THE INFLUENCE OF PERCEIVED RISK ON PARTICIPATION IN OUTDOOR EDUCATION ACTIVITIES BY PRE-TEEN AGE SCHOOLCHILDREN IN NEW ZEALAND

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or other institution of higher leaning.

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Mark Lewis Jones

25 February 2011

ABSTRACT

Outdoor education is a formal part of the New Zealand school curriculum under the auspices of Education Outside the Classroom (EOTC). Anecdotally New Zealand parents and teachers are becoming more risk averse as a result of high profile fatalities associated with outdoor recreation. Consequently, it is important to understand how risk is perceived by parents and teachers and what influence it may be having on participation rates and programming for outdoor education. Views on perceived risk were gained from teachers with responsibilities related to EOTC (n=276) and parents from primary and intermediate school boards of trustees (n=534) via an online self-reply questionnaire. Eleven semi-structured telephone interviews were also conducted with key informants from providers of outdoor education to these schools. Higher levels of the risk of serious harm perceived by teachers (moderate risk compared with low risk for parents) are likely to be related to a greater emphasis on and increased discourse around safety in EOTC and their responsibility for the safety of children in their school when undertaking outdoor education activities. Accidents and fatalities reported in the media increased parental anxiety, but only resulted in isolated cases of parents preventing their children from participating in outdoor education programmes. A small proportion of schools (8%) responded to accidents and fatalities reported in the media by reducing outdoor education programmes. Aversion to water activities in outdoor education by some schools was shown and is likely symptomatic of high perceived risk of the aquatic environment. Outdoor activities such as canoe sports on rivers and climbing/abseiling from cliffs were perceived to be the most risky activities by both parents and teachers. There were isolated cases of parents, and sometimes, whole schools cancelling outdoor education trips for children. These were seized on by the media as documented proof of "wrapping children in cotton wool", "paranoid parenting" and other phenomenon implying parents or teachers are risk averse to an unhealthy degree. This study has provided empirical data showing that the vast majority of parents and teachers do not respond in a risk averse way as a result of high profile fatalities associated with outdoor recreation.

Keywords: Risk perception, schoolchildren, outdoor recreation, outdoor education, EOTC

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TERMINOLOGY USED THROUGHOUT THIS THESIS

Nomenclature	Definition
Composite Schools	A composite school is one that combines different year levels and often those that cross the 'levels' of education. For example a composite school may combine the Intermediate School level (Year 7-8) with the Secondary School level (Year 9-13), or it may cover every year of schooling (Year 1-13).
Contributing Schools	Schools catering for Year 1-6 learning.
Decile Rating	A school's decile indicates the extent to which it draws its students from low socioeconomic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socioeconomic communities. Decile 10 schools are the 10% of schools with the lowest proportion of these students.
Kura Kaupapa	Maori-language immersion schools (kura) where the philosophy and practice reflect Māori cultural values with the aim of revitalising Maori language, knowledge and culture.
Opportunity Sampling	Or convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand, i.e., a sample population selected because it is readily available and convenient.
Purposive Sampling	Starts with a purpose in mind so the sample is selected to include people of interest and exclude those who do not suit the purpose. Purposive sampling is non-probability and hence can be subject to bias and error
Te Reo	The Maori language

ABBREVIATIONS USED THROUGHOUT THIS THESIS

Nomenclature	Definition
AUTEC	Auckland University of Technology Ethics Committee
BoT	Board of Trustees
CI	Confidence Interval
DOC	Department of Conservation
EOTC	Education Outside the Classroom
H&PE	Health and Physical Education
MERC	Sir Peter Blake Marine Education and Recreation Centre
NID	National Incident Database
NZMSC	New Zealand Mountain Safety Council
NZOIA	New Zealand Outdoor Instructors Association
NZPF	New Zealand Principals' Federation
NZSTA	New Zealand School Trustees Association
OAE	Outdoor Adventure Education
ONZ	Outdoors New Zealand
PASW	Predictive Analytics Software
P	Participant
PP	Precautionary Principle
RAMS	Risk Analysis and Management System
SARF	Social Amplification of Risk Framework
SPSS	Statistical Package for the Social Sciences
WSNZ	Water Safety New Zealand

CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Involvement in outdoor recreation and sport activities provides significant benefits for individuals, communities and nations (Kane & Tucker, 2007; Plummer, 2009). As a consequence, New Zealand has a long tradition of including outdoor education as part of the school curriculum (Lynch, 1998). Such activities occur in the learning area of outdoor education (which occurs under the broader classification of Education Outside the Classroom or EOTC in New Zealand) and foster learning and enthusiasm for outdoor recreation in school age children. The potential rewards of regular engagement in physical activity in the outdoors include physical, psychological and social benefits (Ewert, 1989).

Despite increasing investment in the outdoor recreation sector (particularly in promoting physical activity in the outdoors) in New Zealand (SPARC, 2008a) a wide range of indicators show that New Zealanders are becoming increasingly sedentary. These include increasing levels of obesity and obesity related health issues (SPARC, 2008b), decreasing numbers of children walking to school (Ministry of Transport, 2008) and an increasing proportion of leisure time spent inactive involved in past-times such as television watching, computer and mobile-phone usage and listening to music (Vandelanotte, Sugiyama, Gardiner, & Owen, 2009).

New Zealand promotes itself internationally as an 'adventure capital' with exciting and adventurous outdoor activities and opportunities as a central part of the 'Kiwi lifestyle'. This reputation has value from a tourism perspective (Cloke & Perkins, 2002; Kane, 2008) and also contributes to New Zealanders' self-perception and national pride. What is becoming clear is that there is a growing discrepancy between New Zealand's external and self-image as a healthy, active and adventurous nation and the reality of a country whose population is dominated by urban dwellers with predominantly sedentary and inactive lifestyles (Eames, 2008).

There have, in recent years, been a number of high profile accidents and fatalities associated with outdoor recreation, outdoor education and adventure tourism activities. These include the Mangatepopo river canyoning fatalities (Devonport, 2010) the death

of a university student involved in bridge swing activities in the Manawatu Gorge (Miller, 2009), the death of an English tourist who was participating in river-boarding activities in the Kawarau Gorge (Williams, 2009) and a number of injuries and fatalities associated with alpine and snow related activities (Lynch, 2009) These and other accidents appear to be having an impact on the willingness of both schools and the parents of schoolchildren to allow children to participate in off-site recreation and outdoor education visits, field-trips and school camps. At least one well established outdoor education provider reported a significant number of cancellations and associated financial difficulties as a consequence of the Mangatepopo tragedy ("Education centre solves cash flow woes," 2008).

Perceptions of risk have long been recognised as an important influence on the decision-making of potential participants in recreational activities (Dickson, Chapman, & Hurrell, 2000). Parents appear to be becoming more risk averse and cite safety concerns as an important issue in terms of allowing their children to participate in recreation activities, walking or cycling to school and playing outside unsupervised (Carver, Timperio, & Crawford, 2007). Risk is an inherent part of outdoor recreation. Confronting the risks and managing these are part of the appeal for participants testing themselves in challenging environments (Davidson, 2008).

A range of research on outdoor pursuits that are inherently adventurous (and therefore have risk for participants) has shown that such activities can be powerful learning experiences (Gair, 1997; Hirsch, 1999; Mortlock, 1983). As a consequence, adventurous nature-based recreation activities have been utilised within the New Zealand school curriculum in EOTC (Haddock, 2007; Lynch, 2006; Stothart, 2000). Teachers and outdoor education leaders attempt to create situations that move students out of their ‘comfort zones’ so there is a match between task difficulty and participant competence (Haddock, 1993). The outcome of such experiences can lead to an improvement in a range of social and personal development indicators (Priest, 1999a). The natural environment is the most common setting where such activities are conducted because it provides a degree of challenge through the nature of the terrain (or water), its inherent uncertainty, and because participants are generally unfamiliar with it.

