunder Bay, 2016a). It is the most populous community in Northwestern Ontario (City of Thunder Bay, 2016a). The hunting and fishing culture is strong and many families own camps where they spend the summer months (a camp in this context refers to a plot of land in a wooded area containing a cottage or trailer) (Merriam-Webster Dictionary, 2016). The city's slogan 'Superior by Nature' (City of Thunder Bay, 2016a) highlights that nature is an integral part of many Thunder Bay residents' identity. Sleeping Giant Provincial Park and Kakabeka Falls Provincial Park are within 80 km of Thunder Bay and were used as examples in the activity booklet (Figure 3.1).

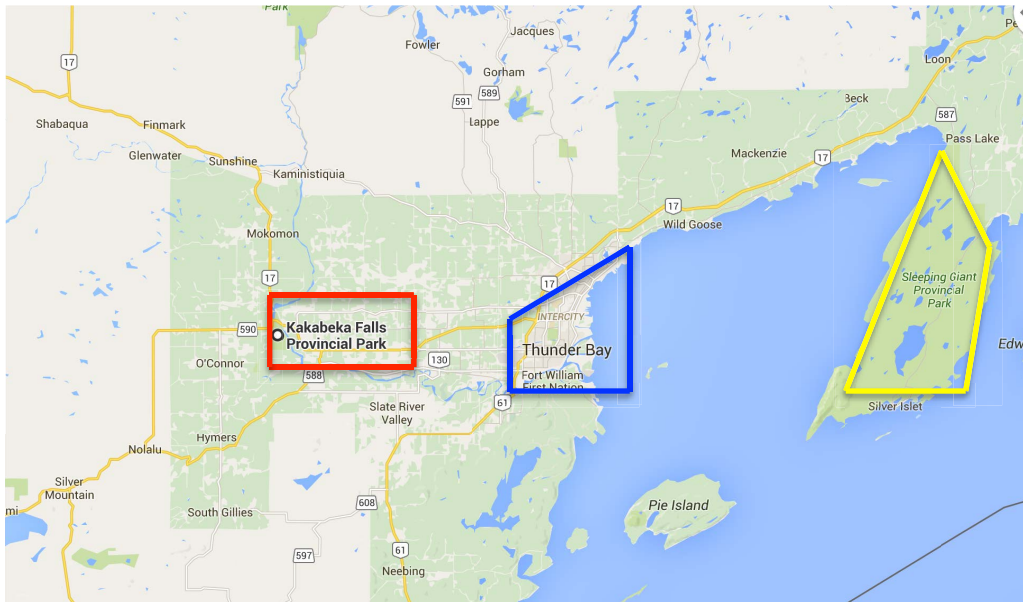


Figure 3.1 Map of Study Area: ■ = Thunder Bay, ■ = Kakabeka Falls Provincial Park, ■ = Sleeping Giant Provincial Park. Source Google Maps (2016).

Sleeping Giant Provincial Park is located on the Sibley Peninsula in Lake Superior. It is approximately 80 km east of the city (Figure 3.1). Its name comes from a rock formation that causes the southern part of the peninsula to have the appearance of a human lying down (City of Thunder Bay, 2016b). The park's landscape is made up of boreal forests and is part of the Canadian Shield (Ontario Parks, 2016b). The park is situated on a peninsula in Lake Superior and borders the Lake Superior National Marine Conservation Area. The park offers activities such as camping, fishing, hiking, biking, birding, canoeing, swimming and skiing (Ontario Parks, 2016b).

Kakabeka Falls Provincial Park lies approximately 30 km west of Thunder Bay (Figure 3.1). It is known for waterfall viewing, as it is home to the second highest waterfall in Ontario (Ontario Parks, 2016c). A boardwalk wraps around the top of the falls, which is a prime location for viewing the waterfall and gorge below. It has historical significance as it was part of the historic route of the Voyageurs (Ontario Parks, 2016c). Park activities include: hiking, biking, camping, skiing, birding and swimming (Ontario Parks, 2016c).

### **3.6 Participants**

Participants for this study were children between the ages of 8 and 12 years old as Sobel (1993) and Hart (1997) have identified middle childhood as the most desirable age for research on how children think about their environment. Younger children tend to focus on their “immediate environment of family and home” (Sobel, 1993); this is not to suggest that younger children do not have meaningful relationships with places but rather the challenge lies in their ability to articulate these thoughts/feelings (Read, 2007). Another factor that should be considered in deciding an acceptable age range is the

appropriate age to assess connection to nature through the CNI. Previous research (Bragg et al., 2013) has deemed this age to be between 8-12 years of age, as older participants found the language to be too simplistic and younger children found it to be too complex.

### **3.7 Pre-test**

A pre-test was required to test the effectiveness of the language used in the activity booklet in ascertaining sense of place. Although previous studies have evaluated the usability of the Connection to Nature Index, it needed to be reassessed here. In Bragg et al. (2013), it was tested with children in the UK, so Canadian children who may have a different relationship with nature needed to be tested. Also, participant fatigue is another consideration, so children were questioned on the appropriateness of length. Participants consisted of a parent and their child/children.

Pre-test participants were recruited through convenience sampling, by word of mouth in the community of Nipigon (a town located about 100km east of Thunder Bay). Family interviews were chosen over focus groups because given the age of the children involved, larger groups would have had a higher potential for chaos and it would have been more likely that the parents would have taken charge and the children's voices would not have been heard.

Arrangements were made to meet with participants in a place that was convenient for them (either their home or the researcher's home). At the beginning of the family interview, the parent and child/children were given an overview of the study (See Appendix C) and asked to sign consent forms (See Appendix D). I took notes of any questions the child or parent had while filling out the survey. Once both child and parent had completed the survey, they were asked questions on the usability of the instrument

(See Appendix E). A total of 7 families participated in the pre-test, consisting of 3 boys and 6 girls ranging in age from 9-12 years old. All of the accompanying parents were mothers. The children typically took between 15-35 minutes to complete the survey.

### *3.7.1 Results of the Pre-test*

I scanned the interview and observation notes for patterns and concerns. If more than one child and/or parent expressed concern or difficulty over an aspect of the survey, I made changes to remedy the issue. The pre-test led to fine-tuning of some of the wording of the activity booklet, as certain sentences were hard to understand. A number of children found the question based on park history difficult to comprehend. This question was meant to represent the place meaning category 'historical importance' and was worded: "Pretend you are a time traveler. Write down something you know about the history of the park / outdoor place." I decided to delete this question / place meaning category from the survey booklet as too many children had difficulty both understanding the question and coming up with an answer.

The design of the place meaning ranking system was confusing for children. It was worded as follows: "Of all of the things you did or saw in the park / outdoor place, which was the most important to you? Show us the most important one by placing a #1 in the circle beside the corresponding question. Place #2 by the second most important question and a #3 by the third most important question." This task proved especially difficult for younger children. I decided to break the question up into three parts to clarify; the new question read, "From the list below circle your three favourite things about your visit to the park OR outdoor place." I listed the 7 place meanings, followed by a follow-up question which read: "Of the 3 you circled which is the most important to

you?” followed lastly by, “Of the 3 you circled which is the 2<sup>nd</sup> most important to you?”. The third most important was inferred given the circling. Children appeared to have no difficulties with the new format. There were no concerns brought to my attention regarding the adult questionnaire or the CNI.

### **3.8 Sampling**

Data collection took place during June 2014 with children ages 8-12 who attended school in Thunder Bay. A sample of the child participants’ parents also took part. The superintendent for elementary schools within the Thunder Bay Catholic School Board was approached for permission to contact principals for permission to conduct the study within their schools. Approval was granted and I contacted principals by telephone asking for permission to survey their grade 3-6 classes. Six principals agreed for their schools to participate in the study, all of which are located within the city of Thunder Bay.

### **3.9 Data Collection**

In June 2014, I visited the 6 schools and gave study packages to school principals to be distributed to teachers who taught grades 3-6. The packages included the following: principal cover letters (See Appendix F), teacher cover letters which explained the study and contained instructions for distributing the activity booklet (See Appendix G), parent cover letters (See Appendix H), consent forms (See Appendix D), updated child surveys (See Appendix I) and adult surveys (See Appendix J). Teachers sent a parent cover letter, consent form and adult survey home with each of their students. Approximately 900 surveys were distributed between the 6 schools, of which 460 were completed. Parents were given a week to complete and return the forms to the schools. After a week had

passed, students were asked to fill out the child survey as a classroom activity. Given that the study was low risk in nature, if a parent had not given consent for their child to participate in the research, the child was still asked to complete the survey so as not to ostracize anyone.

I went to each school to pick up all the questionnaires during the last week of school in June. The students' surveys contained a front page with their name, which allowed me to match the consent forms accordingly. After matching consent forms I tore the front pages off of all the surveys and wrote a participant number on each booklet to protect confidentiality of the respondent. Originally the plan was that after I had paired the consent and adult surveys with the child surveys, those that did not have a consent form would be discarded and not used for data analysis. However, of the 460 completed surveys, only 135 had an accompanying consent form. I approached the Lakehead University Ethics Board with the request to conduct analysis on surveys that did not have accompanying consent forms. The Board granted permission to use the surveys provided the school board superintendent approved, which he subsequently did.

### **3.10 Quantitative Data Analysis**

The first research question (What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?) resulted in seven items being ranked from one to four. Therefore, a Friedman test was used as it is a non parametric equivalent to a repeated measures ANOVA. Statistical significance of the test was determined by  $P < 0.05$ , which signifies that the ranks of the seven items were different from each other. If there was a statistically significant difference, pairwise differences were assessed with Wilcoxon Matched Pairs Signed-Rank tests. Given the



multiple comparisons involved with this test, statistical significance between pairs was assessed by  $P < 0.05 / 21$  (a Bonferonni correction for multiple comparisons).

A Spearman rank-order correlation coefficient was used to answer the second research question ‘What place meanings are associated with a strong connection to nature?’ This test measures the strengths of association between two ranked variables. This test can be used when the assumptions of the Pearson Product Moment correlation coefficient are markedly violated and also when there is a monotonic relationship between variables. Statistical significance was assessed by  $P < 0.05$ .

A Kruskal-Wallis H test was conducted to see whether children’s choice of accommodation (tent, camper, yurt, cabin, oTENTik and tree house) had an effect on their mean CNI score. A Mann-Whitney U test was used to answer the third research question (Do children who indicate tree house accommodation as their accommodation of choice have a stronger connection to nature than those choosing other kinds of park accommodation?). If the differences in mean connection to nature scores were significantly different, ( $P < 0.05$ ), I concluded that children choosing tree house accommodation had a greater connection to nature than children choosing traditional camping methods.

### **3.11 Qualitative Data Analysis**

I began my qualitative analysis by typing up all of the written activity booklet answers into seven word documents, one document for each of the seven questions regarding the place meanings, which were identified in the literature (exploration, nature, beauty, favourite activity, family, friends and accommodation) (Bricker & Kerstetter, 2002; Brown & Raymod, 2007; Gunderson & Watson, 2007; Klatenborn & Williams,

2002; Schroeder, 2002; Young, 1999). This allowed for easier organization of the data without destroying the original activity booklets. It also made it more convenient to read through and identify which quotes were most indicative of themes and what the themes were within each place-meaning category. Responses that involved drawings were analyzed via the written description children were asked to provide underneath their picture.

I coded each document separately, as it was necessary given the volume of responses. For example for question 3 on the survey “Where do you like to explore in the park OR outdoor place?” I typed all participant answers for this one question in one word document and printed the pages. I cut each participant’s answer into an individual strip then took these strips and read them one by one, cutting up the written response, separating it by the multiple codes it contained. For example, for the following participant’s answer, “I like to explore the bushes with all the trees and bushes and leaves. I also like to explore the trails.” I cut the answer into two, the first part going into a pile of answers that related to plants, the second going into a pile related to trails, paths and hiking. I find something satisfying about looking at an expanse of paper strips containing participants’ thoughts; it’s like sorting and organizing a big puzzle.

Given the brevity of children’s responses, In Vivo Codes were assigned for the first round of coding (Saldana, 2009). For example when a child mentioned ‘woods’ those responses were sorted into one pile. I then placed the strip in a pile based on commonalities, so ‘woods’ would be paired with words that essentially meant the same thing, such as ‘forest’ and ‘bush’. I took a ‘splitter’ approach to coding (Saldana, 2009), dividing commonalities into the smallest codable moments the first time around. I found

as a detailed-oriented person, this method came naturally to me. Once I had coded all participant answers for question 3, and had the individual codes separated by piles, I counted the total number for each code. Of the pile relating to forest, I counted all the occurrences of times participants had cited 'woods', 'forest' or 'bush'. Then I put the answers in a plastic bag with a label so they would be easy to relocate if needed. By counting the occurrences of a particular code I was better able to point out in the results if certain codes were cited much more frequently in comparison to others, and also identify if certain categories or themes were more prevalent. I did this for all 7 questions relating to place meanings.

A secondary assessment of the data after the initial coding led to further classification, as I was then able to identify larger categories and themes by employing a "lumping" method for related codes (Saladana, 2009). After writing down all of the codes for each question, I looked for commonalities to organize them by category and then one last time by theme. I did this for the seven questions separately, generating separate lists of codes, categories and themes for each individual place meaning. Lastly I scanned the themes resultant of the 7 place meaning categories, identifying groupings that were recurrent among the questions. This resulted in identifying the overall qualitative themes of the research.

## **4.0 QUANTITATIVE RESULTS**

### **4.1 Chapter Introduction**

*Age 8 (1996): Sixteen, seventeen, eighteen, I count the number of particles on my milk carton slab. There is power in numbers and in the case of my science experiment, more particles equals more pollution. I have made a homemade mechanism to record air pollution in different locations around my town. I trek around the neighborhood poking my head into the grassy alcoves of backyards, at school on the outskirts of the playground, and in the parking lot of the community store. I am collecting all of the evidence needed for my experiment. I have always enjoyed the way numbers can bring power to your results.*

The results of the quantitative analysis are divided into the 4 sections comprising this chapter. First, response rates and demographic information about the participants are presented. This is followed by a section that addresses both child and parent participants' affinity for the outdoors and park visitation. The third section examines the type of accommodation used by children, and parents and children's accommodation preferences. The final section seeks to address the overall research questions.

### **4.2 Response Rates**

It is important to note that for all of the demographic questions, data were only collected for a smaller sample of the total number of child participants. This is because demographic questions were only included in the parent survey form, which was completed by a portion of the child participants' parents (n=133).

### 4.3 Demographics

#### 4.3.1 Age

The children in the study were between 8 and 12 years old. The age of participants is only known for a sample (n=133) of the participants. As shown in Table 4.1, 9 to 11 year olds are more represented which is sensible as 8 and 12 year olds are less frequent among grade 3 to 6 at the end of the school year when the sampling took place.

Table 4.1: *Age Distribution (%) of Respondents*

Age (n=133)	Percentage of Respondents
8 years	15.0
9 years	27.8
10 years	18.8
11 years	23.3
12 years	15.0

#### 4.3.2 Grade

The grade of participants is only known for a sample (n=133) of the participants. As shown in Table 4.2, the largest percentage of participants from the sample were in grade 3 while grade 4 students were less represented.

Table 4.2: *Grade Distribution (%) of Respondents*

Grade (n=133)	Percentage of Respondents
3	33.1
4	15.0
5	29.3
6	22.6

#### 4.3.3 *Community of Residence*

The residence of participants is only known for a sample (n=133); while all of the participating schools were in Thunder Bay, the child’s place of residence may not be as children are bussed into school from surrounding rural communities. The majority of respondents were from Thunder Bay (See Table 4.3). It is important to note that all 4 communities are located near large tracts of forest, with Thunder Bay being the only urban centre.

Table 4.3: *Percentage of Respondents from Different Communities*

Place of Residence (n=133)	Percentage of Respondents
Thunder Bay	93.2
Kaministiquia	1.5
Gorham	3.8
Slate River	1.5

#### 4.3.4 Gender

The gender of child participants is only known for a sample (n=133). There was an approximately equal representation of gender in the sample; 47.7% male and 52.3% female.

#### 4.4 Connection to Nature Index (CNI) Mean Score

The mean connection to nature score was 1.81 with scores ranging from 1 to 4.63. (SD=.52). N = 387, which tells us that the children in this study were quite well connected to nature (at 84% connected). Those that scored 3 and below were considered 'connected' and those that scored above 3 were considered 'not connected'.

#### 4.5 Affinity for the Outdoors & Park Visitation

On average the children in this study appear to be largely outdoors oriented. From a sample of n=131, parents reported the number of days their child plays outside per week (Mean = 5.9) and the number of hours their child spends outside per day (Mean = 2.6). Almost all (95.5%) parents reported that their child enjoys being outside in nature.

An increase in the number of days a child spent outside was moderately and positively correlated with an increase in participant's CNI score,  $r(115)=.239$ ,  $p < .05$ .

#### 4.6 Parks visitation for children (as told by parents)

For a subsample of (n=133), 99.2% of parents reported that their child had visited a provincial or national park (See Figure 4.1) and more than one-half had visited parks on more than 6 occasions (See Table 4.4).

Table 4.4 : *Parent Reports of Child Park Visitation*

# of Child Park Visits (n=120)	Percentage of Respondents
0 Times	0.8
1-5 Times	44.2
6-10 Times	24.2
11-20 Times	17.5
21+ Times	13.3

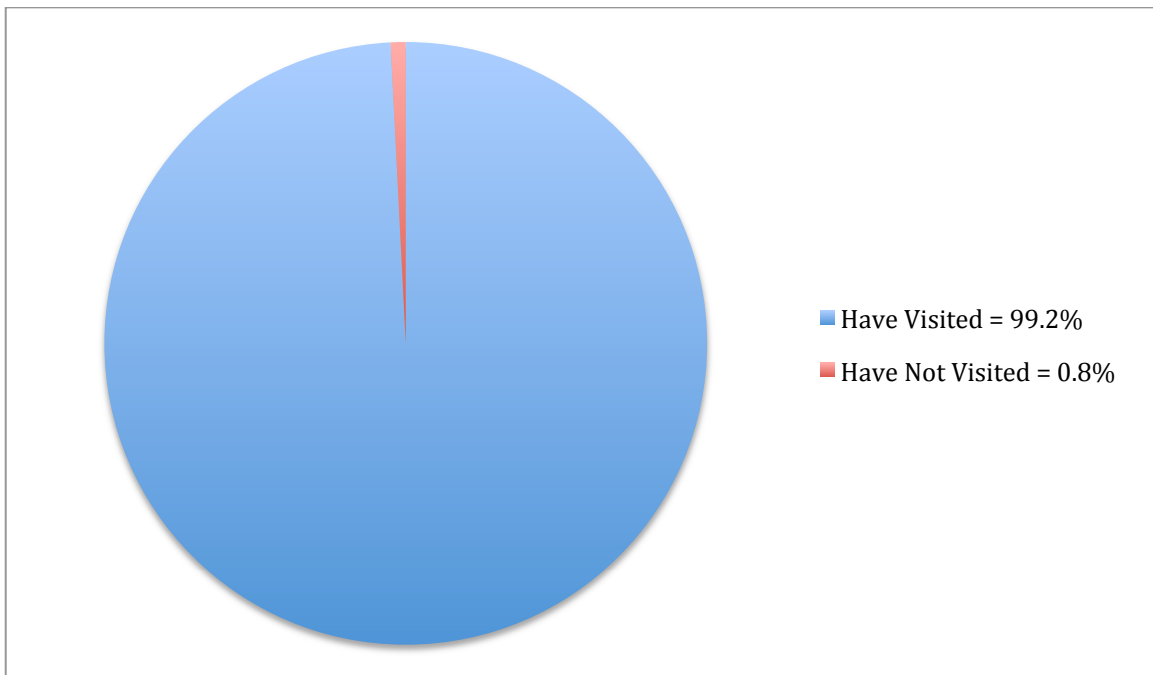


Figure 4.1: Percentage of child participants' parents reported as having visited a National or Provincial Park.



#### 4.7 Parent Park Visitation

As might be expected, and similar to children's visitation statistics, their parents also reported spending time in parks with 99.2% stating they had visited a national or provincial park (See Figure 4.2). Over one-third of these parents (36.9%) had visited national or provincial parks 21 times or more (See Figure 4.3).

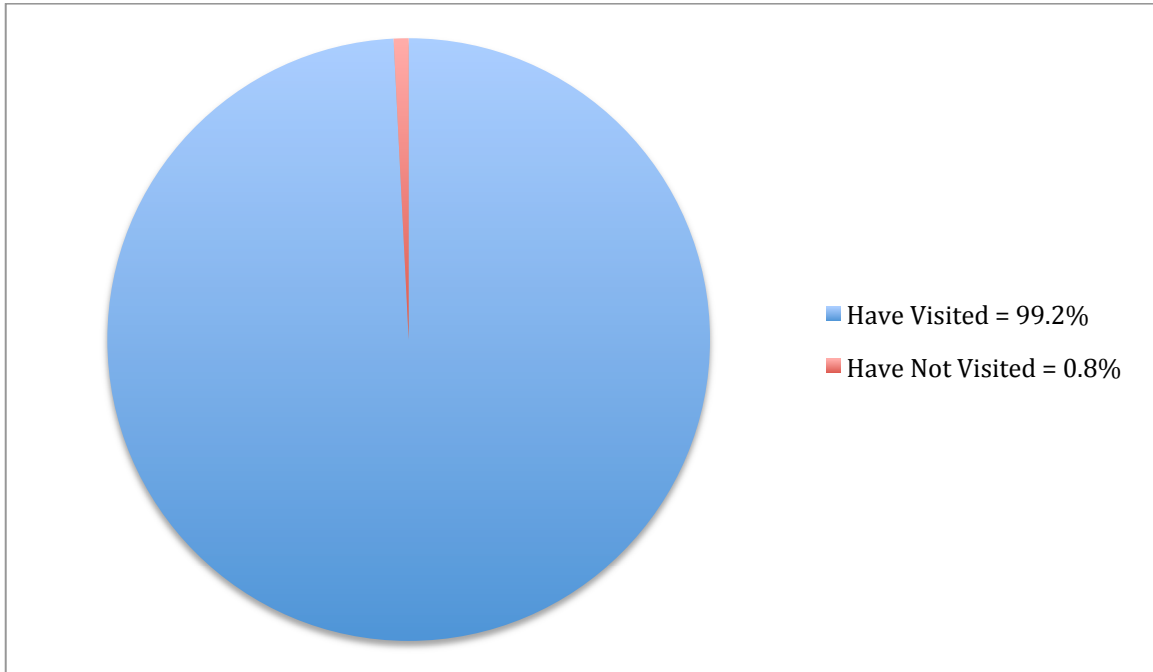


Figure 4.2: Percentage of parent participants who reported having visited a National or Provincial Park.