Despite a sound understanding of the benefits of risk, outdoor education, and New Zealand schools' curriculum requirement for EOTC, there is no empirical research that explores the influence of perceived risk on participation in outdoor education activities for New Zealand schoolchildren. There is anecdotal evidence of reduced participation as a consequence of high-profile accidents associated with outdoor adventure pursuits; popular press articles (e.g. Kenworthy, 2010; Wong, 2005) suggest that New Zealand society is becoming less tolerant of risk. Gathering and analysing empirical data would help determine if these suggested effects are having a measurable effect on the outdoor education opportunity for young New Zealanders.

1.2 Study Aims and Objectives

Parents and teachers are the key decision makers with regard to schoolchildren's participation in outdoor education. The aims of this study were to: explore the role of risk perception on decisions influencing participation in outdoor education. More specifically to investigate the perceptions of parents and teachers of the risks associated with outdoor education and determine how these affected outdoor education opportunities for children.

To achieve these aims the study had a number of specific research objectives:

1. To assess the influence of perceived risk on primary and intermediate school decisions regarding outdoor recreation/education activities for pupils.
2. To evaluate outdoor recreation/education providers' views on the influence of perceived risk on participation in programmes and services provided for pupils.
3. To understand the influence of perceived risk on parents' decisions regarding children's participation in outdoor recreation/education activities.
4. To provide clarity of the effect that the loss of seven lives, which occurred in 2007 in a single outdoor education incident, had on participation in outdoor education.
5. To compare the perception of risk in outdoor education of parents and teachers.
6. To evaluate the possible effect of demographics on risk perception.

The specific research questions and related hypotheses are developed at the end of Chapter 2: Literature Review (pp. 49-52 this thesis).

1.3 Significance of the Study

A number of health indicators suggest there is cause for concern regarding the activity levels of New Zealand school children. If outdoor recreation opportunities are an important foundation in the establishment of healthy active lifestyles, and, as the literature suggests, western society is becoming increasingly averse to risk, especially where children are concerned, then it is important to measure to what extent this issue influences outdoor education opportunity for New Zealand schoolchildren. This research makes an important contribution to our understanding of participation in outdoor activities at school level, and the influence of perceived risk on programming and consent in outdoor education. Data produced from this research will improve the understanding of these factors and can be utilised to inform decision-making regarding management and promotion of active and healthy lifestyles in New Zealand children.

1.4 Thesis Structure

Chapter 2: Literature Review presents a broad background to this study. A comprehensive anthology of relevant literature is examined under four broad headings: The Public Worth of Outdoor Recreation, Recreation Activities in Outdoor Education, Risk in Society, and Media Reporting and Risk Perception. The chapter concludes with the development of the research questions and related hypotheses that were informed by the literature.

Chapter 3: Methods establishes the research approach adopted and details the specific methodology employed. The instruments used to gather data and how these were analysed are explained. Procedures used are justified with reference to other studies and established best practices. Data related to samples and collection efforts are presented here. The chapter considers reliability, validity and ethical considerations related to the study.

Chapter 4: Results is primarily concerned with the data gathered and their analysis. These are presented in tables where appropriate throughout the chapter. Appropriate tests for the various hypotheses are presented for each research question sequentially. All discussion of the results is reserved until Chapter 5.

Chapter 5: Discussion considers the findings in light of other research; most of these sources were introduced in the literature review. The results for each research question are discussed in the order they are presented in the results chapter with the key findings reiterated.

Chapter 6: Conclusion summarises the key findings, and considers their implications for teachers, providers, school managers and educational policy-makers. The study is evaluated in light of its limitations and recommendations are made for further research.

Further clarification of the assembly of the thesis and the structure of chapters may be obtained from the structure diagram of the thesis provided (see Figure 1.1, p. 6).

THESIS STRUCTURE

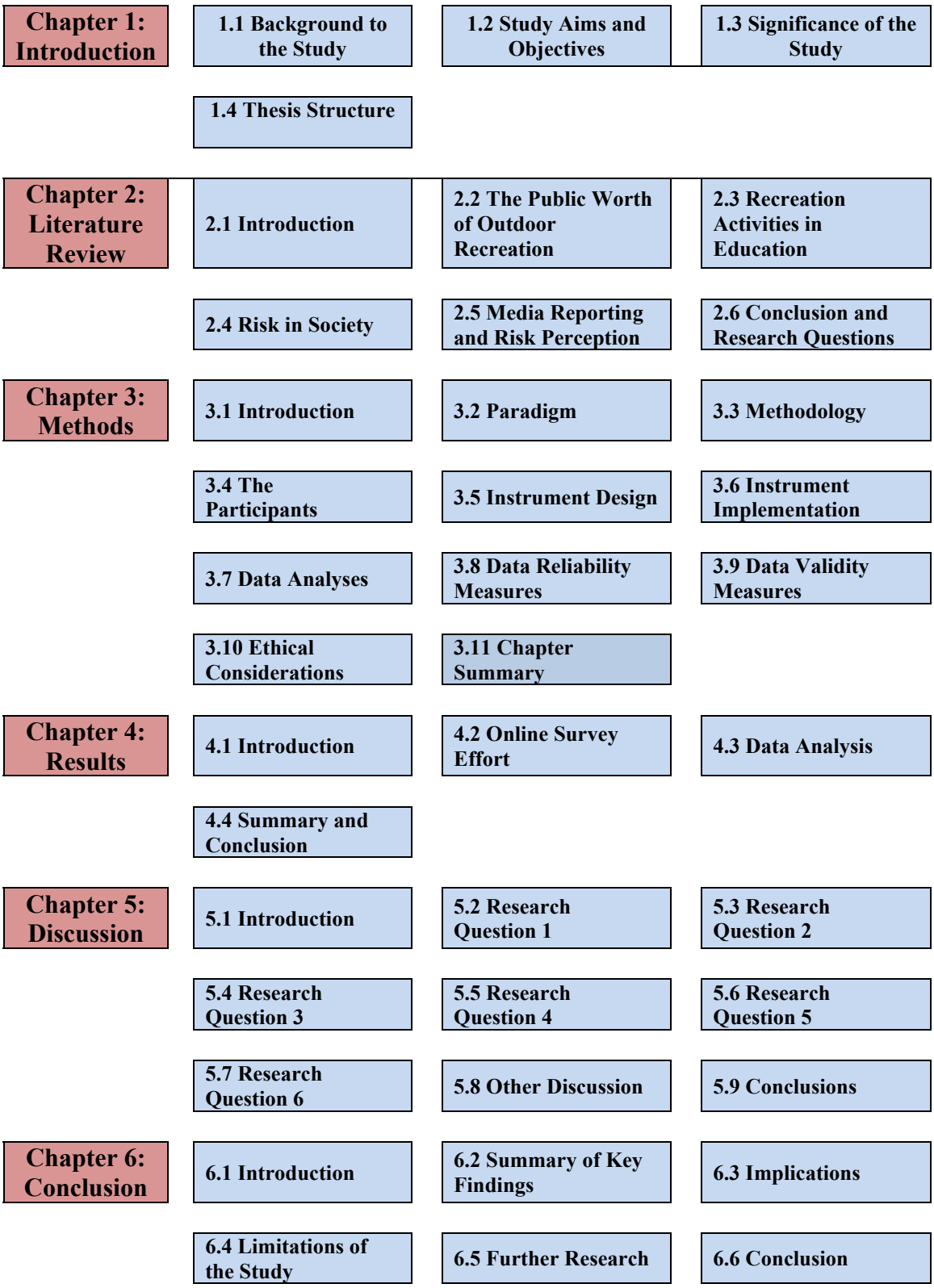

Figure 1.1 *Structure Diagram of Thesis*

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides a broad introduction to the context and thoughts that informed the research questions and have led to the interpretations presented in this thesis. The findings begin with an overview of leisure and recreation, and adventure recreation. The benefits of outdoor recreation to New Zealanders are then investigated. Participation in such activities within New Zealand is examined. The concept of outdoor education and its place in New Zealand schooling as a curriculum subject is developed. Included in this is a description of the nature of outdoor education, what activities are used, where they take place and participation rates. The contested understandings of risk, and the theoretical ideas that underpin risk perception follow. This section explores how society and individuals respond to risk and the apparent implications for children and youth in New Zealand. The following section examines the place of risk in outdoor education. Following this, the media's role as a risk perception amplifier is considered with regard to reporting of outdoor incidents. Finally, media reporting of parental risk aversion and outdoor incidents are investigated. This section is presented as preparatory framing of the key research question. The final section of this chapter provides clarification of the research questions, and an indication of how these questions evolved.

2.2 The Public Worth of Outdoor Recreation

This review is based on the premise that outdoor recreation activities encountered at a young age make a valuable contribution to the development of active, healthy, life styles. Before exploring this premise the key elements of the area of investigation are defined. The cultural origins of outdoor recreation and its place in New Zealand culture follows. Contemporary outdoor recreation is then considered in terms of its potential to help achieve a number of government health initiatives. Finally participation in outdoor recreation in New Zealand is explored.

2.2.1 Leisure, Recreation, and Outdoor Recreation