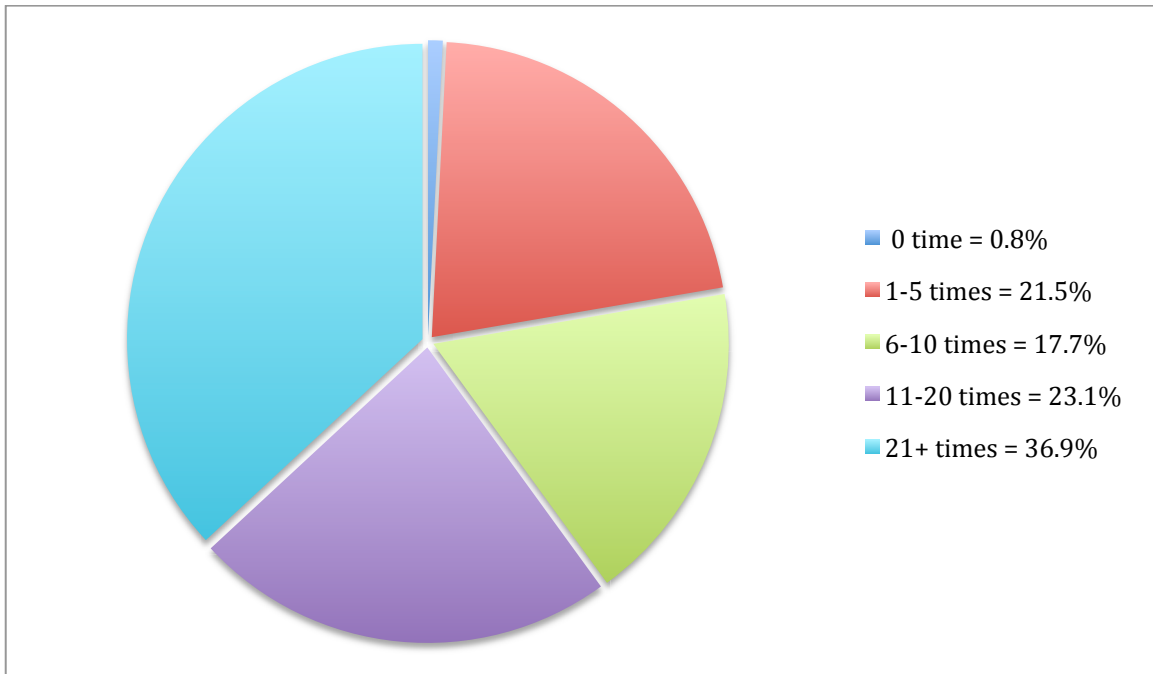


Figure 4.3: Percentage of times parent has visited a Provincial or National Park

#### 4.8 Park (or Special Outdoor Place) Visitation for Children (as told by children)

Of the (n=455) child respondents, 79.6% reported having visited a provincial or national park at least once (See Figure 4.4). For some children, there was a lack of understanding what is a park and the difference between national, provincial or municipal parks as (n=359) 12.3% reported names that were not actually provincial or national parks such as Chippewa park (which is a municipal park).

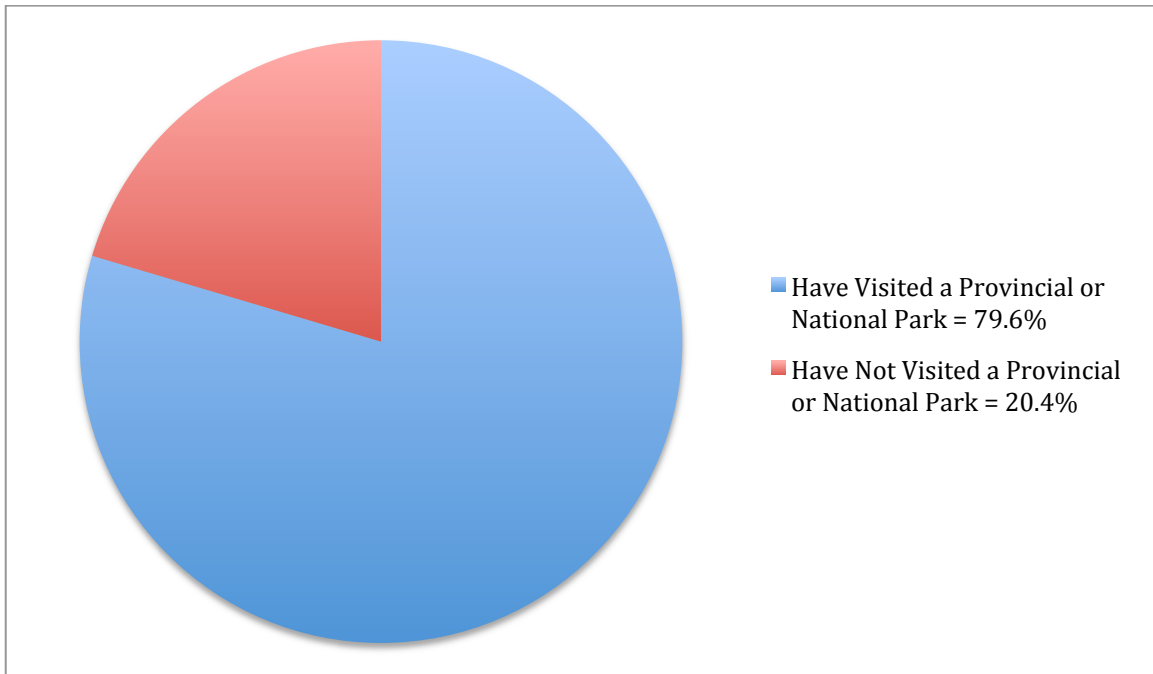


Figure 4.4: Percentage of children having reported Provincial or National Park visitation

Out of the parks visited, the most frequently cited parks were Kakabeka Falls Provincial Park and Sleeping Giant Provincial Park. As previously discussed, these parks are near Thunder Bay, and both were used as examples in the children’s activity booklet, which may have prompted children to favour them as their example. Of the responses, (n=354), 61% stated that the park they visited was Kakabeka Falls Provincial Park and 30.2% stated Sleeping Giant Provincial Park.

To include those children whom had not visited a park, participants were able to answer the survey in relation to a special outdoor place they had visited. Of those that chose to answer the questions about a special outdoor place, 26.5% (n=155) chose to use a cottage (camp in the local lexicon) as their example.

Of both the parks and special outdoor places visited, more than half of the visits reported by participants happened a year prior to completing the survey (See Table 4.5).

Table 4.5: *Child’s Last Visit to the Park or Special Outdoor Place*

Time of Visit (n=446)	Percentage of Respondents
Last Week	22.4
Last Month	15.0
During the winter	6.7
Last summer	40.8
More than a year ago	15.0

#### **4.9 Accommodation**

Of (n=119) parents surveyed, 77.3% said they would be more likely to stay overnight in a park if it offered one or all of the following accommodation options: yurt, cabin, oTENTik and tree house. Of (n=449) children surveyed, 63.3% said they stayed at the park or outdoor place overnight, while 36.7% did not. The most commonly reported accommodation during the child’s stay at the park or outdoor place was a camper, with 40% (n=446) of children citing this accommodation. Tent accommodation was the second most frequent at 25.4% (See Figure 4.5) and a cabin was the third (19.7%).

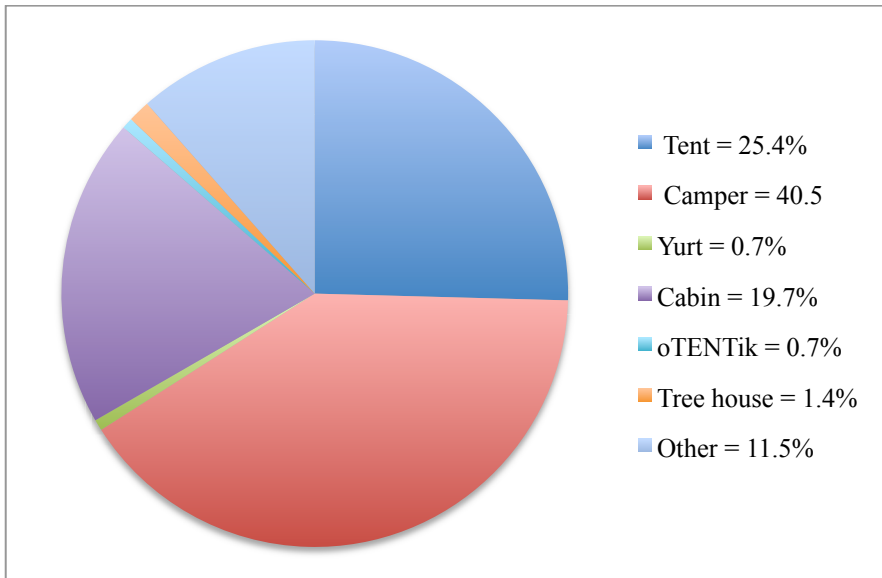


Figure 4.5: Percentage of Accommodation stayed in at the park or outdoor place

Of those participants that stayed overnight, 82.8% (n=302) reported that they enjoyed their accommodation. A breakdown of the types of accommodation used and whether or not the participant enjoyed using this accommodation is shown in Table 4.6.

Table 4.6: *Accommodation Enjoyment*

Accommodation Used	n	% Enjoyed
Tent	71	78.9
Camper	113	90.3
Yurt	2	100.0
Cabin	55	90.9
oTENTik	2	100.0
Tree house	4	100.0
Other	32	87.1

Participants were also asked what kind of accommodation they would like to sleep in on their next visit. The most popular accommodation types were a tree house at 30.8% and a camper at 27.9% (See Figure 4.6).

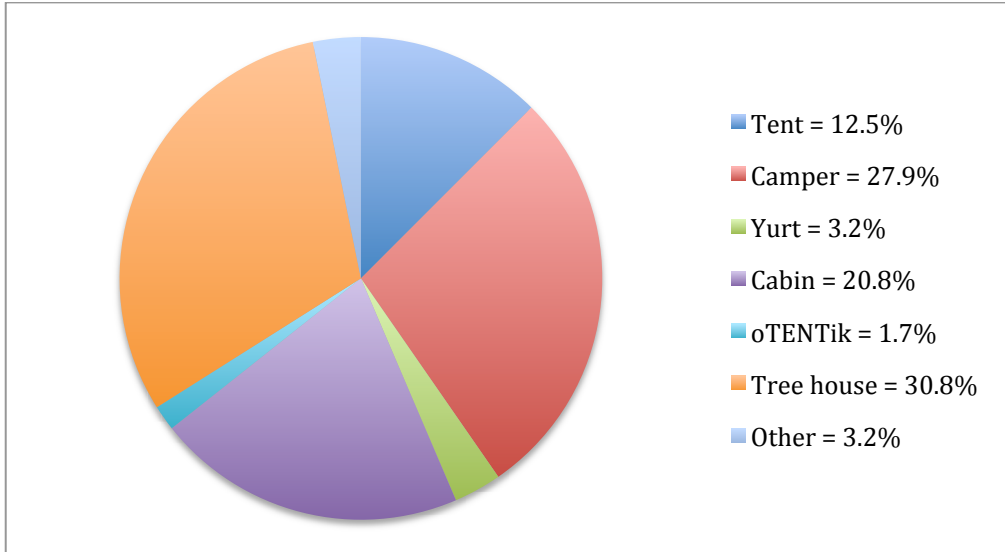


Figure 4.6: Percentage of preferred accommodation for the next visit

#### 4.10 Place Meanings and Sense of Place

To measure and analyze my first research question (*What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?*), a Friedman test was conducted to determine if there were statistically significant ( $P < 0.05$ ) differences in place meanings when developing a sense of place in a special outdoor place. There was a statistically significant difference in place meaning ranks,  $\chi^2(6) = 519.127$ ,  $p < .0005$ .

Of the 7 choices, ‘time with family’ was the most important to children, with ‘exploring’ being the second and ‘being in nature’ being the third most important (See Table 4.7). Given participants were only asked to provide ratings for their top 3 choices, during the Friedman test an average of 5.5 was automatically assigned to the remaining 4

tied ranks. This provides an explanation for why some mean ranks had a value higher than 4.

Table 4.7: *Mean and Median of Place Meaning Ranks*

Place Meaning Category (n=412)	Median (IQR)	Mean Rank
Time with Family	1 (1 to 4)	2.48
Exploring	3 (2 to 4)	3.36
Being in Nature	3 (2 to 4)	3.62
Time with Friends	4 (2 to 4)	4.29
Seeing Something Beautiful	4 (3 to 4)	4.56
Favourite Activity	4 (3 to 4)	4.59
Accommodation Choice	4 (4 to 4)	5.11

Post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied to the threshold for statistical significance, resulting in a significance level set at  $p < .0024$  ( $0.05/21$ ). There were no significant differences between the ‘Being in Nature’ and ‘Exploring’ place meaning categories ( $Z = -1.418$ ,  $p = 0.156$ ). There were also no significant differences between the ‘Favourite Activity’ and the ‘Seeing Something Beautiful’ place meaning categories ( $Z = -.180$ ,  $p = .857$ ). The similarities in these rankings will be further explored in the Discussion Chapter. The remaining 19 pairwise comparisons had significantly different ranks (Table 4.8).

Table 4.8: *Pairwise Comparisons of Place Meaning Ranks (Wilcoxon pairwise tests)*

Place Meaning Pairs (n=412)	Z Value	Sig. (2-tailed)
Being in Nature - Exploring	-1.153	.249
Seeing Something Beautiful – Exploring	-9.441	<.001
Time with Family - Exploring	-7.588	<.001
Time with Friends – Exploring	-5.175	<.001
Favourite Activity – Exploring	-8.674	<.001
Accommodation – Exploring	-12.030	<.001
Seeing Something Beautiful – Being in Nature	-7.903	<.001
Time with Family – Being in Nature	-8.615	<.001
Time with Friends – Being in Nature	-3.690	<.001
Favourite Activity – Being in Nature	-7.361	<.001
Accommodation – Being in Nature	-10.362	<.001
Time with Family – Seeing Something Beautiful	-13.457	<.001
Time with Friends – Seeing Something Beautiful	-3.954	<.001
Favourite Activity – Seeing Something beautiful	-.180	.857
Accommodation – Seeing Something beautiful	-4.578	<.001
Time with Friends – Time with Family	-10.887	<.001
Favourite Activity – Time with Family	-13.436	<.001
Accommodation – Time with Family	-14.618	<.001
Favourite Activity – Time with Friends	-3.884	<.001
Accommodation – Time with Friends	-7.255	<.001
Accommodation – Favourite Activity	-4.728	<.001



#### 4.11 Place Meanings and Connection to Nature

To measure and analyze my second research question, (*What place meanings are associated with a strong connection to nature?*), Spearman rank-order correlation coefficients were estimated to assess the relationship between mean Connection to Nature Index (CNI) scores and the 7 place-meaning categories (Table 4.9).

Table 4.9: *CNI Rank Scores*

Place Meaning Categories (n=358)	Correlation Coefficient	Sig. (2-tailed)
Exploring	.018	.734
Being in Nature	.236	<.001
Seeing Something Beautiful	-.023	.659
Time with Family	.056	.294
Time with Friends	-.120	.023
Favourite Activity	-.211	<.001
Accommodation Choice	-.011	.840

There was a positive correlation between the ‘Being in Nature’ ranking and the CNI mean score.  $r_s(356)=.236$ ,  $P < .001$ . There was a negative correlation between the ‘Spending time with Friends’ ranking and the CNI mean score.  $r_s(356)=-.120$ ,  $P = .023$ . There was a strong negative correlation between the ‘Favourite Activity’ ranking and the CNI mean score.  $r_s(356)=-.211$ ,  $P < .001$ . The significant relationships found between the mean CNI scores and the three place meaning categories are further examined in the Discussion Chapter.

#### 4.12 Preferred Accommodation and CNI Score

To measure and analyze my third research question, (*Do children who indicate tree houses as their accommodation of choice have a stronger connection to nature than those that choose other kinds of park accommodation?*), a Kruskal-Wallis H test was conducted to see whether children's choice of accommodation (tent, camper, yurt, cabin, oTENTik and tree house) had an effect on their mean CNI score. There was not a significant mean difference between CNI scores  $\chi^2(5, N=336)=8.126, p=.149$ . However, the sample sizes for some accommodation categories were too small to be indicative (See Table 4.10). For example the oTENTik category only had had a sample size of  $n=4$ .

Table 4.10: *CNI Mean Rank Scores of accommodation types*

Accommodation Type	<i>n</i>	Mean Rank
Tent	43	135.36
Camper	97	183.27
Yurt	12	152.42
Cabin	72	171.19
oTENTik	4	135.38
Tree house	108	169.65

Based on the small sample size it was then decided a Mann Whitney U test would be the administered, with new variables grouping the existing accommodation into 2 overall categories, those being alternative accommodation and traditional accommodation. The cabin, camper and tent were grouped as 'traditional' while the yurt, oTENTik and tree house were grouped as 'alternative'. CNI scores for traditional

accommodation (mean rank=178.83) and alternative accommodation (mean rank=177.94) were not significantly different,  $U=14664$ ,  $z=-.079$ ,  $p=.937$  (See Table 4.11).

Table 4.11: *CNI Rank Scores on alternative vs. traditional accommodation*

Accommodation Type	<i>n</i>	Mean Rank
Alternative	131	177.94
Traditional	225	178.83

It was then decided to break the categories down based on similar experience, eliminating those where the sample size was low. This time camper and cottage were grouped together as these are considered hassle free, spacious, comfortable and secure types of accommodation. Tree house accommodation comprised its own category given it is a unique experience, different from all other accommodation types. ‘Tent’ was also considered as a stand-alone category given the more exposed nature of this type of camping. Yurt and oTENTik were eliminated from the test given their small sample sizes. The Kruskal-Wallis H test was conducted to determine if there were differences among children’s preferred accommodation choices (camper and cottage, tent and tree house), on mean rank CNI scores. The test, which was corrected for tied ranks, was significant  $\chi^2(2,N=329)=6.827, p=.033$  (See Table 4.12 for sample size and mean rank score).

Table 4.12: *CNI Rank Scores on 3 accommodation types*

Accommodation Type	<i>n</i>	Mean Rank
Tent	44	130.84
Tree house	113	166.70
Camper / Cabin	172	172.62

A series of Mann-Whitney U tests were conducted to evaluate pairwise comparisons among the three groups, controlling for Type 1 error across tests by using the Bonferroni adjustment.

A Mann-Whitney U test was administered to determine if there were differences in CNI mean scores between camper/cabin accommodation and tent accommodation. CNI mean scores for camper/cabin accommodation (mean rank=114.18) and tent accommodation (mean rank=86.28) were significantly different,  $U=2806.5$ ,  $z=-2.645$ ,  $p=.008$ .

A Mann-Whitney U test was administered to determine if there were differences in CNI mean scores between tree house accommodation and tent accommodation. CNI scores for tree house accommodation (mean rank =83.65) and tent accommodation (mean rank=67.06) were not significantly different,  $U=1960.5$ ,  $z=-2.056$ ,  $p=.040$ .

A Mann-Whitney U test was administered to determine if there were differences in CNI scores between tree house accommodation and camper/cabin accommodation. CNI scores for tree house accommodation (mean rank =140.05) and camper/cabin accommodation (mean rank=144.94) were not significantly different,  $U=9384.5$ ,  $z=-.490$ ,  $p=.624$ .

## 5.0 QUALITATIVE RESULTS

### 5.1 - Introduction

*Age 9 (1997): My back slightly damp, pressed against a mossy rock wet with dew, a ray of sunshine beating down on my face, between the boughs of cascading cedar branches. Eyes tight; listening to gurgling sounds of a nearby brook. We have been instructed to use our sense of smell, hearing and touch to quietly contemplate and reflect on the life of the forest, a flurry of biological activity that persists as we go about our everyday lives. My grade 4 class is taking part in Earthkeepers; an educational environmental program, aimed at learning about the ecosystems around us. The past 2 days have been filled with tales of the forest and the organisms that inhabit it. We have heard narratives from our leaders and have been encouraged to share our own experiences in nature. Stories empower, inspire, educate; they create a platform for learning through a tapestry of lived experience. Stories resonate with me and are my favourite way to learn. Through my research I wanted to give children a voice to tell their stories.*

This chapter is organized in three sections; the first addresses overarching themes related to children's experience of place, the second illustrates themes for each of the 7 place meaning categories and the final section provides a conclusion.

To capture a sense of the children's voice, I scanned snippets from their survey responses to place their quotations in the text through their own handwriting. Examples from the activity booklets are presented for each theme. In cases where children's handwriting may be difficult to read, I typed their response in small font below the quotation.

### 5.2. Children's Experience of Place

To answer the research question, *'What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?'* themes found for the 7 place-meaning questions were examined for patterns to indicate overall themes. Children's experiences of place were broken into three main themes and eight subthemes (See Figure 5.1). Explanations for each theme (i.e. Nature, Non-natural and

Social Bonding) and subtheme, along with supporting examples from the activity booklet, are presented below.