Kelly (1982) characterised leisure as "…the quality of activity defined by relative freedom and intrinsic satisfaction" (p. 82). 'Intrinsic satisfaction' was also adopted by Priest (1990) as one of his criteria for leisure, though he reframed 'relative freedom' as participating voluntarily. While the term recreation is often used interchangeably with "leisure" it has a different origin being derived from the Latin Word *recreatio* meaning "to refresh" and *recreare* meaning "to restore" (Edginton, Jordan, DeGraaf, & Edginton, 1995). Recreation then is the expenditure of time in a manner designed for therapeutic refreshment of one's body or mind. Recreation activities take place within the leisure experience and are active for the participant in a refreshing and diverting manner (Priest, 1990). Time for recreation became established as an important element of culture throughout the twentieth century and socially positive values associated with recreation activities endure (Plummer, 2009). Such is the value placed on recreation activities by society today that it is enshrined in the United Nation Declaration of the Rights of the Child (2010) which state:

> The child shall have full opportunity for play and recreation, which should be directed to the same purposes as education; society and the public authorities shall endeavour to promote the enjoyment of this right.

Outdoor recreation has been a widely used term in leisure studies for more than 50 years and numerous definitions have emerged over that time. The broadest perhaps from Priest (1990), interpreting the term as simply recreation outside. Most writers however have associated outdoor recreation specifically with the natural environment. From Plummer's (2009) summary of definitions found in the literature, outdoor recreation was defined as "…voluntary participation in free-time activity that occurs in the

outdoors and embraces the interaction of people with the natural environment" (p. 18). In order to fully capture the intent of outdoor recreation experiences (Jensen, 1995) defined five objectives of outdoor recreation:

1. Appreciation of nature - both in terms of knowledge and understanding of ecological processes and an awareness of our impact on nature.
2. Personal satisfaction and enjoyment.
3. Physiological fitness - through engaging actively with the environment.
4. Positive behaviour patterns - outdoor recreation activities should instil respect, consideration and sincerity toward fellow participants and others encountered.
5. Stewardship - engagement with nature provides opportunity to demonstrate moral and ethical values toward the environment. Stewardship should, according to Jensen (1995), be the primary aim and underlying spirit of outdoor recreation.