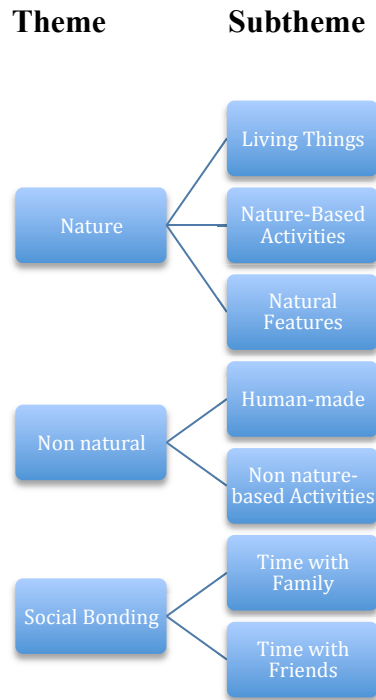


Figure 5.1 Qualitative Themes and Subthemes

### 5.2.1 Nature

Participants expressed ideas that were nature-related as the most important elements to their experience of place. Subthemes of this category include: living things, nature-based activities, natural features and are examined below.

Throughout their answers children expressed a fascination for living things. Their responses reflected an appreciation for wildlife, trees and plants.

I like to explore in the trees because it is nature and I LOVE to be in nature with all the trees, plants, birds, bears and other animals.

Participants demonstrated a curiosity for the wildlife they encountered. Seeing natural phenomena for the first time, such as a deer nursing, a bird hatching or a species that was completely new to them.

A special memory I had at Dog Lake was when I discovered 2 different raptails and 1 new bird. But they had the same symbols on their backs it's amazing!!!

Natural features such as streams, waterfalls, beaches and forests were frequently a point of topic. Often when children elaborated on why a natural feature was important to them it elicited responses focused on their senses, describing the sounds, smells and sights associated with the experience. In some cases they used descriptive terminology similar to that which adults express when explaining their special outdoor places; for

example, they used words that exemplify a sense of serenity such as ‘peaceful’, ‘calm’ and beauty’.

I like to explore by the water because it is very peaceful and I like watching the water flow

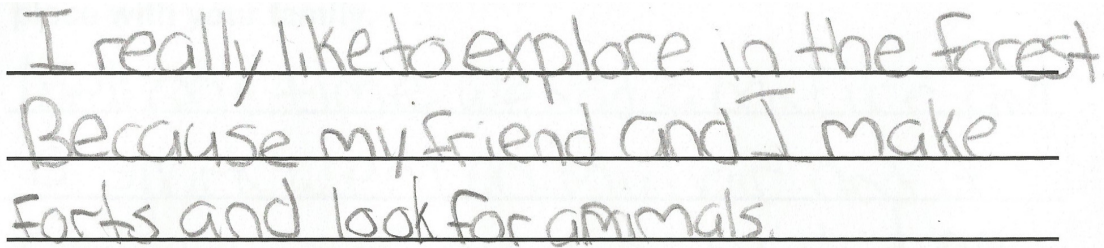
For the purpose of my research, three types of experiences can be defined as nature-based activities (Valentine, 1992): experiences that depend on nature, experiences that are enhanced by nature and experiences for which a natural setting is incidental. Frequently mentioned nature-based activities included collecting shells, observing wildlife, trail walking, cycling, canoeing, hiking, tree climbing and fort building.

I like to explore the beach near Chippeawa because I like getting shells near the shallow water or hopping to the big rocks in the water and looking far out in the water.

It is not surprising that examples of outdoor places were frequently mentioned by children, given the questions in the activity booklet inquire about memories specific to a



park or outdoor place. Popular responses included forests, trails, parks, campgrounds and playgrounds.



I really like to explore in the forest.  
Because my friend and I make  
forts and look for animals.

### 5.2.2 *Non-Natural*

To a lesser degree, participants expressed an interest in non-natural features such as human-made structures and non-nature-based activities. Considering there was no way to understand the context of some of the activities, those that did not involve direct interaction with the natural world were considered ‘non-nature oriented’. Examples of activities that fell into this category included sports such as skateboarding, golf and tennis, games such as hide and seek and tag, or motorized activities such as ATVing. Although some children may have specified these activities based on the outdoor value of the experience, it is also possible they care more about the action of the activity rather than the environment in which it takes place. For example, tennis could be played on an indoor court and games such as hide and seek and tag can be played independent of a natural setting. ATVing may have been indicated as favored based on the thrill of the ride rather than the outdoor experience itself. Given the unknown context of such activities, I labeled them as ‘Non-nature oriented’.

I play baseball with everyone  
and we have a big  
baseball game and my team  
would usually win.

I play baseball with everyone and we have a big baseball game and my team would usually win.

Human-made refers to built features, with examples including a visitors centre, playground and trail. Although not naturally occurring, these structures could still have a tie to nature depending on the reasoning for the child's value of the structure. Although people create trails, they have natural importance as they provide a place for people to access and connect with nature. Visitor centres provide valuable opportunities to learn more about the park and its natural assets. There are some built features which have nothing to do with a natural experience. Such is the case for the following quote:

I like to go to the gift shop with my sister and  
look at the cool jewelry.

### 5.2.3 Social Bonding

The third theme relates to social interaction with others. In many answers children describe sharing their experiences with family members and friends. In some cases, they meet new people through their park outing. In other cases they learned a new skill with the assistance of a family member, such as how to catch a fish or ride a bicycle. Family participation was a resounding subtheme throughout the activity books. Apart from the

question asking children to share a special memory with their family, all other questions also elicited responses that involved spending time with family members. Time with friends was also a subtheme but to a lesser degree.

A special moment I had was when I corrected the best fisherman in my family, my dad. When my dad and I went fishing and when I caught a fish my dad thought it was a bass but insted it was a pikeral and I was the one that said it was pikeral.

### 5.3 Place Meaning Themes

To address the second Research Question: *'What place meanings are associated with a stronger connection to nature?'* children's answers to questions about place meaning experiences (i.e. exploration, nature, family, beauty, favourite activity, friends) were examined. These place meaning categories were chosen based on literature on adults' sense of place in outdoor recreation spaces (Bricker & Kerstetter, 2002; Brown & Raymond, 2007; Gunderson & Watson, 2007; Klatenborn & Williams, 2002; Schroeder, 2002) as well as children's sense of place in their home environment (Derr, 2001, 2002; Hartt, 1979). Each place-meaning category was examined in isolation and themes were uncovered within each facet of experience. Place-meaning categories, which had a higher degree of nature-based elements, were considered more conducive in connecting children to nature. These categories include: living things, nature-based activities, natural features and outdoor places. This section provides an examination of codes and categories

examined separately for each of the 6 place meanings (See Figure 5.10). The 7<sup>th</sup> place meaning (accommodation), is examined separately in section 5.4.

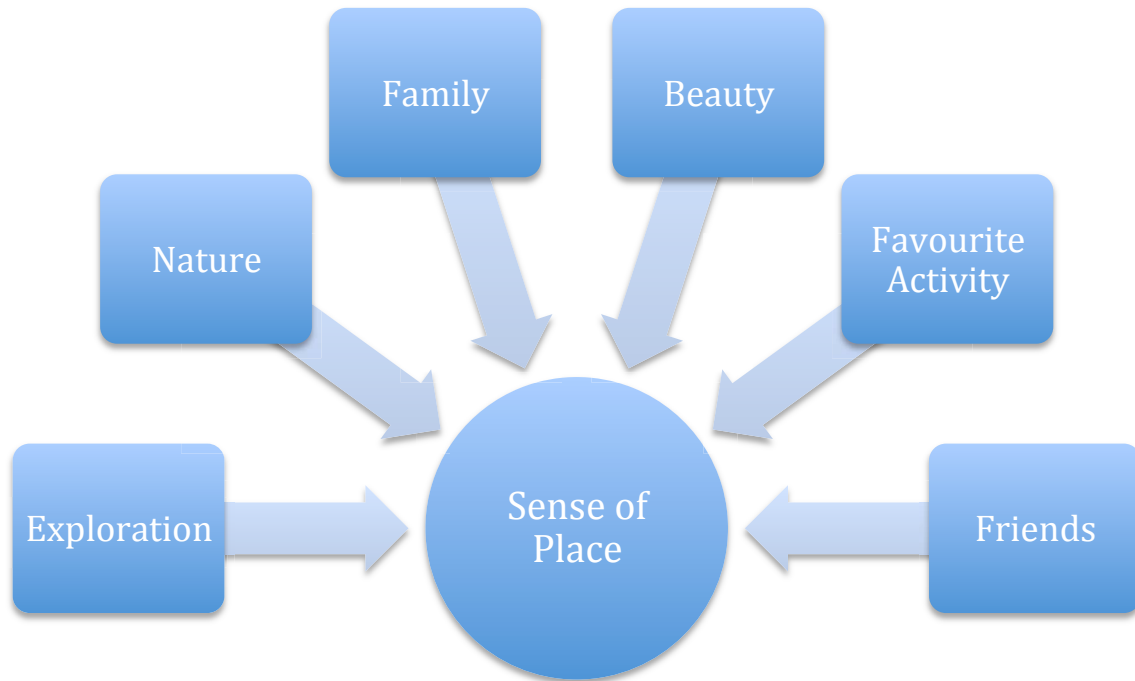


Figure 5.2 Place Meaning Categories

### 5.3.1 Exploration Themes

For this measure in the activity booklet children were asked, “Where do you like to explore in the park or outdoor place?” Nature, human-made and social bonding were the resultant themes. Underlying categories included: outdoor places, natural features, living things, nature-based activities, built features and time with others (See Figure 5.11). A higher proportion of the categories for ‘exploration’ were nature oriented, thus this place meaning measure is reflective of a connection to nature.

Codes that occurred more frequently in the data are highlighted. Codes with 30 or more occurrences are highlighted in yellow, 65 or more times in green and 100 more

times in pink. Those that are not highlighted occurred less than 30 times. This helps create a visual representation of which codes were more prevalent.

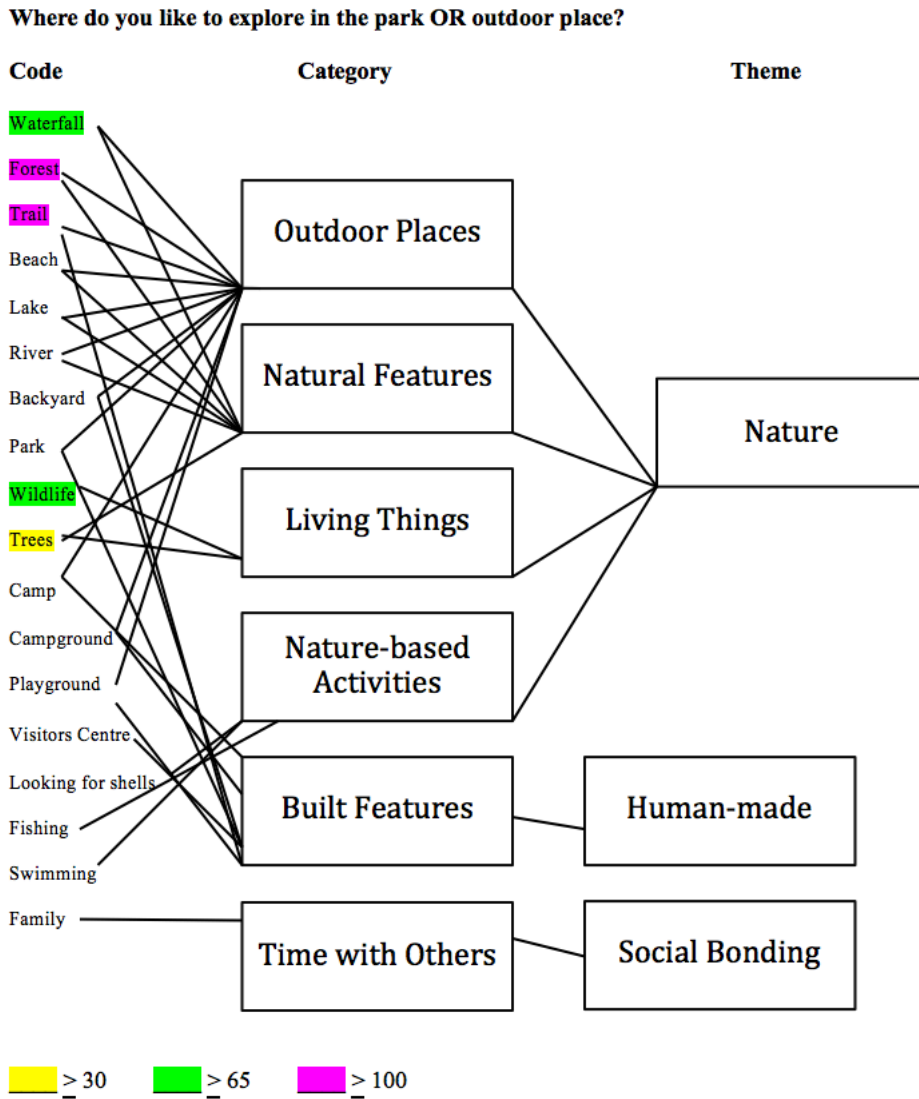


Figure 5.3 Exploration Place Meaning Themes

*Nature*

In some cases children reported a natural place or feature of a place and then went on to explain what activities they would do in the outdoor space. These places included waterfalls, forests, trails, beaches, lakes, rivers, backyards, parks, camps and

campgrounds. Water features such as lakes and rivers were also described.

One of the more frequently mentioned sites of exploration was a waterfall. I believe this can be partially attributed to the fact many children reported Kakabeka Falls Provincial Park as the place they visited.

I like to explore the falls because I like to see what kind of waves that the water makes and the kind of things that animals do like roaming or things that they run after

Forests and beaches were cited for their aesthetic value as well as the activities and natural features they provide.

I like to explore the forest and the beach. I like the forest because during the day the trees look beautiful. And I like beach because when the light reflects on the water it looks really nice.

Within these spaces, natural attributes that were most commonly expressed by participants were wildlife and trees.

I like to explore the different type of animals and learn about their habits. I also want to be a scientist

### *Human-made*

There is a high degree of overlap between human-made spaces and outdoor places. Human-made places recurrent in the data include: playgrounds, backyards, parks, visitor centres, campgrounds, camps and trails. Although such places are built and not naturally occurring, their natural attributes may be the reason participants value them. For example trails were frequently cited for their natural qualities, as they are a place to see trees, plants and animals, and learn more about forest ecosystems.

I like explore in sort of hidden trails. In the winter I like to follow tracks of animals. I like to explore birds nests and guess what bird lives there. Also, I enjoy going down on the rocks watching and listening to the water.

And in other cases, trails were communicated as a place of tranquility:

I like going on the nature trails for relaxation, exercise, and fresh air.

### *Social Bonding*

For many of the activities mentioned, children recorded their explorations being shared with a family member.

I like to explore ~~a~~ new trails with my dad on our quads or skidoos. My dad and I love to explore and hunt and fish where ever we go. Me and my dad spend all our time in the bush when we go to camp. We also love to swim in our lake "Dog lake" So me and my dad have lots of fun boating and seadooring on our nice big lake to explore.

I like to explore new trails with my dad on our quads or skidoos. My dad and I love to explore and hunt and fish wherever we go. Me and my dad spend all our time in the bush when we go to camp. We also love to go swimming in our lake "Dog lake" so me and my dad have lots of fun boating and seadooring on our nice big lake to explore

### *5.3.2 Importance in Nature Themes*

For this measure children were asked to answer the following question with a drawing, "What is something you saw in nature at the park or outdoor place that is important to you?" As illustrated in Figure 5.18, the themes resultant of this process were: nature, human-made and social bonding. Categories resulting from this process



were: natural features, outdoor places, living things, time with others and built features.

As expected, there was a higher number of nature-related categories, thus, this place meaning measure is reflective of connection to nature.

**What is something you saw in nature at the park or outdoor place that is important to you?**

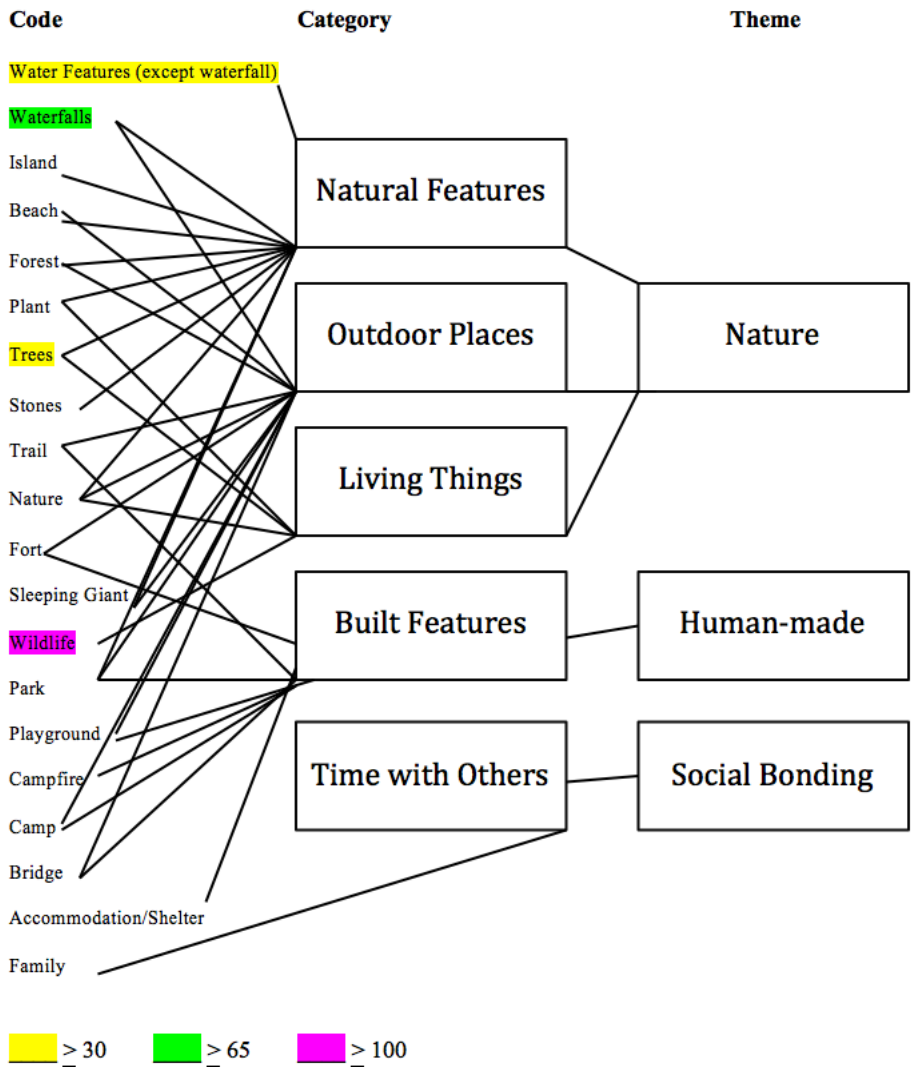


Figure 5.4 Importance in Nature Place Meaning Themes

*Nature*

Water features, waterfalls, islands, beaches, forests, plants, stones, trails, and the

Sleeping Giant (a landmass in Sleeping Giant Provincial Park), were natural features children expressed as important. Waterfalls were one of the most frequently drawn details. It is speculated that this is due to a high percentage of children reporting Kakabeka Falls Provincial Park as the park they visited.

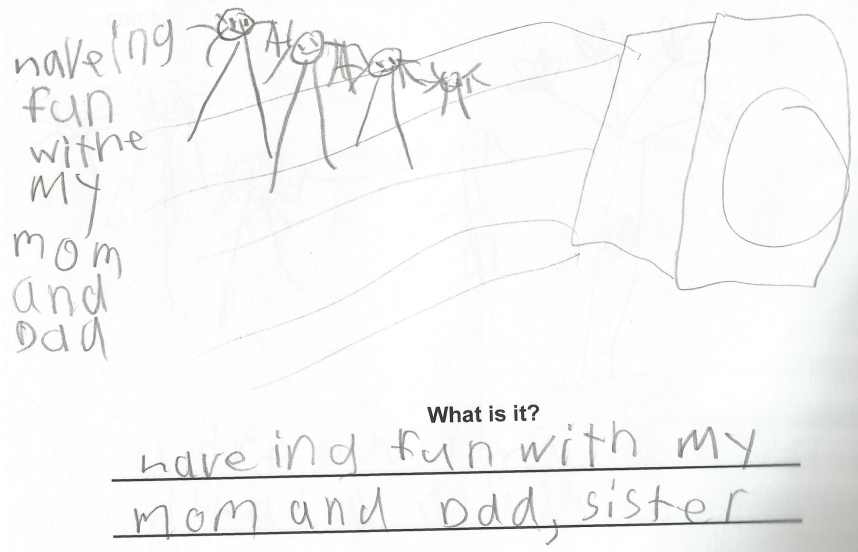


Animals were also frequently cited.



### *Social Bonding*

Sharing the natural experience with family members was incorporated in some drawings.



### *Human-made*

Human-made features such as a fort, park, playground, campfire, camp, bridge and accommodation were non-natural features indicated as important. In some cases the built structure still may be relevant to nature. For example the reason a child may have drawn the accommodation they stayed in could be for the broader experience of being closer to nature and having many outdoor activities readily available.



### 5.3.3 Memory with Family Themes

For this measure children were asked, “Share a special memory you have had in the park or outdoor place with your family.” The themes resulting from this analysis are illustrated in Figure 5.23: nature, non-natural and social bonding. Categories from this process were, natural features, nature-based activities, non nature-based activities, time with friends and family. There was a higher number of nature related categories, thus this place meaning measure was reflective of connection to nature.

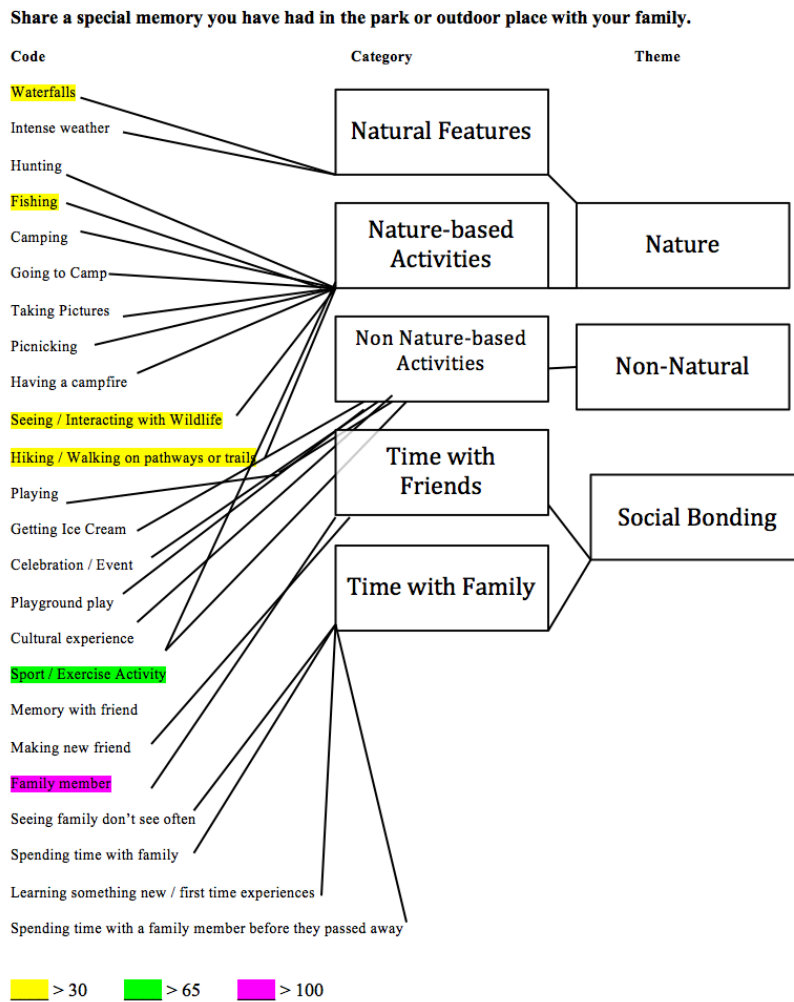


Figure 5.5 Family Place Meaning Themes

## *Nature*

Waterfalls and intense weather were most notable for scenery / natural features.

My specific memory is when me my friends and family went on a walk to see the rainbow falls, all of them.

There was a larger prominence on nature specific activities. Hiking, fishing, camping, hunting, seeing / interacting with wildlife, going to camp, picnicking, having a campfire and taking pictures of wildlife were repeatedly mentioned by multiple participants. One of the more frequently expressed activities was hiking or walking on trails or pathways.

I go for walks with my family at camp down the trail and we talk while we are walking. We spend time together.

## *Non-natural*

Activities that were non-specific to the natural experience included playing, getting ice cream, attending a celebration or an event, playing on the playground and partaking in a cultural experience. For sporting/exercise activities some were nature-based while others were not.

Me and my brother went to a park that my dad showed us and there were swings, slides, and monkey bars. My brother went on the swings because it's his favorite. Our dad watched us play. He went on the monkey bars.

### *Social Bonding*

Given the nature of the question a recurrent theme for this place meaning was social interaction. Children mentioned making new friends, spending time with family, seeing family they do not see often, learning something new and having a new experience with friends or family members. An example of a memory shared with a friend is:

A special memory I had at Chippeawa Park was when I was with my friend and we were making small mounds of sand at the beach. Then we were playing with the water and we had a lot of fun.

An example of a memory shared with family is:

A Special memory I had with  
my cousin and sister is when we  
covered our legs with mud and called  
ourselves "mud monsters"!

#### *5.3.4 Beauty Themes*

For this place meaning category children were asked to "Draw a picture of something beautiful in the park or outdoor place". As Figure 5.29 demonstrates, the themes that emerged included nature, non-natural and social bonding. Natural features, living things, nature-based activities, built features, non-nature based activities and spending time with others formed the categories. There was a higher number of nature related categories, thus this place meaning measure is reflective of a connection to nature.

Draw a picture of something beautiful in the park or outdoor place.

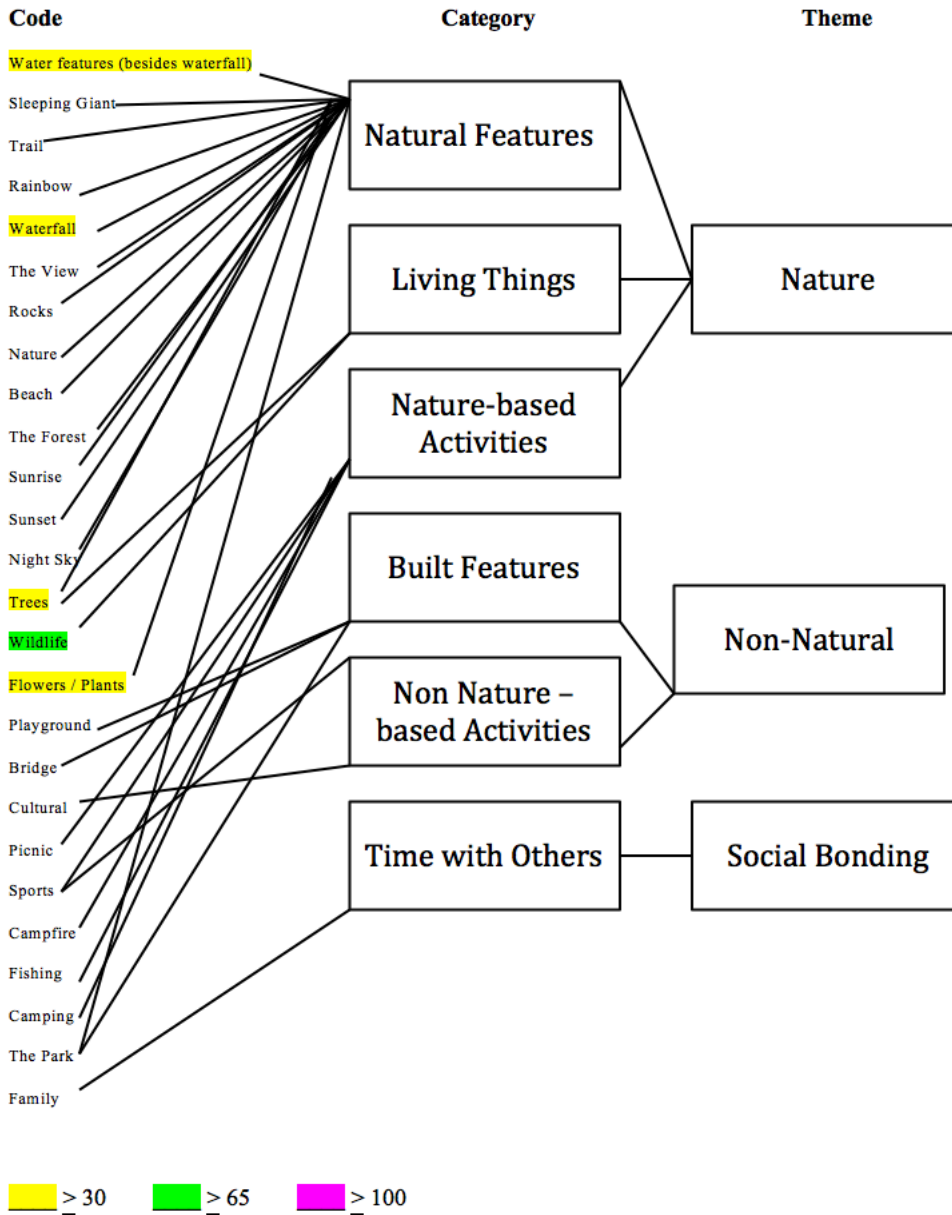


Figure 5.6 Beauty Place Meaning Themes

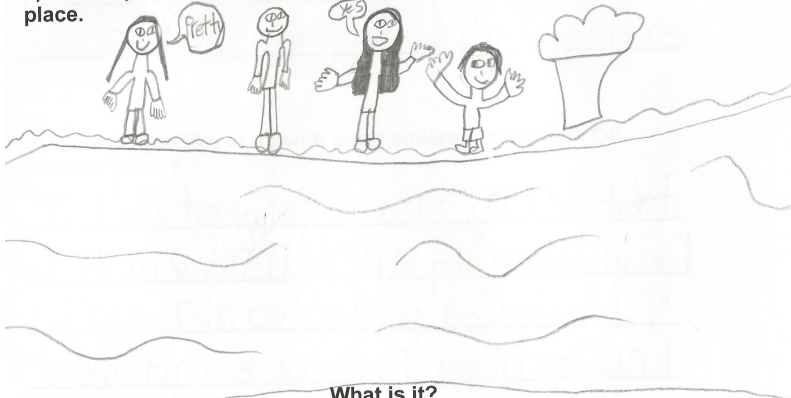
*Nature*

Of the features observed, those that repeatedly came up during coding were water features, Sleeping Giant Provincial Park, trails, rainbows, waterfalls, the view, rocks,



nature, beach, the forest, sunrise, night sky and sunset. Waterfalls were the most commonly recorded water features.

6) Draw a picture of something beautiful in the park OR outdoor place.



What is it?

Something beautiful that I saw  
was the water at a near by beach sparkling in the sun.

Trees, wildlife, plants and flowers were commonly acknowledged as beautiful.

6) Draw a picture of something beautiful in the park OR outdoor place.



What is it?

Huge Eagle spreads out it's  
wings to start flying in the sky.

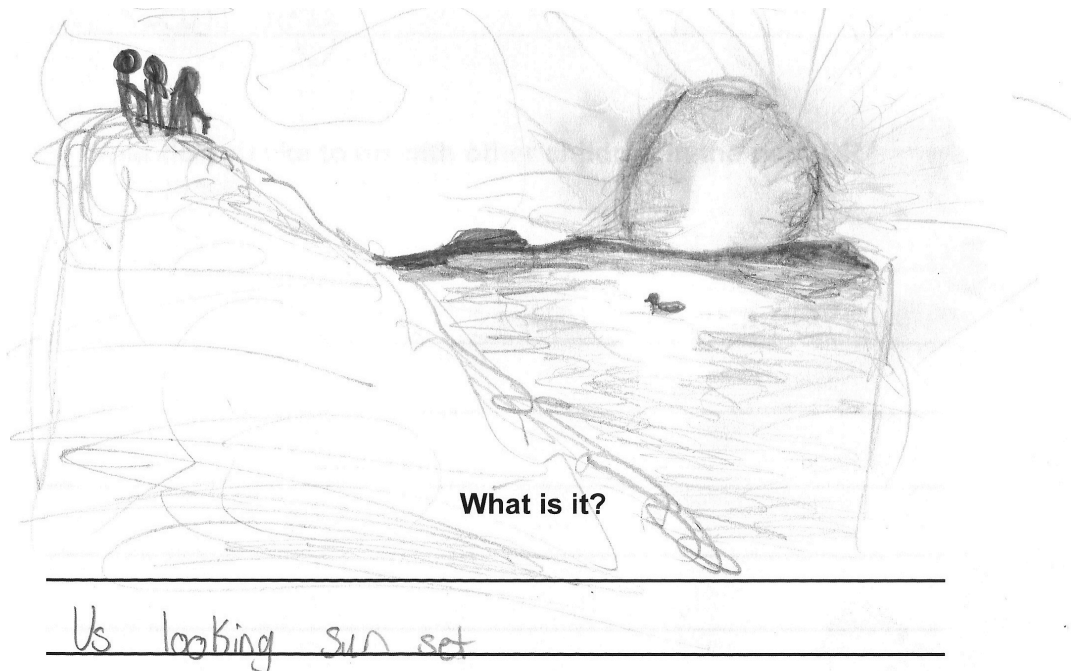
*Non natural*

To a lesser degree non-natural features were found to be a theme. Among human-made structures, children reported playgrounds and bridges the most in their answers.

Cultural and sporting activities were recognized as beautiful and independent from natural surroundings.

### *Social Bonding*

The overarching theme of spending time with others was also found within this place meaning. Spending time with family was expressed through nature-based activities.



### *5.3.5 Favourite Activity Themes*

Participants were asked, “What is your favourite activity in the park or outdoor place?”

There were 3 emergent themes, nature-based, non-nature based and social bonding (See Figure 5.33).

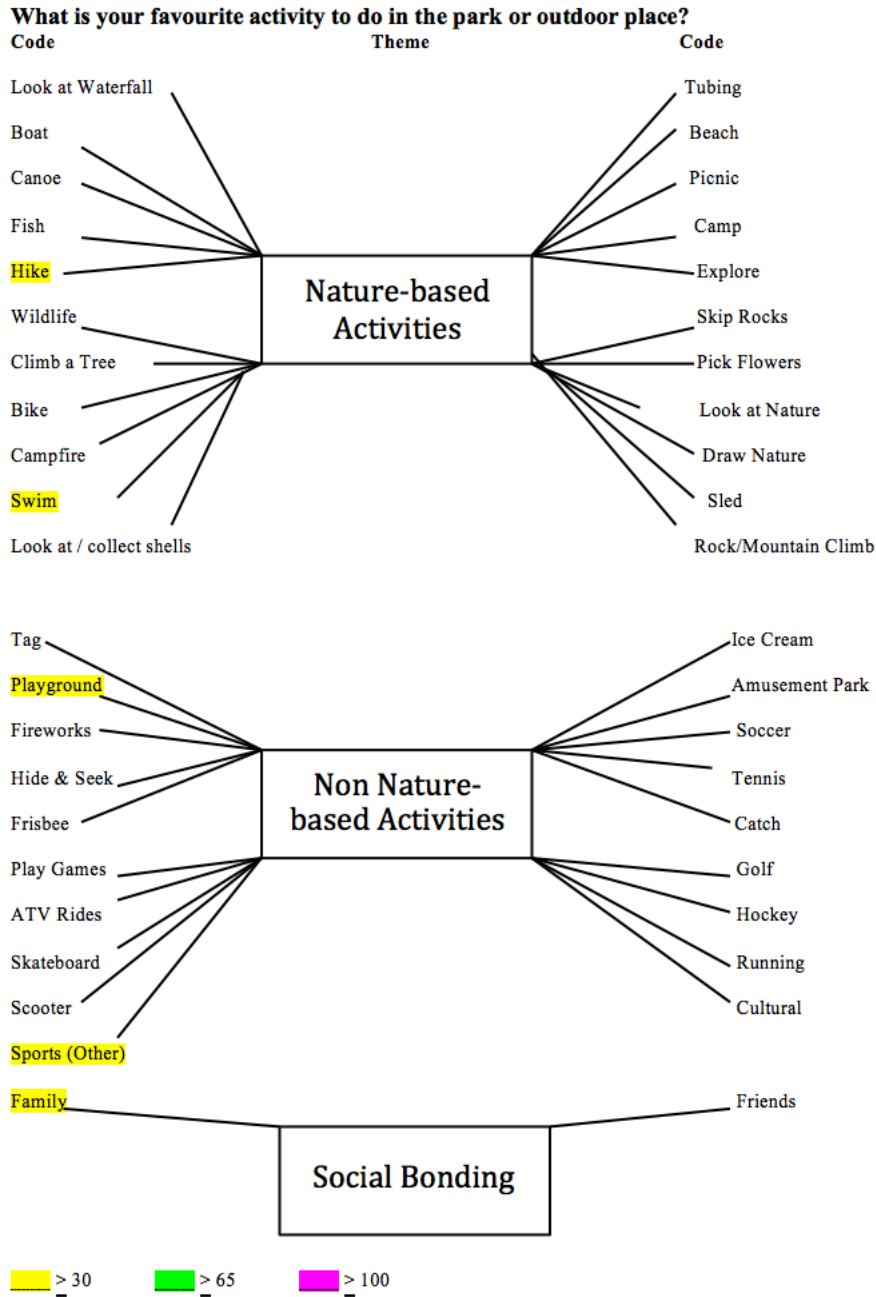
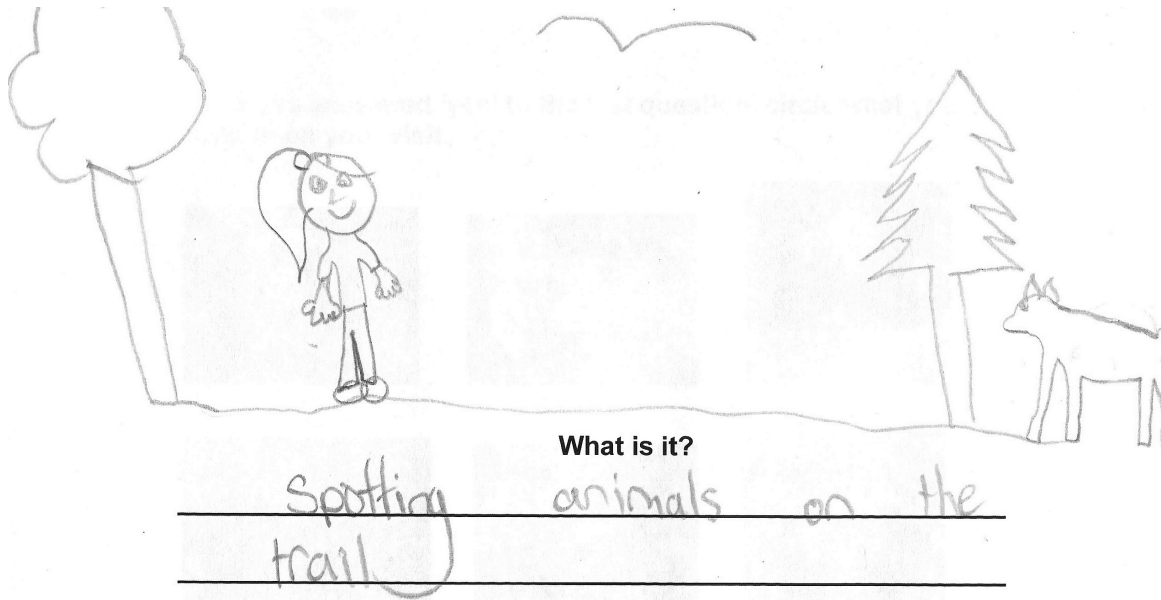


Figure 5.7 Favourite Activity Place Meaning Themes

*Nature-based*

Nature-based activities included beach activities such as skipping rocks and collecting shells, observing and taking photos as well as creating drawings of nature,

wildlife and waterfall viewing, picking flowers, camping, canoeing, picnicking, exploring, hiking, fishing, camping, mountain and tree climbing and having a campfire. Activities that require an outdoor setting, but the value of the experience may lie in the action of the activity, are: boating, tubing, biking, sledding and swimming.



### *Non nature-based*

As mentioned previously, although non-nature-based activities may take place outdoors, it is not necessarily the fact that they are in nature that makes the experience valuable. Sports such as soccer, tennis, hockey, golf, biking and running are some examples of non-nature-based activities. Motorized activities like ATVing, scooter rides and skateboarding and other outdoor pursuits such as playground games (tag, hide and seek, catch, frisbee, and other made up games) comprised this category. Social activities such as getting ice cream, watching fireworks, cultural activities and amusement park rides were also mentioned.

I like to explore on the play ground  
because I like to play and have lots  
of fun and play games.

I like to explore the pow-wow  
area.

### *Social Bonding*

As was the case with the other questions, children reported partaking in many of the activities with a friend and more commonly, a family member.

#### *5.3.6 Time spent with Friends Theme*

For evaluating what children like to do with their peers in outdoor spaces, participants were asked “What do you like to do with other children in the park or outdoor place?” As Figure 5.37 demonstrates, the resulting themes were: nature-based, non nature-based and social bonding. Given there was a higher occurrence of non-nature-based codes, this place meaning is not considered to be indicative of connection to nature.

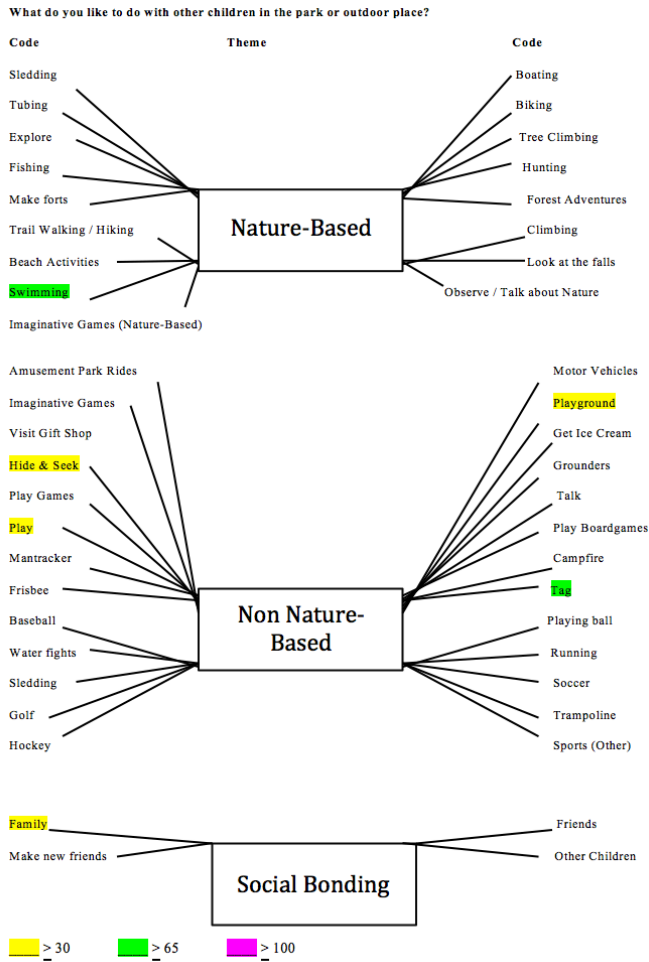


Figure 5.8 Time Spent with Friends Place Meaning Themes

*Nature-based Activities*

Exploring, fort making, fishing, hunting, trail walking, beach activities, imaginative games, tree climbing, forest adventures, hunting, climbing, waterfall viewing, sitting around a campfire and observing and talking about nature were all nature-based activities that arose from the data. Swimming, sledding, tubing and biking are other nature-based activities conveyed in the data, but require less of a direct interaction with nature.