Outdoor recreation is an intrinsically rewarding activity with a number of physical and mental health benefits to participants (Driver, 1976; Driver & Brown, 1991; Edginton, et al., 1995; Godbey, 1999; Hanna, 1991; Humberstone & Stan, 2009; SPARC, 2008b).

One of the unique characteristics of outdoor recreation is the environment it takes place within. There is a strong body of research which supports the value of natural outdoor environments to human development, especially to children (Driver & Brown, 1991; Morris, 2003; SPARC, 2008b). Outdoor recreation, in all its various forms is an important means by which people access nature and engage with natural environments in varied and rewarding ways. The value extends beyond the individual to communities and to the environment itself (Jensen, 1995). However the literature shows growing concern over the shrinking opportunities for children to engage in challenging outdoor play over the last two decades (Carver, Timperio, & Crawford, 2007; Clements, 2004; Hughs, 1990; Prezza, Alparone, Cristallo, & Luigi, 2005).

2.2.2 Adventure Recreation

Adventure and outdoor recreation are inextricably linked. Adventure is defined by Priest (1990) as an experience where the outcome is uncertain because key information may be missing or unknown. Situations with incomplete information result in both challenge and risk and it is by successfully exceeding the demands of challenging and

risky situations that adventurers achieve satisfaction (Davidson, 2008; Møller, 2007). Many outdoor recreation activities, either because of the environment they take place within or because of the nature of the activity will have an element of adventure associated with them.

In the field of psychology there are many terms to describe the human need for heightened experiences: 'thrill seeking', 'adventure seeking', and 'novelty seeking', all attempt to capture the need for excitement, new situations, or arousal to attain pleasurable sensations and feelings, the ultimate form being ecstatic joy. Zuckerman (1994) described this trait as 'sensation seeking', defining it as "the seeking of varied, novel, complex and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences" (p. 27).

Although risk is an integral part of adventure sports risk may not be the aim of adventure sports or a principle reason for participation. Participants of adventure sports are seldom thrill seekers leaving their fate up to chance and gambling with their lives (Hersey, 2008; Krein, 2007). Participants usually do their best to minimize risks they are exposed to by ensuring their skills are at an appropriate level, wearing protective equipment, checking the quality and functionality of critical equipment, while also acknowledging that residual risk remains (Delle Fave, Bassi, & Massimini, 2003; Hersey, 2008; Krein, 2007).

A number of outdoor educators have expressed the value of adventure to individuals, such as Mortlock (2001), theorising that people need outlets for their adventurous instincts and postulating that much of the antisocial and criminal behaviour young people exhibit can be attributed to the need for challenge and excitement. These theories and the place of adventure in New Zealand adventure are expanded upon in the section *Adventure and Risk in Outdoor Education,* (p. 18 this thesis).

2.2.3 Cultural Origins and National Identity

This section explores the cultural origins of outdoor recreation in New Zealand as a means of establishing its value to New Zealand identity and culture.

Outdoor physical pursuits were an integral part of pre-European indigenous culture in New Zealand. Canoe racing, surf riding, tobogganing, swimming and training for warfare as recreation were all identified as part of Maori Culture (Buck, 1966). Wherever the British went, sports and recreational pastimes were exported to the colonies as part of their cultural baggage (Crawford, 1986). However the rigours of the pioneering colonial life in New Zealand allowed little time for recreation. Outdoor recreation was shaped by economic realities and reflected pioneering necessities. Hunting, fishing and riding were common outdoor recreation activities (Lynch, 1999) that developed abilities serving to improve their lot as well as provide a recreational outlet. Traditional outdoor pursuits such as hunting were adapted and modified to the environment of New Zealand; there being no deer prior to the acclimitisations of the early 20th century, pig hunting was established as the first truly New Zealand field sport (Crawford, 1986). Navigable waterways enticed settlers to take up boating recreationally. The traditional dugout canoe or kopapa was commonly used for this purpose for both Maori and Pakeha (Lynch, 1999). Michael King (2003) stated that outdoor recreation had been a characteristic part of the New Zealand culture from as early as the 19th century. Recreational clubs were established early in nascent New Zealand focused on activities such as sailing, mountaineering and skiing. The first canoe club in New Zealand was established in 1876 in Wellington, Tainui Canoe Club and The New Zealand Alpine Club was established in 1891 (Lynch, 1999).