I like to swim and look for cool rocks  
like amethyst and quartz.

### *Non Nature-based Activities*

Non-nature-based activities include sports such as soccer, hockey, golf, baseball, and running. Other outdoor pursuits include playground games such as tag, hide and seek, catch, mantracker, grounders and Frisbee. ATV rides, water fights, playing ball, trampoline, and other imaginative games were other activities acknowledged. Social activities such as going for ice cream, talking with friends, amusement park rides, playing board games, shopping and other cultural activities were also mentioned.

I like to play games like  
grounders or playground  
tag it is the best  
so much fun

### *Social bonding*

Because the question was specifically asking how children spend their time with friends, social bonding was an obvious theme. Time spent participating in activities with family members was also mentioned, which is not surprising given a family member would usually be accompanying a child to a park.

#### 5.4 Themes related to Accommodation Choice

Questions around children's preferred accommodation were asked as this information is valued by park managers as a means to encourage longer visits. Tents, cottages, cabins, yurts, campers, oTENTiks and tree houses were accommodation types which participants were questioned about. It is important to understand both parents' and children's preferences in order to create a desirable overnight experience that encourages more families to visit parks. Overall themes for accommodation experience include: safety, comfort and convenience, novelty of the experience, closeness to nature and the fun factor (See Figure 5.41).

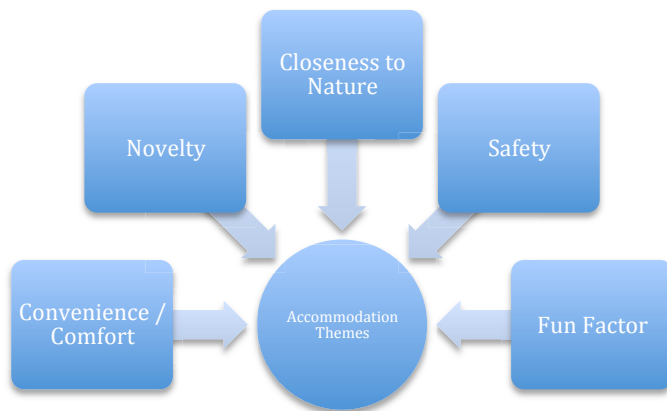


Figure 5.9 Accommodation Themes

##### **Closeness to Nature**

Being exposed to the sounds and sites of nature is an important theme found for all accommodation types. Given a tent is one of the most exposed camping options, it is not surprising respondents felt that being close to nature was an essential part of their experience. Although campers and cabins are more structured and less exposed to the natural elements, those whom stayed in these types of accommodation also identified



proximity to nature as part of what made their camping experience special. Seeing and hearing wildlife was an important part of children feeling attuned to nature. The babbling of water from a nearby brook and the chirping of crickets and frogs were communicated as soothing sounds that lulled children to sleep (See Figure 5.42). Being close to woods and water and experiencing the beautiful landscapes firsthand is another example of how proximity to nature played a crucial role in their camping experience.

I really liked sleeping here because  
I just love hearing the wonderful  
sounds of the birds singing and  
also where I stayed it was right  
beside a lake so I could hear the waves  
crashing on to shore

### **Convenience / Comfort**

Comfort and convenience of campers stay was another factor expressed for all accommodation preferences. Participants shared that they seek accommodation that is spacious, warm, cozy and not cramped. For accommodation such as a camper and cottage, children often mentioned having a bed as an advantage of the roomier accommodation. Having access to WiFi, television and a kitchenette were other aspects attributed to certain accommodation types being more convenient than others.

I would sleep in a cabin  
because I would have  
more room, better food  
and maybe even a  
T.V. to watch something.

### Novelty

Sleeping somewhere new and the novelty of the experience was a resultant theme, especially when children indicated that the tree house was their accommodation of choice.

I would like to sleep in a  
tree house because I have never slept  
in a tree house before and  
I think it would be cool to  
sleep in a tree house.

### Safety

Feeling protected from animals and natural elements was another theme. This was more frequently mentioned for solid accommodation structures like a camper or cabin. Escape from insects was another reason more secure structures were preferred.

I would like to sleep  
here to feel safe  
from wild animals and  
bad weather.

### **Fun Factor**

The degree to which the accommodation offer was perceived as fun was another theme. Sometimes children provided more insight into their answer, but in other cases they only stated it was fun without further elaboration on why they found it to be so.

I would like to sleep in a tree house  
because it's high up and looks fun.  
It's like a house in the sky.  
What kid wouldn't want to sleep in a  
tree house?

#### *5.4.1 Reflection on Accommodation Experience*

Themes around children's feelings towards the types of accommodation utilized were only found for tent (See Figure 5.47), cabin (See Figure 5.48) and camper (See Figure 5.49). Only a small number of participants stayed in yurts, oTENTiks and tree houses, and thus there were not enough responses to generate themes for these accommodation types.

## Tenting

The most commonly mentioned reason for enjoying tenting was the immersive natural experience (See Figure 5.47). Other reasons included: the novelty of the experience, having a campfire, the quiet atmosphere, time spent with family and friends, spacious sleeping quarters, comfort and convenience of the experience and the overall fun factor. Reasons for not enjoying the tenting experience were attributed to rain, wildlife, noise, and most notably a lack of comfort and convenience.

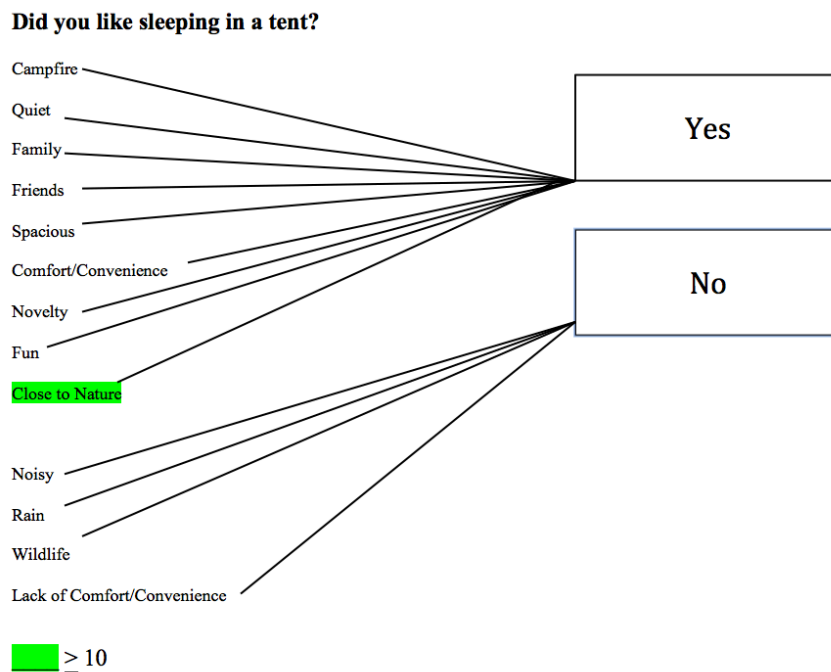


Figure 5.10 Accommodation Enjoyment Themes Regarding Tent Stay

## Cabin

Among those children who slept in a cabin, being close to nature and the level of comfort and convenience of the experience were factors most commonly expressed (See Figure 5.48). Relaxation, spacious sleeping quarters, enjoying a campfire, spending time with family and the overall fun factor were other reasons communicated by participants

for enjoying their stay. Reasons for dissatisfaction were discomfort and wildlife intrusion.

### Did you like sleeping in a cabin?

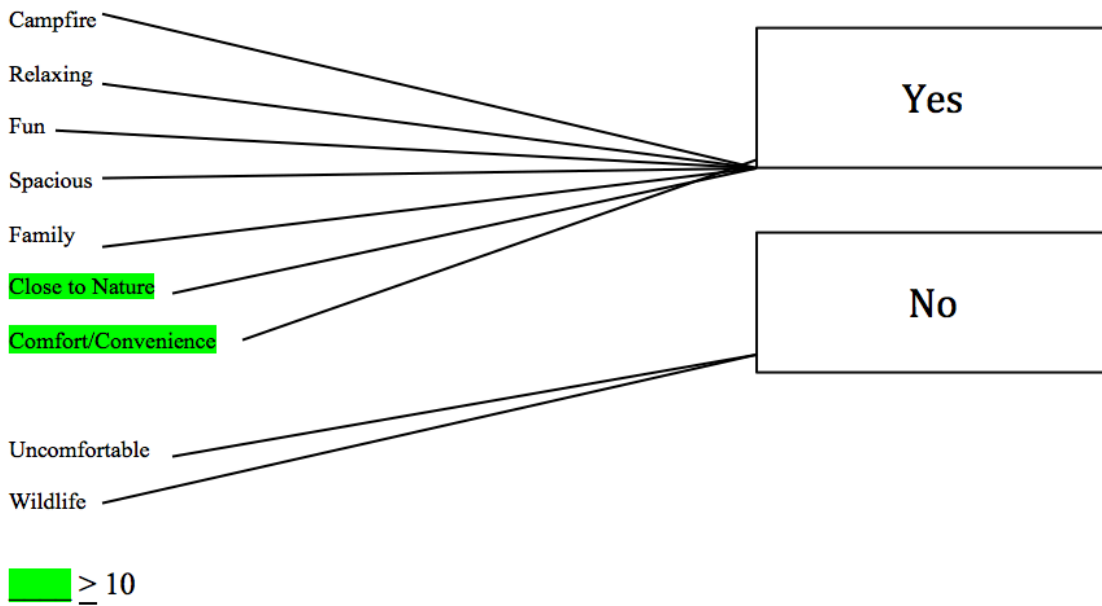


Figure 5.11 Accommodation Enjoyment Themes Regarding Cabin Stay

### Camper

Being close to nature, the fun factor and the level of comfort, convenience and relaxation of the experience were the most commonly conveyed responses for those that enjoyed their camper stay (See Figure 5.49). Time with family and friends, feeling at home, spacious sleeping quarters, the novelty of sleeping somewhere different, a relaxing atmosphere, feeling safe, and the opportunity to sit around a campfire were other reasons attributed to stay satisfaction. Lack of space, and fear/annoyance with nearby wildlife were reasons participants provided for not enjoying their stay.

### Did you like sleeping in a camper?

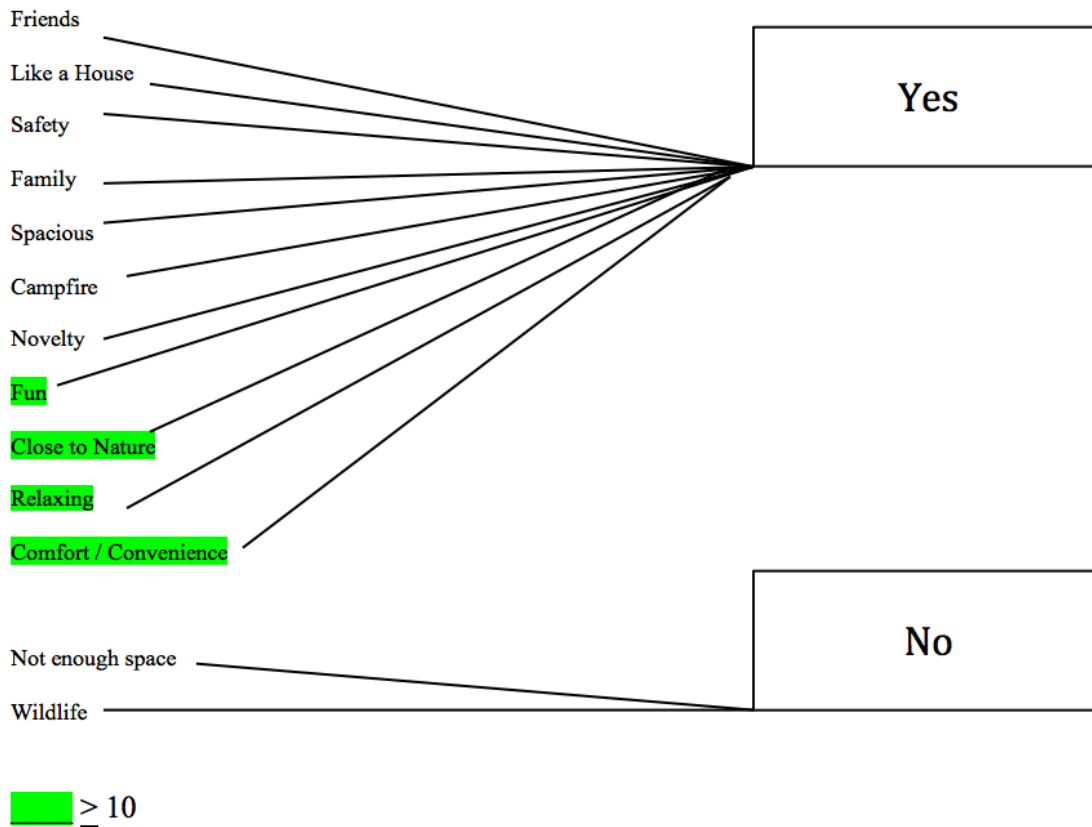


Figure 5.12 Accommodation Enjoyment Themes Regarding Camper Stay

#### 5.4.2 Reflection on Preferred Accommodation Choice

Preferred accommodation choice provided understanding of where respondents would prefer to stay on their next park visit. It included accommodation options that may not have been available at the park they previously visited.

#### Camper

Commonly conveyed reasons for choosing to stay in a camper were adequate space, comfort, convenience and safety (See Figure 5.50). Other reasons included elements of feeling close to nature, the novelty of the experience and feeling ‘campy’.

Familiarity from having stayed in a camper before and feeling at home, as well as an opportunity to spend time with family, the fun factor and perceiving the experience as cool were other reasons a camper was chosen as the accommodation of choice.

**Why would you like to sleep here on your next visit?**

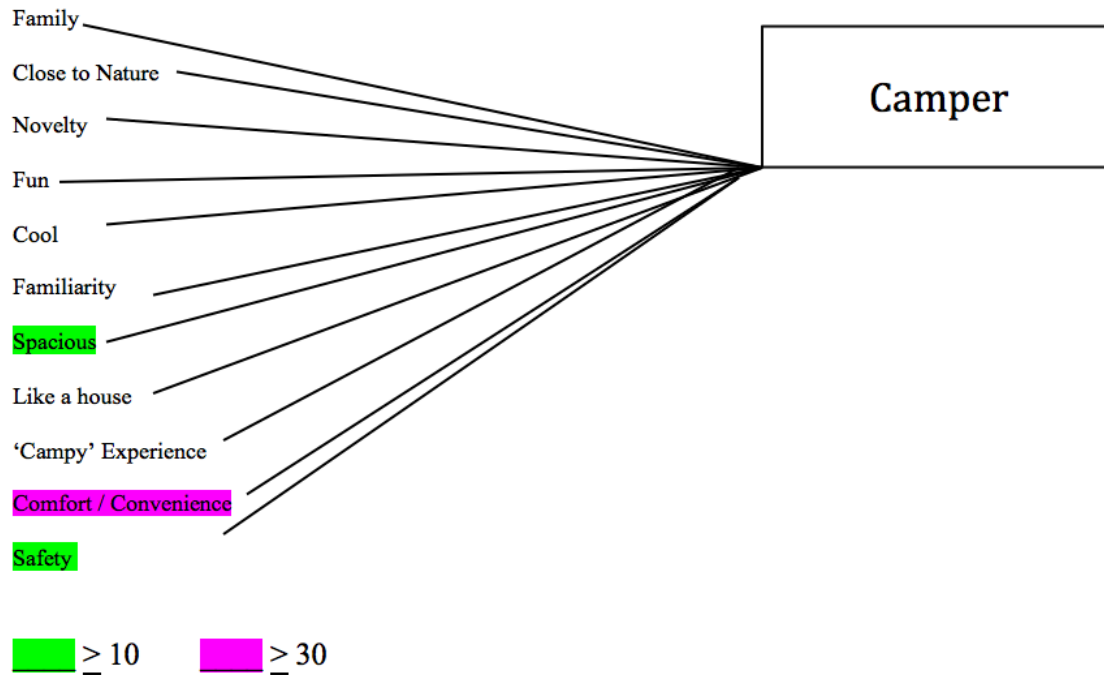


Figure 5.13 Accommodation Preference for Camper

**Cabin**

The most popular reasons for choosing a cabin were safety, comfort and convenience and feeling at home (See Figure 5.51). Other reasons included being close to nature, novelty, familiarity, space, time spent with family and perceiving the experience as fun and cool.

**Why would you like to sleep here on your next visit?**

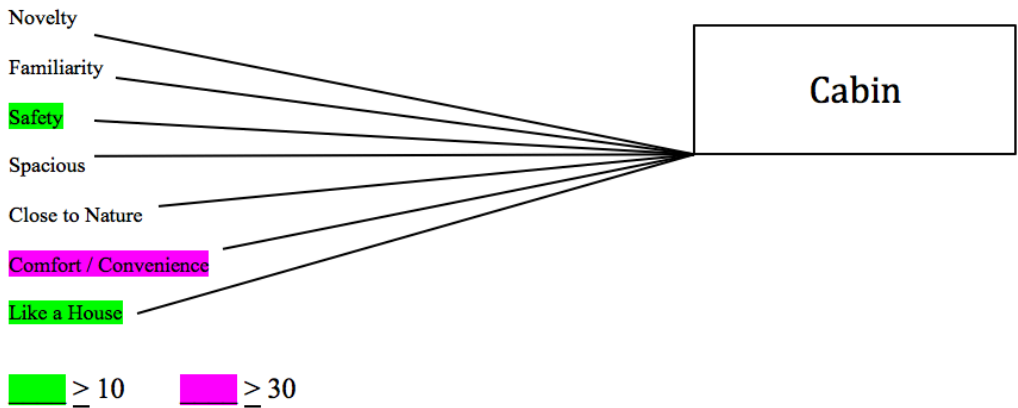


Figure 5.14 Accommodation Preference for Cabin

**Yurt and oTENTik**

Comfort and convenience were the most frequently expressed reasons for children choosing both yurts (Figure 5.52) and oTENTiks (Figure 5.53) as a place to stay. Novelty was another reason, which is not surprising given the uniqueness of these accommodation offers. oTENTiks were additionally considered to have a fun factor.

**Why would you like to sleep here on your next visit?**

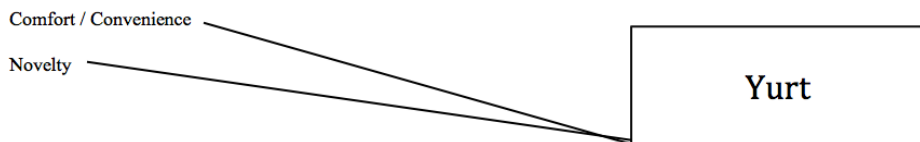


Figure 5.15 Accommodation Preference for Yurt

**Why would you like to sleep here on your next visit?**

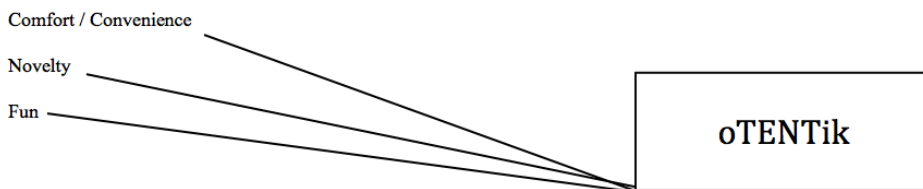




Figure 5.16 Accommodation Preference for oTENTik

### Tent

Similar to the answers given by children who actually stayed in a tent, being close to nature and enjoying a certain level of comfort and convenience, and the fun factor, were the most popular responses (See Figure 5.54). The novelty of the experience, familiarity with the accommodation type and the overall cool factor were other reasons children chose tenting as their preferred accommodation.

#### Why would you like to sleep here on your next visit?

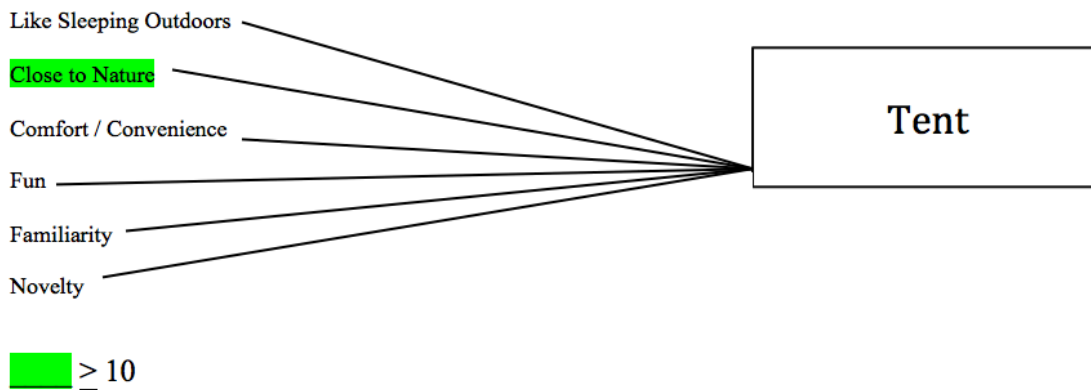


Figure 5.17 Accommodation Preference for Tent

### Tree house

Novelty, the cool and fun factor, and aspects of being in a tree such as the view and height were the most repeated responses (See Figure 5.55). Other reasons included climbing trees, liking tree houses and enjoying being close to nature. Comfort, convenience and safety were also listed but appear to be less important compared to the novelty of the experience.

### Why would you like to sleep here on your next visit?

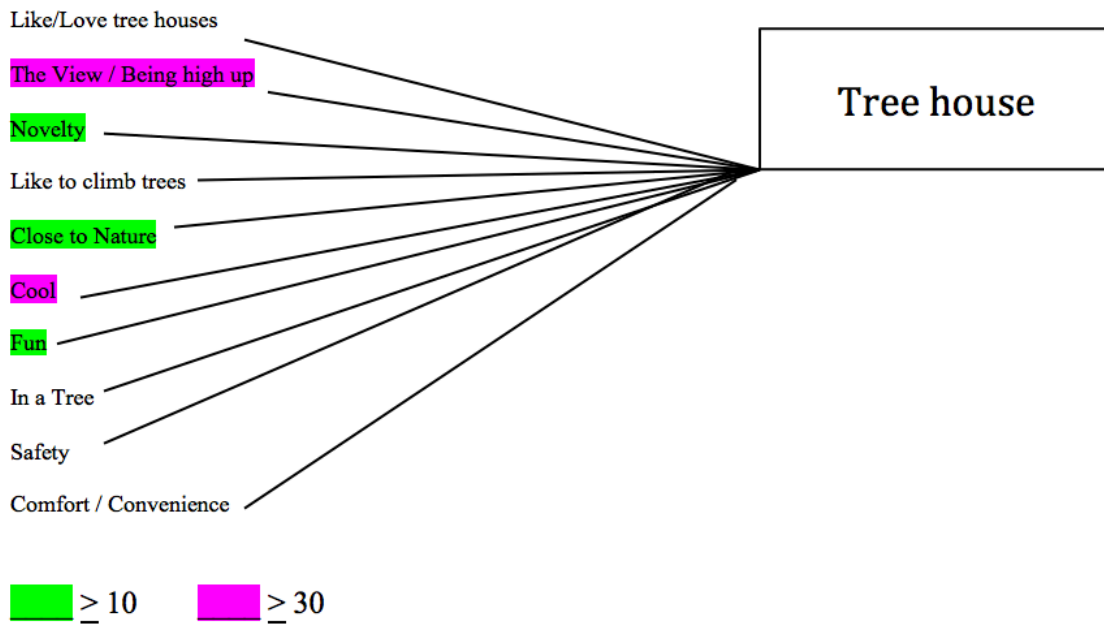


Figure 5.18 Accommodation Preference for Tree house

#### *Parents' Views of Accommodation*

Parents were asked if they would be more likely to stay overnight in a park if it offered one or all of the accommodation options (yurt, cabin, oTENTik and tree house). Of those that answered 'yes', safety, convenience, comfort and the novelty of the experience were the most common responses (See Figure 5.56). Feeling close to nature and feeling like they were at home were other responses given.

Of those that responded 'no' the most commonly cited reason for opposition was that they owned their own accommodation or camp. Other reasons included a preference for tenting and unwillingness to pay the potentially higher fee for a unique accommodation offer.

**Would you be more likely to stay overnight in a park if it offered one or all of the following accommodation options? (Yurt, Cabin, oTENTik, Tree house)**

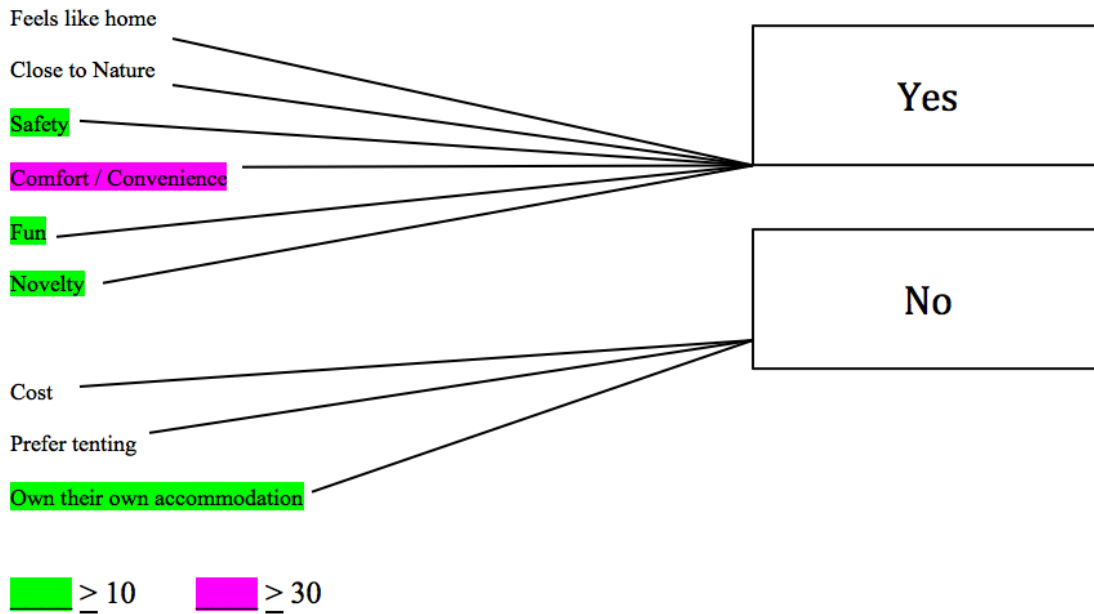


Figure 5.19 Accommodation Preference for Parents

## Chapter Summary

Through quantitative analysis an understanding was gained of the influence of each of the 7 place meanings (natural importance, beauty, family, friends, favourite activity, exploration and accommodation). The qualitative data provides insight into the varied experiences that comprise the 7 place meanings. Further, overarching qualitative themes (those expressed in relation to all 7 place meanings) can be classified as what determines sense of place development in a park. These themes are: social bonding, nature, and non-natural.

Examination of the themes found within each place-meaning category provided insight into why certain meanings were associated with a higher/lower connection to nature score. For example, quantitative analysis revealed an increased ranking of natural

importance was associated with an increased CNI score. Examination of the themes and categories for this place meaning reveal most are nature oriented, as 3 of the 6 categories are: natural features, outdoor places and living things. Most frequently cited codes include: water features, waterfalls, trees and wildlife. Of the 7 place meanings, natural importance, exploration, beauty and time shared with family had strong nature-related themes.

Lastly, the qualitative analysis provided insight into why participants preferred certain accommodation options. Both children and parents enjoyed the opportunity to sleep in a novel wilderness accommodation as long as it was comfortable and convenient. When choosing where they would most like to overnight, aspects of being close to nature were more important to those who chose a tent, as these dwellings are more exposed to natural surroundings. For those who preferred to sleep in a tree house, novelty was the key deciding factor.

## 6.0 DISCUSSION

### 6.1 Introduction

*Age 10 (1998): The light crispness of the air is invigorating. My first running race takes place in a large municipal park called Pine Grove. I have managed to put some distance between the runners in front and behind me, sliding into the peaceful groove of my own rhythm. Dry leaves crinkle underfoot, releasing an aroma of musky wet earth, mixed with the smell of the pine overhead, creating a sweet perfume of life and death rolled into one. All senses are amplified, adrenaline pumping. Songbirds cheer me on from their roosts, singing melodies of lighthearted encouragement. I revel at the power of moving my body through the forest, pushing my own physical boundaries. One last sprint... I persevere to the end.*

It is apparent through chapters 4 and 5 that children do favour certain place meanings over others, and that connection to nature is related to certain place meanings. In combining the quantitative and qualitative data, a synopsis of the research findings as they relate to the three individual research questions is offered.

- 1) What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?
  - Creating bonds with family.
  - Freedom to explore places within the park.
  - Natural features which children deem as important (i.e. wildlife, plants, landscapes).
- 2) What place meanings are associated with a stronger connection to nature?
  - Direct interaction with natural features children deem as important, including, wildlife, plants and landscapes (i.e. lakes, forests, waterfalls).
- 3) Do children who indicate tree houses as their accommodation of choice have a stronger connection to nature than those that choose other kinds of park accommodation?

- Preference to sleep in a tree house was not associated with a higher connection to nature, however preference to sleep in a tent was. Tree houses were the most preferred accommodation option by children, so although they may not lead to an increased connection to nature, they play a role in the visitor's trip satisfaction and act as an added draw to entice families to stay overnight in a park.

This chapter discusses the findings in terms of how both data sets aid in answering the research questions, and how they support or extend findings discussed in other research studies. Given the emergent themes identified through the qualitative data, I also examined literature not previously discussed in chapter 2, in order to address and discuss the findings resulting from the data analysis (Creswell, 2009). This chapter addresses child participants' connectivity to nature, then provides insight into why certain place meanings (natural importance, favourite activities, social ties) had a significant relationship with connection to nature scores. Next, the three themes indicative of sense of place are examined: social bonds, nature (i.e. wildlife, landscapes, plants) and non-natural / human-made features. Lastly, participants' accommodation preferences are analyzed in relation to their connection to nature scores.

## **6.2 Child Connectivity to Nature**

Khan and Kellert (2002; p.vii) posed the question, "Do young children form deep connections with the natural world, or is that idea actually a myth?" Based on accumulating research (Bragg et al., 2013; Cheng & Munroe, 2012) and the results of this study, it is evident that children do indeed form meaningful connections with the natural world. Nature-deficit disorder does not appear to be a problem for the children in this study as their CNI scores were high and the themes and subthemes found through

qualitative analysis were predominately nature-based. This high connectivity ranking is comparable to the results of Bragg et al. (2013) and Ernst and Theimer (2011) who also found high connectivity scores using the CNI. In the qualitative portion of the survey, seldom were children's responses to questions independent of nature. This finding may be in part due to the structuring of the questions (they were being asked about outdoor experiences so it may be assumed that answers would be reflective of nature). However, there was still opportunity to place value on built features within parks (e.g., gift shops, visitor centres, recreation facilities and accommodation). Human-made features were cited far less frequently than were nature-related features. In particular, place meaning questions around 'importance in nature', 'exploration', beauty' and 'time with family' had strong nature-related themes.

High connectivity could be attributable to participants' proximity to wilderness tracts of land. Given that outdoor culture is strong in Thunder Bay, as is demonstrated through the many outdoor recreation offers (City of Thunder Bay, 2016c), children in this study may have had more experience interacting with nature compared to children who live in a city with less accessible green space. All children participating in the survey lived in or near to Thunder Bay. The results may have differed if the survey was administered to children living in an urban centre farther removed from nature (e.g., Toronto or Montreal), as urban children have a different relationship with nature than rural children. (Collado et al., 2015; David Suzuki Foundation, 2012; Derr, 2001; Hinds & Sparks; 2007)

For this study, information about children's outdoor habits was known for a sample of 133. For this sample, on average, guardians reported that their child played

outside 5.9 days a week and for 2.6 hours per day. These estimates are higher than those reported in the 2012 Report Card on Physical Activity for Children and Youth, in which 46% of Canadian children actively played for three hours or less per week. Although my results do not specify the degree to which children were active while outside, a certain level of movement can be assumed if engaging in outdoor play. These findings suggest that children in my study spent more time outside than the national average. Conversely, it is also possible that parents reported that children spend more time outdoors than actually is the case.

Positive experiences in nature as a child lead to connectivity and affect environmental views (Ewert et al., 2005). Children with more direct experience with nature are more likely to feel more connected and comfortable with nature (Cheng & Monroe, 2012; Collado & Corraliza, 2015; Pyle, 2002), and thus more likely engage in environmentally sustainable behaviours (Hinds & Sparks; 2007). The only evidence to support this theory found in my study was that children received overall high scores on the CNI and one of the measures directly addresses ‘sense of responsibility’. I feel that a sense of environmental protection would have been better ascertained if children had been asked more in-depth questions, such as why natural experiences are important to them.

Why is a connection to nature important? Time spent in nature has been identified as a critically important indicator of well-being in children (Bowler et al., 2010; Cervinka, Röderer & Hefler, 2011). Increased time in nature has a positive affect on health (Golbey, 2009; Ulrich, 1993; Ven den Berg, 2015) as well as, cognitive, social and emotional development (Moore & Young, 1978; Hart, 1979; Sobel, 1993; Stutz, 1996;



White & Heerwagen, 1998). The experiences children have in nature affect how they think about natural environments in their adult years (Aspinall & Montarzino, 2008) and their likelihood to want to spend time in natural places.

Children's connectivity to nature has relevance in how they view, enjoy and care for outdoor spaces. The relationship between connection to nature and the values children attribute to park experiences are important in understanding how to facilitate opportunities for children to develop a deeper respect and appreciation for parks and more holistically, nature. The relationship between place meanings in parks and connectivity to nature is, therefore, explored in the next section.

### **6.3 Place Meaning Strength as it relates to Connection to Nature**

This section addresses relationships between connection to nature and sense of place, therefore, answering the second research question: *What place meanings are associated with a strong connection to nature?* Aspects of natural importance, specifically an interest in plants and animals contribute to increased connectivity. Favourite activities in outdoor spaces and time spent with peers were negatively correlated with connectivity; this is speculated to be due to many of the activities having an indirect relationship with nature.

#### *6.3.1 Natural Importance and Connection to Nature*

The place meaning 'nature' had a positive significant relationship with connection to nature scores. These results suggest that those who placed more value on natural features were more connected to nature. This finding further validates the CNI as a tool to measure connectivity to nature, as one would assume those who indicated natural features as their favourite aspect of park visitation, would feel strongly about nature-based aspects

of their park experience.

When asked to identify something that is important in nature, plants were a popular response. Interest in plants was also one of the factors used to determine connectivity to nature on the CNI (Cheng & Munroe, 2012). This commonality is important given that children increasingly have less knowledge of local plant species, including those found in their own backyard (Balmford et al., 2002). Less green space in children's neighborhoods also impedes interaction with different species of plants (Louv, 2005). Children in my study did not demonstrate knowledge of particular plant species but they did express a general interest in plants and particularly trees, in relation to their natural importance, aesthetic qualities, and being a part of places children chose to explore. There is an intrinsic need to spend time in the outdoors and connect with the natural world; this innate need is known as biophilia (Kellert & Wilson, 1995) and traces back to when humans depended on knowledge and understanding of the land and its natural processes for survival. Time spent in nature leads to a better understanding of biological processes and diverse species (Coley et al., 2002). My research shows that parks provide a space to develop a deeper understanding of the biological diversity that exists in natural areas, as children in my study wanted to engage with living organisms. This means parks can provide a platform for education. Considering children's affinity for plants and trees in these spaces, park management should provide opportunities for children to learn about different species through child friendly signage, interpretive programs and class trips.

Wildlife was another popular response when children were asked to describe something of natural importance, a place they explored, something they found to be

beautiful and a memory shared with their family. Animals have been found to be more important to children than adults when it comes to creating bonds with nature, with early to middle childhood being of special importance in developing such connections (Myers & Saunders; 2002). This appears evident as wildlife played a significant role in defining the place meanings in my study, but was not an evident theme in a review of the literature on adults' visited outdoor spaces (Bricker & Kerstetter, 2002; Brown & Raymond, 2007; Gunderson & Watson, 2007; Klatenborn & Williams, 2002; Schroeder, 2002; Young, 1999). Derr (2002) who also examined children's sense of place, found the presence of animals to be one determinant of children's favoured exploration places. During middle childhood, children start to recognize animals as beings that lead lives independent of humans and require care. An appreciation of animals in childhood leads to caring of animals and subsequently increased concern for the environment as a whole (Derr, 2002; Sobel, 1993). Care for wild animals is a factor included on the CNI scale, of which children in my study scored highly. Parks are a place where children can see animals in their natural habitat, which is a different experience than viewing them in an artificial setting such as a zoo or vicariously through a televised nature program (Kellert, 2002). Sleeping Giant Provincial Park was one of the most frequently cited parks in my study and boasts excellent wildlife viewing of animals such as moose, wolf, fox, lynx, and over 200 bird species (Ontario Parks, 2016b). This may be one reason why so many children cited animals in their responses. Given the relationship between connectivity to nature and interaction with animals, it is important to facilitate opportunities for children to see, learn and develop respect for animals.

Landscape features such as waterfalls, lakes, rivers, stones, forests and beaches

were all natural values expressed by children for their aesthetic beauty, their general natural importance, and as preferred places for exploration. Such features were noted in studies of adults' experiences in outdoor recreation spaces, which were used to generate the place meaning categories that formed the framework of my survey (Brown & Raymond, 2007; Bricker & Kerstetter, 2002; Gunderson & Watson, 2007; Klatenborn & Willians, 2002; Schroeder, 2002; Young, 1999). Additionally, built features in which landscapes can be enjoyed, such as forts, trails and campgrounds were also expressed. Forts have been found as a place where children gain their independence, creating a place private from adults (Derr, 2002). Freeman and Kearns (2015) cite campgrounds as an environment where parents feel more at ease letting their children explore compared to places in their everyday environment. My study supports these findings as exploration was ranked the second most important factor in children's park experiences. The places children reported exploring were comprised largely of 'wild nature' such as lakes and forests. Landscapes provide a means of connecting to nature through direct interaction and appreciation of the natural environment.

One aspect of landscape features which was found in other researchers' work (Bricker & Kerstetter, 2002; Brown & Raymond, 2007; Young, 1999), but not my own, were the emotions landscapes foster, such as feelings of spirituality and intrinsic value. In terms of studies conducted with children, Derr (2002) found mental well-being contributed to children's sense of place. I believe these emotional outcomes of experience were part of my participants' interaction with place but were not expressed based on the framing of the questions. I did notice some instances of children referencing an experience with feelings of well-being or describing land features as having therapeutic

value, however the occurrences were too few to be identified as a theme. I believe a second level of questioning was required to illicit such responses; children needed to be asked specifically ‘why’ each facet of experience was important to them in order to uncover such meanings.

### *6.3.2 Recreation Activities and Connection to Nature*

There was a strong negative correlation between the ‘Favourite Activity’ ranking and the CNI mean score. I suspect these quantitative results are attributable to the anthropocentric nature of favouring an outdoor space for its recreation value (Kahn, 2002), as children who indicated that their favourite activity was the most important aspect of their visit focused on how the place/activity is benefitting them personally rather than its ecological value. Given the framing of the survey question, it is assumed all activities took place outdoors, however, a large percentage of reported activities were not nature-based in a purist sense (i.e., observing wildlife, nature photography).

The degree to which activities involve interaction with nature is another possible explanation for the negative relationship between connectivity and activity preference. Delineating the types of activities through qualitative analysis showed that participants enjoyed a range of activities, many of which could be enjoyed independent of a park setting. Researchers have created categories to better define nature-based activities by the extent to which they involve interacting with the natural environment. Ewert et al. (2005) chose to use outdoor recreation categories developed by Tarrant and Green (1999) in their study on causes of environmental beliefs. Outdoor recreation activities were broken into three categories: appreciative, mechanized and consumptive. Appreciative activities consist of enjoying nature while causing little disturbance to the environment (e.g.,

wildlife photography). Mechanized activities involve exploring landscapes by use of a motorized vehicle (e.g. ATVing). Consumptive activities can be classified as those that cause a disturbance to the environment by means of natural resource extraction (e.g., berry picking). Participation in appreciative and consumptive activities as children were shown to influence adults' environmental beliefs, while mechanized activities were not (Ewert et al., 2005). Favourite activities listed in my study fell under the umbrella of all three of these activity types.

Similarly, Kellert (2002) used the terminology, direct, indirect and vicarious to describe the level of interaction individuals have with the environment when describing nature-based pursuits. Direct involves “actual physical contact with creatures and habitats largely independent of human input and control”, while indirect experiences include “largely restricted, regulated, and constructed human context” while vicarious involves “realistic as well as symbolic and fantastic representations of nature” (Kahn & Kellert, 2002, p.xii). As such, unpacking nature-based activities into three tiers for the purpose of my research helps more fully to understand children's responses. For the purpose of qualitative analysis I labeled nature-based activities as ‘experiences that depend on nature, experiences that are enhanced by nature and experiences for which a natural setting is incidental’ (Valentine, 1992); additionally, to further understand the delineation between the types of activities I chose to make a separation between primary and secondary nature-based activities. Primary nature-based activities are those that include a greater degree of interacting, understanding and appreciating the natural environment, such as observing wildlife, taking pictures of nature, climbing a tree, or fishing. Secondary nature-based activities such as swimming or biking require the outdoors for

the activity to take place. However, immersion in nature may not be the reason for partaking in the activity. For example, mountain biking may be valued for its adrenaline rush rather than the scenery encountered during the ride. Finally, non-nature based activities are more structured and can take place independent of a natural setting such as sports (e.g., tennis, soccer, baseball) and playground play. When using this categorization system, it becomes apparent that a larger proportion of the answers were considered secondary or non-nature-based.

The negative relationship between CNI scores and activity choice lead me to believe that only activities that involve direct interaction with nature support an increase in connectivity to nature. These findings support research that children reap the most benefits out of unstructured exploratory experiences in nature (Rivkin, 1995). I believe only the primary nature-based activities support a biocentric viewpoint as they help children recognize the importance of living things beyond the more-than-human world (Kahn, 2002), and thus cultivate a stronger connection to nature. This is in line with the findings of Ewert et al. (2005) that appreciative recreational activities play a role in the development of a child's environmental attitudes.

The key to encouraging nature appreciative activities lies in the hands of caregivers, as many activities in my study were shared with a family member. Louv (2005) has found that structured activities are often favoured by parents because children can be kept in close range, are more closely monitored and there is less of an element of the unknown. Additionally, many parents think organized sports have the same benefits of unstructured play (Fraser et al., 2010). Organized sports encourage social development and health benefits from exercise but they lack benefits ascribed to nature connectivity.

The value parents place on nature-based experiences affect the value their child attributes to it. Further, the type of recreation activities children participate in, are largely influenced by parents (Ewert et al., 2005). Parents also affect children's access to outdoor spaces, because children largely rely on parents for transportation. Children should be encouraged by parents to play and explore natural areas. This encouragement should not only be done in visited areas such as parks or family camps, but also closer to home in the backyard and neighborhood. If children are comfortable exploring small pockets of natural land near their home, they will feel more at ease doing so in a wilderness setting.

In the case of this study, many of the activities reported by children were not purely nature-oriented and thus did not relate to a higher nature connectivity score. Previous research (Cheng & Munroe, 2012) suggests that children with a higher connection to nature are more likely to choose nature-oriented activities but this did not appear to hold here, as overall connectivity scores were high but many children chose activities that were not nature-based. This propensity for nature-based fun begins with exposure, access and role modeling by peers and parents in children's everyday lives. Further, if we want our parks to have a role in instilling a sense of deeper connection to the natural world, they will need to have opportunities that encourage direct interaction with nature.

### *6.3.3 Social Ties and Connection to Nature*

The place meaning pertaining to socializing with friends was negatively correlated with the connection to nature mean score. I believe this was due to answers being largely focused on non nature-based recreation activities as opposed to attention on natural surroundings. Examples of non nature-based activities cited by participants that



may contribute to an enjoyment of place but not influence their view of nature are tag, board game play, baseball and amusement park rides. Activities like tag and hide and seek are secondary in their natural value, as they are taking place in a natural setting but children have less direct interaction with the environment. Hiking, fort building, climbing, imaginative games and fishing are activities that require more direct interaction with the outdoors. In many cases children simply responded that they liked to ‘play’ with other children, making it difficult to understand if they were referring to unstructured imaginative play or if they were generalizing a specific activity. Another possible explanation for lower CNI scores in relation to peer activities is that the importance may lie in creating the social bond rather than the setting it is taking place.

#### **6.4 Place Meanings as They Relate to Sense of Place**

This section addresses relationships between connection to nature and sense of place, therefore answering the first research question: *What place meanings do children identify as most important in forming a sense of place in a park or natural outdoor place?* Nature, non-natural and social bonds were three overarching themes found in the qualitative analysis of place meanings. A Friedman test indicated statistically significant differences in place meanings, and an examination of the place meanings revealed time spent with family, exploring natural surroundings, and ‘wild’ nature as the most important determinants of sense of place in a park.

As Derr (2002) discovered in her research on children’s sense of place in nearby places, sense of place does not imply connection to nature and vice versa. To understand what most generated a sense of place in my study, responses of children were separated into three overarching themes. Categories within the broader themes of my research

consist of recreation activities, natural features, non-natural features, and time spent with family and friends. Similarly, Derr (2002) found reasons for favourite places to be based on activities, place features and togetherness. Derr found mental well-being to be a fourth indicator of place preference. Although there were some occurrences of children citing an outdoor experience inspiring feelings of tranquility, they were not frequent enough to be an overall theme. This could be in part due to the structuring of the survey as children were asked to describe and rate certain experiences but not asked why these experiences were important to them. I now realize asking children ‘why’ experiences were important to them would have provided a second layer to the data, as in many cases children did not elaborate on their own. However, this would have made the survey more time consuming to complete, which may have resulted in incomplete responses.

#### *6.4.1 Social Bonds*

There is value in examining the social context of children’s explorations of the natural world. Children ranked spending time with their family as the most important aspect of their outdoor experience. When asked to share a memory with their family member, many experiences involved nature-based activities, some of the most prevalent being fishing, viewing/interacting with wildlife and trail walking. A smaller portion of activities, which were not nature-based, included playground play, trips for ice cream, cultural experiences and family celebrations.

Parents motivate a child’s interest in nature as they largely control how their child spends their free time. They decide what extracurricular activities their child will take part in and provide transportation to said activities. They can also impede children’s ability to connect with nature by keeping them in close range and not allowing them the

opportunity to explore. How children view nature is greatly impacted by family views (Ewert et al., 2005). Children in my study frequently mentioned making a new discovery with a family member or learning something from their sibling or parent. Parents and older siblings serve as role models for how children both interpret and interact with the environment (Ewert et al., 2005). When adult environmental activists were asked to reflect on the outdoor experiences they shared with family members as a child, they reported experiences in which the parent modeled “secure attentiveness” to nature rather than “explicit teaching or models of activism” (Chawla, 2002, p.213). This shows that fostering positive behaviours early carries over to later in life (Pretty et al. (2009), thus learning outdoor skills from parents results in children being more comfortable with nature-based activities and more likely to engage in outdoor pursuits as an adult.

A number of participants enjoyed spending time in a park with a family member who they did not get to see often. Camping at a park or going to a cottage overnight is typically a trip children would take with their parents. This is generally a family vacation where parents, children and siblings spend time together. Given the globalization of the world today, extended family may live farther away so vacations or special outings can be an important time for families to slow down and reconnect.

Time spent with peers was a place meaning identified through literature review (Derr, 2001) which was also found in this study, however to a much lesser degree compared to family interactions. This result is most likely due to the fact many children in the 8 to 12 age range would be visiting a park on a family outing so interaction with other children is more likely to be with siblings. If I had chosen to work with a group of 13-16 years olds peer interaction would probably have played a much larger role in

responses, as researchers have found peer interaction plays a more crucial role in how adolescents value a place (Rehrer et al., 2011).

#### *6.4.2 Nature*

Contrary to the research that points to children of this decade being less comfortable and interested in exploring outdoor places (Louv, 2005), participants in this study proved to enjoy interacting with nature. Children found beauty in the setting sun, a colourful flower, the grandeur of a crashing waterfall, or a rare glimpse at wildlife in their natural habitat. They expressed wanting a backwoods experience, as the places they explored most frequently were: waterfalls, forests, trails and places where they could find wildlife.

The importance of ‘ordinary’ nature in middle childhood, such that is found in less pristine nearby places (e.g. gardens, backyard lawns, municipal parks) has been suggested by several authors (Derr, 2001; Hart, 1979, 1997; Moore, 1986; Pyle, 1993; Ratanapojnard, 2001; Sobel, 1993). I would argue that while there still is value in having frequent interaction with nearby nature this study suggests occasional interaction with ‘wild nature’ (e.g. lakes, beaches, forests, wildlife) is of equal importance, as natural features that were of importance to children in this study are considered ‘wild nature’. Children cannot experience these same nature immersive experiences in their backyard or in most urban parks, green spaces or playgrounds. Most children in this study have visited a park outside of the city, as 79.6% reported having visited a provincial or national park at least once. Children most commonly cited Sleeping Giant Provincial Park and Kakabeka Falls Provincial Park. The frequency of these two places may be attributed to the fact they were provided as examples in the booklet. However, perhaps

most important was the fact that these parks are near Thunder Bay, so would be the most easily accessed. ‘Wild nature’ is instrumental in fostering connection to nature. Access to ‘wild nature’ is clearly an advantage for this study group as almost 80% reported having visited a provincial or federal park, and they spend more time outdoors than the national average (Active Healthy Kids Canada, 2012). Access to wild spaces, in combination with a parents/guardians willingness to get them into said spaces, is critical.

Children have a desire to explore the natural world, but parents and caregivers feel pressure to sanitize children’s outdoor experience given perceived dangers such as strangers and environmental pollutants (Louv, 2005). Campgrounds provide a space where parents are more relaxed in allowing children greater freedom to explore (Freeman & Kearns, 2015). Experiences that are less organized and self-directed, allow for a more immersive natural experience. Recently there have been many initiatives targeted at creating more urban nearby nature. There is value in bringing nature to people but it cannot replace the value of bringing people to more wild nature.

#### *6.4.3 Non-natural / Human-made features*

Built features were a theme found in the qualitative research. However it was a weaker theme in comparison to natural environmental components. Fort, park, playground, campfire, camp, bridge, trail and accommodation were some of the built features cited in the data. Although human-made and not naturally occurring, these features may be valued for the natural features associated with them. For example, a child may have mentioned a bridge as being beautiful based on the natural scenery that could be seen from the bridge. This is one limitation of not doing interviews; in some cases there was no way to know the context of the children’s responses. In many cases built

features enhanced the individual's ability to interact with the environment such as walking along a wooded trail, or building a fort in the thicket of the woods. Features that encouraged social interaction such as sitting around a campfire may not strengthen a child's connection to nature, but they do facilitate social bonds, which contribute to sense of place.

Recreational activities that were not considered nature-based such as playground play and participation in sporting activities were other examples of park experiences not completely nature focused. Given these activities contributed to an individual's enjoyment of experience they still play a role in sense of place, but I would argue that they do not strengthen connectivity to nature. Sporting activities were an important aspect of family interaction, and family time was an important reason for children valuing a park or outdoor place. Organized activities do play a role in connecting the child to place; however, they play less of a role in connecting the child to nature.

## **6.5 Accommodation**

This section addresses how different accommodation preferences related to connection to nature scores, by answering the following question: *Do children who indicate tree houses as their accommodation of choice have a stronger connection to nature than those that choose other kinds of park accommodation?* Accommodation choice was the lowest ranked place meaning in terms of importance, which may be attributable to many of the study participants not having stayed overnight at a park, thus accommodation was an irrelevant part of their experience. Further, those that did stay overnight likely did not have a choice in the type of accommodation they stayed in, as this decision is largely made by the parents. This led to the inclusion of a question on

preferred accommodation, as asking the question about what the child would prefer on a future visit was a better indicator of which accommodation type was of the most interest to them.

The accommodation most frequently stayed in was a camper, followed by a tent, then cabin. Tree houses were the preferred accommodation type, with camper coming in a close second and cabin third. Few participants reported staying in or desiring to stay in a yurt or an oTENTik. This result can most likely be attributed to unfamiliarity with these accommodation types.

For both children and parents, the level of comfort and convenience afforded by their accommodation choice was the primary reason for favouring a particular accommodation type. Families want to stay somewhere spacious and safe from the elements. Reasons for parents not being interested in an alternative accommodation offer were increased costs, preference for tenting, or already owning their own accommodation. Parents are looking for a novel and fun experience as long as it is safe, comfortable and affordable. This probably is why oTENTiks, yurts and ready-made campsites offered by Parks Canada have been so successful.

The Kruskal-Wallis H test was conducted to determine if there were differences among children's mean rank CNI scores based on their preferred accommodation choices (i.e. camper and cottage, tent and tree house). The test was significant and a series of Mann-Whitney U tests revealed a pairwise difference between tent accommodation and cabin/camper accommodation. Qualitative themes revealed there was a higher occurrence of children choosing tents because of feeling closer to nature, in comparison to more house-like camper and cabin structures. Children who prefer tents over campers or cabins

appear to value being more exposed to the sights and sounds of nature compared to having the convenience of extra comforts the larger accommodation offers provide. There was not a similar pairwise comparison found between roofed accommodation and tree houses. However, tree houses were the most popular accommodation choice.

Children's accommodation preferences were based on familiarity, novelty of the experience, the overall 'cool' and 'fun' factor, the level of safety, closeness to nature and most notably the comfort and convenience of the experience. Parents indicated they were more likely to choose to stay at a park overnight if alternative accommodation options provided a novel, comfortable and convenient experience. These findings are important to park managers in deciding what accommodation offers are most likely to attract families. Although the place meaning 'accommodation' may not have been a significant contributor to sense of place development or connecting the child with nature, it can provide an added draw for turning a family trip into an overnight stay and also impact visitor's overall satisfaction of the trip.



## 7.0 CONCLUSION

### 7.1 Introduction

*Age 11 (1999): I pile into the car with my parents, brother, grandparents and golden retriever and head to our cozy cottage at Sevim Beach where we will spend two weeks enjoying the sun, sand and surf. I gaze out at the sea as we pull into the small cottage community in Barrington, Nova Scotia. Splashing in the ocean with my younger brother, we let out shrill cries; half of surprise and half delight, as the waves beat us to shore and the icy Atlantic water falls over our shoulders. I chase after our dog Molly as she sprints the length of the sandbar. Stopping to catch my breath, I scour the shore for shells, and if I'm lucky an elusive sand dollar to bring back to my grandparents. Pretending to be a mermaid, I squeeze between the algae laden rocks that are exposed at low tide, laying my wig of seaweed to dry in the afternoon sun. I cherish hikes with my family, weaving through sand dunes, then rolling and tumbling down enclaves of sand, returning at the end of day with the satisfying smell of brine on my skin and sand between my toes.*

These memories I will treasure forever. I feel that they are a part of what has shaped me as an individual, and although it has been years since I last visited the small seaside community, I have an undeniable attachment to that place. I have always felt an affinity for the ocean and I believe this is due to my early childhood experiences at Sevim Beach.

This chapter begins with a summary of the findings, which highlight my contributions to the existing research. It is followed by an explanation of study limitations and an evaluation of the research instrument. Recommendations resultant of my research findings and suggestions for future research are explored. Lastly I provide some final thoughts on how these findings tie to my own childhood experience.

### 7.2 Summary of Findings:

How can parks and natural outdoor spaces facilitate a sense of place? Based on the results of this study, it appears the answer is by giving the child unstructured time to explore nature through imaginative play and outdoor activities shared with a family

member. Participants in this study showed a genuine interest in exploring their natural surroundings. The places that they valued most were not the inside of a cottage or the park gift shop, but landscape features such as streams, forests, beaches, waterfalls, trails and places that allowed them to view plants and animals in their natural habitats.

It appears that allowing children direct interaction with nature through nature appreciative activities is the best way to foster a connection to the natural environment. Children's families impacted their connectivity to nature as many experiences were shared with family members. This has important implications as other researchers have found parents model important pro-environmental behaviours by demonstrating their affinity for and partaking in nature-based activities with their child (Ewert et al., 2005). Nature-based activities that inspire connection are related to learning, observing and interacting with plants, animals and landscape features such as lakes, forests and waterfalls.

When planning an overnight stay, families are looking for a novel experience that is comfortable and convenient. Tent accommodation is associated with a higher connection to nature, but this type of 'back to basics' experience is not for everyone. Offering tree house accommodation could be an incentive for families to choose park visitation over other vacation venues as both parents and children expressed an interest in this novel offer. Providing families with accommodation options that meet their needs is one possible way to increase park satisfaction and increase park visitation.

My study has contributed to the body of research on the importance of family bonding in developing a sense of place. It has provided a means of measuring the relationship between children's sense of place and connectivity to nature. It has offered

research on what experiences are most memorable in a child's park visit and gives reason to believe children can make meaningful connections to a place they visit.

### **7.3 Evaluation of the Instrument / Limitations**

There were both advantages and disadvantages that arose from surveying children on past experiences. Of both the park and special outdoor places visited, more than half of the visits reported by participants happened the previous summer, almost a year prior to completing the survey, thus creating a possible issue in recall. Also it is believed that in some cases children reflected on multiple experiences when filling out the survey booklet rather than answering all questions based on one visit as had been intended. Filling out the CNI awhile after the park visit provided a more indicative measure of their true connectivity as Cheng and Munroe (2012) reported higher connectivity scores after children participated in an outdoor educational activity. It also allowed them to reflect on the experience and report activities that were most memorable. By surveying children during classroom time I was able to obtain information from a substantially larger number of participants than if I approached families within parks, as it is less likely many parents and children would not have been willing to take time out of their vacation to complete the survey. Because the results included reports of experience in both outdoor places in addition to parks, the results can speak to a park experience but also more generally to the literature on visited outdoor spaces that contain 'wild nature'.

It would have been advantageous to include demographic questions (i.e. age, grade and gender) on the child's survey rather than the parent's, so that this information could have been known for all participants. I decided to include the questions on the parental survey form in an effort to cut down on the amount of time it took for children to

complete the survey. I did not anticipate having such a low adult survey return rate. This resulted in the decision (with approval from the Lakehead Ethics Committee and Thunder Bay Catholic District School Board) to analyze surveys that did not have accompanying parental consent and survey forms. It would also have been beneficial to include questions about nature near the home and family values around nature as these attributes affect children's attitudes towards nature and provide a comparative measure to the CNI for measuring connectivity to nature (Cheng and Munroe, 2012). The challenge of adding additional questions is that it would have increased the survey completion time, which already took approximately 30 minutes.

There is power in children's voice, which is demonstrated through drawings and writing. I feel a level of uniqueness was added to my research by including children's drawings and written work to present visuals of their thoughts. Children's perspective on places is often reported through the eyes of the parents, or through map making, drawing and interviews (Barker & Weller, 2003; Trelle & Van Hoven, 2010). These methods are onerous on both the child and researcher's time and result in a generally small sample size. By taking on a mixed methods approach I was able to work with a larger participant pool and generate statistically significant results through quantitative analysis while also adding elaboration and personalization through children's written responses. In taking the research one step further, it would be advantageous to take a small sample of participants and conduct interviews to better understand their answers and also to understand if the activity booklet method was a fun exercise and a preferred way to share their thoughts.

Sense of place is a complicated, multi-faceted subject (Stedman, 2003) and some researchers (Seamon, 1992; Stefanovic, 1998) have argued it cannot be measured

quantitatively. For my research I assumed 7 place meanings as most relevant in determining a sense of place, based on the findings of other place-based recreation studies (Bricker & Kerstetter, 2002; Brown & Raymond, 2007; Gunderson & Watson, 2007; Klatenborn & Williams, 2002; Schroeder, 2002; Young, 1999) and research on child sense of place (Derr, 2001). Through this method I provided more pointed questions with a larger group of participants to generate results that were quantifiable in nature. I believe that these categories were relevant as in many cases the pre-identified themes (family, friends, beauty, nature, activities and exploration) were identified in answers to multiple questions. For example, the theme ‘social bonding’ was not only an emergent theme found in the responses to the question relating to a shared memory with family, but was found to be a theme in relation to the other place meaning categories. For future utilization of this survey tool, I would recommend adding an ‘Other’ category to the section of the activity booklet where children report their three favourite aspects of visitation, to account for any place meaning that was not included on the list. I believe the instrument was successful in providing insight on sense of place for children in a park/outdoor place.

#### **7.4 Recommendations/ Key Messages**

Some researchers would argue that nearby nature, such as small patches of green space in a children’s everyday environment are most influential in building a connection to the natural environment (Derr, 2001; Hart, 1979, 1997; Moore, 1986; Pyle, 1993; Ratanapojnard, 2001; Sobel, 1993); however with children’s free range shrinking, rapid urbanization, heightened safety concerns, increase in children’s scheduled time, and helicopter parents on the rise, there are less opportunities for children to enjoy nature

close to home (Louv, 2005). Given the reduction of nearby natural places, trips to parks play a fundamental role in fostering a connection to nature and have the potential to become more of a staple in children's experience with the outdoors. By examining children's relationship with these spaces, we can better understand how to provide more meaningful experiences for them to connect with nature.

As spending time with family has been shown to be a key factor in developing a sense of place in a park, it is essential park managers take steps to make parks conducive to a family experience. If we want children to connect with their surroundings, there is a need to engage families as a whole. To reach the child through their parent, parks need to be more accessible and inclusive. Programs like Learn to Camp (Ontario Parks, 2016b; Parks Canada, 2013b), that equip parents with skills and make them more comfortable with the outdoors, need to be encouraged and expanded upon. They allow the less outdoor savvy to feel more at ease in a wilderness setting. By educating the parent, you can in turn educate the child. Parks agencies have indicated that young families are a target markets where visitation should be encouraged (Shultis, & More, 2011), so offers that are attractive to families should be taken into consideration when designing new park products. Initiatives like the National Parks Service's Every Kid in a Park (United States Government, 2016) and Parks Canada's Free Park Pass initiative (CBC, 2016) are recent efforts made to enhance accessibility to parks in North America.

To increase visitation to parks, we need to consider meaningful ways to target families. Offering unique accommodation options is one way to draw families to the park as 77% of parents who participated in my study said they would be more likely to stay at a park if it offered an alternative accommodation option (e.g. yurt, cabin, oTENTik and

tree house). When children were asked to choose a type of accommodation they would like to stay in, their top pick was a tree house. Parks need to have a unique offer to win out over competing vacation options. Given the decrease in young family visitation to national parks (Shultis & More, 2011), steps need to be taken to meet families travel needs and to make parks a more competitive family destination.

Children have a desire to explore; participants in this research rated exploration as the second most important reason for visiting a park; further, they want to explore natural places, as the top places to explore as expressed by children in my study were: waterfalls, forests and trails. They also indicated an interest in places with plants and animals. Park management should focus on creating more opportunities for children to spend time in these places, rather than creating structured activities. There is a need to put emphasis on nature-based experiences, as these are more likely to connect the child to the environment. Natural rather than traditional playgrounds are one offer that could be built in parks to foster more direct interaction with nature. Programming around animals would also be of especial interest to children. Lastly, management needs to promote safety in parks so that parents are comfortable allowing their child free range to explore.

Parents are not always a part of children's everyday outdoor play experiences, which often take place within a child's neighborhood or at school. Usually park visits or weekends at the family camp are vacations taken with the intent of taking part in activities as a family. These situations provide opportunities for parents to encourage participation in nature-based activities and demonstrate environmentally sound practices. Through modeling, they show children how to treat plants and animals. Given not all parents may have the knowledge/interest to support their children in nature-oriented

endeavors, I again point to my previous recommendation to create opportunities for families to build on their outdoor skills and knowledge. These experiences provide reference for children later in life and make them more comfortable outdoors, expanding their knowledge base of outdoor activities and biodiversity.

### **7.5 Suggestions for Further Research**

The instrument developed for this study should be administered to children while they are visiting a park in order to better understand place meanings for one particular park. This could lead to more specific recommendations for a particular location. The current study was broader in the sense that children reported on a variety of parks and outdoor places. Additionally, follow up interviews with a smaller group of participants would provide a more comprehensive look into children's place making decisions as it would provide the opportunity to ask why children chose certain place meanings over others.

The participants in my study appeared well connected to nature. Thunder Bay is a city surrounded by wilderness and outdoor pursuits are a common pastime for much of the Thunder Bay population. It would be interesting to conduct the research on a population of children in a large urban region (such as Vancouver, Toronto or Montreal) to see how the results differ. Further, people of different races and ethnicities use parks differently and have different visitation rates so it would be useful to see if different place values arise for different groups.

Given that a large percentage of children in my study have visited a federal or provincial park and also given they had relatively high CNI scores, it can be inferred that these children have spent more time in 'wild nature' than most. Taking this into



consideration, it was surprising that this group did not demonstrate an affinity for nature-based activities as we might expect to see. Future research should address how children's affective attitude towards nature informs their recreation choices.

Another area for future research is to examine if creating bonds with family is more prevalent in outdoor nature-oriented vacation venues. It would be interesting to see if children placed equal value on shared family experience for other vacation venues such as trips to an amusement park, zoo, science centre, art gallery or museum. Since time spent with family was influential in creating a sense of place, research should be done on the perceived importance of parks as expressed by the parents and how these compares to children's attitudes about their park visit.

## **7.6 Last Words**

My experiences in nature have played an unequivocal role in shaping my adult life. They have influenced my occupation, hobby, and vacation choices. I have tended to favour nature-oriented trips; the most memorable include summiting an active volcano, diving with manta rays and hiking fantastic Canadian landscapes. My affinity for the outdoors has guided job choices from summers at camp, teaching children how to build fires, to managing a website dedicated to encouraging youth to explore Canada's parks, to training staff at a marine conservation area. I do not doubt that my childhood days spent exploring forest and beaches with my family laid the foundation for these choices.

I recently accepted a job at Fundy National Park where I will work to develop new products and strategies to enhance visitors' experience. I plan on putting theory into practice by taking the knowledge I have gained through my master's research and applying it to my work in an effort to increase family visitation and to create

opportunities for children to connect to the park and more holistically, to nature.

*Age 28 (2015): I pack up my vehicle, piling snowshoes atop hiking boots. I am about to embark on a new chapter in my life. I feel pangs of affection as I watch the red overhanging cliffs pass me by through the driver side window. Following the coastline of Lake Superior, awe-struck by the sheer expanse of the mightiest of the Great Lakes, I reflect on my time in Northwestern Ontario. I have had great adventures exploring the whimsical cedar and pine forests that comprise the Canadian Shield.*

*Three days later, I make it to New Brunswick, anticipation mounting as my destination becomes nearer. I rattle down the windy road that leads to the park, peeking my first glimpse at the formidable Atlantic. I pull over, struck by the welcoming smell of salt as I step out of my vehicle. High tide; the ebb and flow of the water hides the mysterious abyss that lurks underneath. I watch as the waves crest and break, releasing a frothy salutation. The Ocean is calling; it is good to be home.*

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# Park Adventurer Activity Booklet

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

# Park Adventurer Activity Booklet

## Section A

Answer the following questions about the most recent adventure you have had in a provincial or national park.

**1) Have you visited a provincial or national park in the last year? Circle the correct answer.**

**Yes            No**

**If you answered 'yes' to the last question answer question #2 and #3. If you have not visited a provincial or national park in the last year answer questions #4 and #5.**

**2) When did you visit this park? Circle the correct answer.**

- a) Last week
- b) Last month
- c) During the winter
- d) Last summer

**3) What is the name of the park you visited?**

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**If you did not visit a park in the last year please answer the rest of the questions in relation to a special outdoor place.**

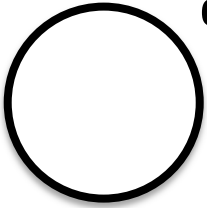
**1) What is a special outdoor place that you have spent time in?**

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5) When did you last visit this place? Circle the correct answer.

- a) Last week
- b) Last month
- c) During the winter
- d) Last summer



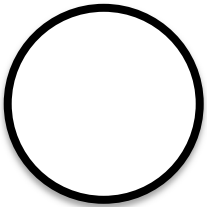
6) Where do you like to explore in the park / outdoor place?

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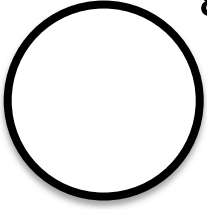
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7) What is something natural in the park / outdoor place that you think is important? Draw a picture of it.

What is it?

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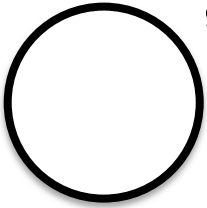
**8) Pretend you are a time traveler. Write down something you know about the history of the park / outdoor place.**

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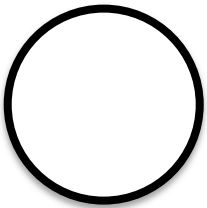
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**9) Draw a picture of something beautiful in the park / outdoor place.**

**What is it?**

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**10) Share a special memory you have had in the park / outdoor place with your family.**

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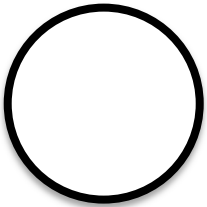
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**11) What is your favourite activity to do in the park / outdoor place? Draw a picture of it.**

**What is it?**

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**12) What do you do with other children in the park?**

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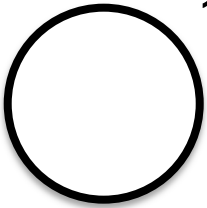
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**13a) Did you stay overnight in the park / outdoor place?**

**Yes      No**

**13b) If you answered 'yes' to the last question, circle which type of accommodation you stayed in on your visit.**



**13c) Did you like staying here?**

**Yes**

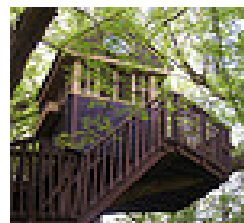
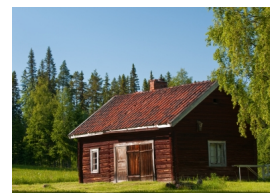
**No**

**13d) Why or why not?**

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**13e) Circle which accommodation you would like to stay in on your next visit.**



**13f) Why would you like to stay here?**

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**Of all of the things you did or saw in the park / outdoor place, which was the most important to you? Show us the most important one by placing a #1 in the circle beside the corresponding question. Place a #2 by the second most important question and a #3 by the third most important question.**



## Section B

The following questions are about your experience in nature. Put a checkmark in the box that best describes how you feel about each statement.

Statements:	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
I like to hear different sounds in nature					
I like to see wild flowers in nature					
When I feel sad, I like to go outside and enjoy nature					
Being in the natural environment makes me feel peaceful					
I like to garden					
Collecting rocks and shells is fun					
I feel sad when wild animals are hurt					
I like to see wild animals living in a clean environment					
I enjoy touching animals and plants					
Taking care of animals is important to me					
Humans are part of the natural world					
People cannot live without plants and animals					
Being out doors makes me happy					
My actions will make the natural world different					
Picking up trash on the ground can help the environment					
People do not have the right to change the natural environment					

## Appendix B

### Adult Questionnaire

Please fill out the following information about your child.

Age:

Gender:

Number of siblings:

City/Town of residence: \_\_\_\_\_

Has your child visited a national or provincial park before?

Yes            No

If yes, approximately how many times? \_\_\_\_\_

On average how many days a week would you say your child plays outside: \_\_\_\_\_

Would you say your child enjoys being outside in nature?

---

Please fill out the following information about you:

Have you ever visited a national or provincial park before?

Yes            No

If yes, approximately how many times? \_\_\_\_\_

Would you be more likely to stay overnight in a park if it offered one or all of the following accommodation options?



A Cabin



An OTenTik



A Yurt



## Appendix C

### Parent Cover Letter

Date

You and your child are being invited to participate in a research project being conducted by Claire DeLong, a Master student, from the School of Outdoor Recreation, Parks and Tourism, Lakehead University. The title of the project is *“Measuring Child Sense of Place and Connectivity to Nature in Parks”*. The purpose of this project is to examine what factors contribute to a child having a sense of place in a park and a strong connection to nature, with particular focus on how accommodation may affect connection to nature.

I am requesting your child complete a survey in the form of an activity booklet. It will ask questions about their experience in parks. Completion of the booklet will take approximately 15 minutes. After completion of the booklet your child will be asked questions regarding the usability of the survey. The interview will take approximately 15 minutes. Their participation is voluntary and they are free to refrain from answering any questions and may withdraw from participation at any time. There are minimal risks to participating in this study. Their participation will be extremely beneficial and much appreciated, as it will provide me with the information needed to examine the factors that affect child sense of place in a park; ultimately, this may assist with the development of effective strategies to increase child park visitation. Your participation includes filling out the attached adult questionnaire and reading over the child survey and answering questions about the usability of both.

The information obtained from the booklet and adult questionnaire will be summarized in group form for presentation or publication. The final paper will comprise Claire DeLong’s Master’s thesis. After the completion of this project the data will be used by Parks Canada. Some quotes / pictures from the booklet may be used if they are particularly informative or give a good example of a typical opinion of all participants. If this is the case, you or your child will be referred to by a pseudonym. Unfortunately, you will not be able to review your contribution before inclusion. You will have the opportunity to opt out of being included in any potential publications by checking the ‘no’ box on the consent form. Anonymity and confidentiality will be maintained throughout the research process. You and your child’s name, affiliation and contact information will not appear in any documents or presentations related to this research. Only the research team will have access to this data, which will be stored in a locked filing cabinet in the lead researcher’s office. Upon completion of the project, the data will be securely stored for five years at the university, as is required by policy.

Please feel free to contact the lead researcher if you have any concerns, at the contact information provided below. This project has been approved by the Lakehead University Research Ethics Board; if you have any questions related to the ethics of the research, please contact the Board at 807-343-8283.

Thank you for your time and consideration.

Sincerely,

Claire DeLong  
PH 807-630-2321  
[cdelong@lakeheadu.ca](mailto:cdelong@lakeheadu.ca)

Supervisor: Dr. Rhonda Koster  
PH 807-343-8440  
[rkoster@lakeheadu.ca](mailto:rkoster@lakeheadu.ca)

## Appendix D

### Consent Form: Copy for Researcher

By signing this document, you are indicating your willingness for you and your child to participate in this study and that you understand and agree to the following conditions:

1. Your participation in this research is voluntary.
2. Your anonymity and confidentiality will be maintained throughout the research process and documents.
3. The information you provide will be utilized to create documents for publication.
4. The data generated from this research will be kept at Lakehead University for 5 years.
5. You will receive copies of publications that result from this research upon request.

Adult Participant:

Researcher: Claire DeLong

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Signature

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Signature

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Date

---

Date

Child Participant:

Researcher: Claire DeLong

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Signature

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Signature

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Date

---

Date

Pictures or quotes submitted by you or your child may be used by the researcher or Parks Canada in publications that may result from this research.

Yes

No

## Appendix E

### Interview Questions

- 1) Was there anything in the Child Park Adventurer Activity Booklet that you did not understand?
- 2) Were there any parts of the booklet that wording was difficult to understand?
- 3) Approximately how long did it take you to complete the Child Park Adventurer Activity Booklet?
- 4) Which type of questions did you enjoy answering the most?
  - When you drew a picture to convey your answer
  - When you wrote your answer in writing.
  - When you circled a picture.
  - When you checked a box.
- 5) Please tell me which questions you liked best / found the easiest in Section A and why.
- 6) Please tell me which questions you liked best / found the easiest in Section B and why.

Do you have any comments to make about the adult questionnaire? (Wording? Complicated? Hard to understand? Length? Etc.)

## Appendix F

### Principal Cover Letter

Dear \_\_\_\_\_,

Your school is being invited to participate in a research project being conducted by Claire DeLong, a Master student, from the School of Outdoor Recreation, Parks and Tourism, Lakehead University. The title of the project is *“Measuring Child Sense of Place and Connectivity to Nature in Parks”*.

Parks provide a place where children can engage with nature and are of special importance given the associated benefits of spending time outdoors. The Parks Canada Agency has reported a decrease in young visitors. They recognize the need to make changes towards a more youth friendly system in order to better meet the evolving demands of our society. It is not solely getting children into natural spaces, but creating opportunities for children to build a connection to the natural world and develop attachments to natural places.

The purpose of this project is to find out what factors contribute to a child having a sense of place in a park and a strong connection to nature, with particular focus on how accommodation may affect connection to nature.

The Thunder Bay Catholic District School Board has approved this research project. Students eligible to participate in this research are grade 3-6 students. If your school agrees to participate, cover letters explaining the study will be provided to teachers and parents, as well as a consent form for both students and parents to sign. Surveys in the form of activity booklets will be given to teachers to be completed by their students during class time. A short adult questionnaire will be sent home with students to be completed by their parents. All students will complete the booklet so as not to ostracize students who do not have signed parental consent forms. Surveys that do not have an accompanying consent form will be discarded and none of their data will be used for analysis. Children who complete the survey will have their names entered in a draw to win an outdoor activity pack.

The information obtained from the survey booklet and adult questionnaire will be summarized in group form for presentation or publication. The final paper will comprise of Claire DeLong’s Master’s thesis, which will be viewed by Parks Canada.

Throughout the life of this research project, only the principal researcher (Claire DeLong) and project supervisor (Rhonda Koster) will have access to the data. Confidentiality forms will be required for anyone else working on the project. After the completion of this project the data will be used by Parks Canada. All physical data will be kept in my office at Lakehead University (SN2002AA) in a locked in a desk drawer. Computer-generated data will be password protected. Physical data and electronic data will be stored for five years after the completion of the project in the office of the project supervisor, Rhonda Koster.



## Appendix G

### Teacher Cover Letter

Date \_\_\_\_\_

Dear \_\_\_\_\_,

Your class is being invited to participate in a research project being conducted by Claire DeLong, a Master student, from the School of Outdoor Recreation, Parks and Tourism, Lakehead University. The title of the project is *“Measuring Child Sense of Place and Connectivity to Nature in Parks”*. The purpose of this project is to find out what factors contribute to a child having a sense of place in a park and a strong connection to nature, with particular focus on how accommodation may affect connection to nature.

Please send each student home with an adult questionnaire, cover letter and consent form. Allow for a week for consent forms and adult questionnaires to be returned. At your convenience distribute the survey booklet to students. Explain that they are completing the park adventurer booklet to share their experiences in parks and in nature. If they can't recall visiting a park in the past year then they can fill out the booklet in relation to a special outdoor place they visited (summer camp, family cabin, garden, nature trail etc.) All students will complete the booklet so as not to ostracize students who have not returned a signed parental consent form. Surveys that do not have an accompanying consent form will be discarded and none of their data will be used for analysis. Children who complete the survey will have their names entered in a draw to win an outdoor activity pack. Once completed please place parent surveys, consent forms and child survey booklets in the envelope provided and return to the office.

Thunder Bay Catholic School Board and your principal have approved this research project. Please feel free to contact the lead researcher if you have any concerns, at the contact information provided below. The Lakehead University Research Ethics Board has approved this project; if you have any questions related to the ethics of the research, please contact the Board at 807-343-8283.

Thank you for your time and consideration.

Sincerely,

Claire DeLong  
PH 807-630-2321  
[cdelong@lakeheadu.ca](mailto:cdelong@lakeheadu.ca)

Supervisor: Dr. Rhonda Koster  
PH 807-343-8440  
[rkoster@lakeheadu.ca](mailto:rkoster@lakeheadu.ca)

Please feel free to contact the lead researcher if you have any concerns, at the contact information provided below. This project has been approved by the Lakehead University Research Ethics Board; if you have any questions related to the ethics of the research, please contact the Board at 807-343-8283.

Thank you for your time and consideration.

Sincerely,

Claire DeLong  
PH 807-630-2321  
[cdelong@lakeheadu.ca](mailto:cdelong@lakeheadu.ca)

Supervisor: Dr. Rhonda Koster  
PH 807-343-8440  
[rkoster@lakeheadu.ca](mailto:rkoster@lakeheadu.ca)

## Appendix H Parent Cover Letter

You and your child are being invited to participate in a research project being conducted by Claire DeLong, a Master student, from the School of Outdoor Recreation, Parks and Tourism, Lakehead University. The title of the project is *“Measuring Child Sense of Place and Connectivity to Nature in Parks”*. The purpose of this project is to examine what factors contribute to a child having a sense of place in a park and a strong connection to nature, with particular focus on how accommodation may affect connection to nature.

I am requesting your child complete a survey in the form of an activity booklet. It is to be completed in school and will ask questions about their experience in parks. Completion of the booklet will take approximately 15-20 minutes. Your child will complete the survey during a designated time in class chosen by the teacher. Their participation is voluntary and they are free to refrain from answering any questions and may withdraw from participation at any time. Your child’s education will not be compromised in any way if the child does not participate or withdraws from participation. Their participation will be extremely beneficial and much appreciated, as it will provide me with the information needed to examine the factors that affect child sense of place in a park; ultimately, this may assist with the development of effective strategies to increase child park visitation. **Your participation includes filling out the attached adult questionnaire and consent letter and returning it to your child’s homeroom teacher.** If you give consent for your child’s survey to be used for the purposes of this research, his/her name will be entered in a draw to win a \$25 gift certificate to Canadian Tire and an outdoor activity pack.

The information obtained from the booklet and adult questionnaire will be summarized in group form for presentation or publication. The final paper will comprise Claire DeLong’s Master’s thesis. After the completion of this project the data will be used by Parks Canada. Some quotes / pictures from the booklet may be used if they are particularly informative or give a good example of a typical opinion of all participants. If this is the case, you or your child will be referred to by a pseudonym. Unfortunately, you will not be able to review your contribution before inclusion. You will have the opportunity to opt out of being included in any potential publications by checking the ‘no’ box on the consent form. Anonymity and confidentiality will be maintained throughout the research process. You and your child’s name, affiliation and contact information will not appear in any documents or presentations related to this research. Only the research team will have access to this data, which will be stored in a locked filing cabinet in the lead researcher’s office. Upon completion of the project, the data will be securely stored for five years at the university, as is required by policy.

Please feel free to contact the lead researcher if you have any concerns, at the contact information provided below. This project has been approved by the Lakehead University Research Ethics Board; if you have any questions related to the ethics of the research, please contact the Board at 807-343-8283.

Thank you for your time and consideration.

Sincerely,

Claire DeLong

Supervisor: Dr. Rhonda Koster

PH 807-355-2180  
[cdelong@lakeheadu.ca](mailto:cdelong@lakeheadu.ca)

PH 807-343-8440  
[rkoster@lakeheadu.ca](mailto:rkoster@lakeheadu.ca)

Appendix I

# Park Adventurer Activity Booklet

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

## Section A

National and provincial parks are places where you can spend time in nature. In some parks you can camp overnight. Sleeping Giant and Kakabeka Falls are examples of provincial parks. Banff and Jasper are examples of national parks.

Answer the following questions about your trip to a park for a chance to win a park adventurer pack!

1a) Have you visited a provincial or national park before? Circle the correct answer.

Yes          No

1b) What is the name of the park you visited?

---

1c) If you have NOT visited a park please answer the rest of the questions about an outdoor place that is special to you (such as a camp, fort or trail). Write the name of the special outdoor place on the line below.

---

2) When did you last visit the park OR outdoor place?  
Circle the correct answer.

- a) Last week
- b) Last month
- c) During the winter
- d) Last summer
- e) More than a year ago

**3) Where do you like to explore in the park OR outdoor place?**

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**4) What is something you saw in nature at the park OR outdoor place that is important to you? Draw a picture of it.**

**What is it?**

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**5) Share a special memory you have had in the park OR outdoor place with your family.**

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**6) Draw a picture of something beautiful in the park OR outdoor place.**

**What is it?**

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**7) What is your favourite activity to do in the park OR outdoor place? Draw a picture of it.**

**What is it?**

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**8) What do you like to do with other children in the park OR outdoor place?**

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**9a) Did you stay overnight in the park OR outdoor place?**

**Yes            No**

**9b) If you answered 'yes' to the last question, circle what you slept in on your visit.**



Tent



Camper



Yurt



Cabin

house



oTENTik



Tree

**9c) Did you like sleeping here?**

**Yes            No**

**9d) Why or why not?**

---

---

9e) Circle what you would like to sleep in on your next visit.



Tent



Camper



Yurt



Cabin



oTENTik



Tree house

9f) Why would you like to sleep here?

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**10a) From the list below circle your 3 favourite things about the park OR outdoor place.**

**Exploring**

**Being in nature**

**Seeing something beautiful**

**Time with family**

**Time with friends**

**Your favourite activity**

**Where you slept**

**10b) Of the 3 you circled which is the most important to you?**

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**10c) Of the 3 you circled which is the 2<sup>nd</sup> most important to you?**

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## Section B

The following questions are about your experience in nature. Put a checkmark in the box that best describes how you feel about each statement.

Statements:	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
I like to hear different sounds in nature					
I like to see wild flowers in nature					
When I feel sad, I like to go outside and enjoy nature					
Being in the natural environment makes me feel peaceful					
I like to garden					
Collecting rocks and shells is fun					
I feel sad when wild animals are hurt					
I like to see wild animals living in a clean environment					
I enjoy touching animals and plants					
Taking care of animals is important to me					
Humans are part of the natural world					
People cannot live without plants and animals					
Being outdoors makes me happy					
My actions will make the natural world different					
Picking up trash on the ground can help the environment					
People do not have the right to change the natural environment					

**Appendix J**  
**Adult Questionnaire**

**Please fill out the following information about your child.**

Age: \_\_\_\_\_

Grade: \_\_\_\_\_

Gender: \_\_\_\_\_

Number of siblings: \_\_\_\_\_

School: \_\_\_\_\_

City/Town of residence: \_\_\_\_\_

Has your child visited a national or provincial park before?

Yes            No

If yes, approximately how many times? \_\_\_\_\_

On average how many days a week would you say your child plays outside? \_\_\_\_\_

On average how many hours a day would you say your child plays outside? \_\_\_\_\_

Would you say your child enjoys being outside in nature?

\_\_\_\_\_

**Please fill out the following information about you:**

Have you ever visited a national or provincial park before?

Yes            No

If yes, approximately how many times? Please circle the correct answer.

0                    1-5                    6-10                    11-20                    21+

Would you be more likely to stay overnight in a park if it offered one or all of the following accommodation options?



Yurt



Cabin



oTENTik



Tree house

**Yes / No**

Please explain your answer in the space provided.

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