The earliest accounts of outdoor recreation in school experiences that have much in common with outdoor education as we know it today are from the 1850s and 1860s. These were in the form of multi-day journey hikes involving camping-out in tents, “learning by doing, physical exercise, and nature study” (Lynch, 1999). Outdoor experiences offered through schools became increasingly commonplace. School clubs were one way in which children learnt skills and engaged in recreation pursuits in the outdoors.

Significant in orienting recreation in New Zealand toward outdoor adventurous activities were the Scouting and Outward Bound movements (Kane, 2008). The first scout troop was registered in 1908, just one year after Robert Baden-Powell established the first Scouting camp in Dorset, England (Scouts New Zealand, 2010). The Outward Bound movement was founded by Kurt Hahn in Wales in 1941 and Cobham Outward

Bound School was built in 1962 in the South Island near Picton (Outward Bound New Zealand, 2010). Both these institutions promoted physical activity and provided an avenue for young New Zealanders to gain outdoor skills and to participate in outdoor recreation. Outward Bound continues to use adventurous outdoor pursuits in Anakiwa to fulfil its vision of: "better people, better communities, better world" (Outward Bound New Zealand, 2010).

The 1877 Education Act specified that provision should be made for physical activity training. This established the foundation for the physical education which followed, later to become an integral component of the curriculum (Stothart, 2000). It was often under the guise of physical education that children were introduced to outdoor recreation activities. By the mid 1960s adventurous outdoor pursuits were established as the norm in outdoor education (Lynch, 2006).

Tourism, one of New Zealand's earliest industries, had its roots in outdoor recreation, flourishing when both locals and international tourists responded to greater free time, disposable income and mobility (Devlin, 1995). Adventure tourism has evolved as an important component of the tourism sector in NZ responding to the human desire for excitement through outdoor recreation (Cloke & Perkins, 2002). The modern advent of adventure tourism is inextricably linked with outdoor recreation activities in New Zealand, sharing as it does the same environments and many of the same activities. Tourism did much to popularise outdoor activities as recreation in New Zealand, such as mountain climbing and tramping (Lynch, 1999).

Devlin (1995) remarked that during the latter parts of the 20th century New Zealanders continued to embrace outdoor recreation as part of the image of 'real New Zealand', even if they themselves may not participate. New Zealanders have a long history of recognising individuals who have achieved on the outdoor world stage, notably Sir Edmund Hillary and Sir Peter Blake.

The New Zealand government agency responsible for the sport and recreation sector in is Sport and Recreation New Zealand (SPARC). In its report on outdoor recreation in New Zealand SPARC (2008b) identified national identity as one of the values of

outdoor recreation to New Zealanders, and summarised this with the following statements:

> New Zealand's national identity as an outdoor nation is built on many of the values that are inherent in outdoor recreation including the conservation of unspoiled natural environment, active and capable New Zealanders, and shared family outdoor experiences such as bush walking and camping.
>
> The value of outdoor recreation to national identity is an intrinsic value linked to places and activities that give us a feeling of pride as New Zealanders (p. 12).

Since 2004 SPARC has distributed a biannual expedition fund of $100,000 to support its Hillary Expedition Vision to "inspire and encourage New Zealanders to take on exciting, world-class physical challenges in the great outdoors" (SPARC, 2011). In it's literature SPARC envisages that adventurers sponsored through the fund "will be role models, encouraging Kiwis to set their sights high, dream 'big dreams', and embark on a lifetime of physical activity" (SPARC, 2011). The above demonstrates the government's commitment to its adventure heritage, and its recognition of the value of adventure to New Zealanders.

2.2.4 Benefits of Outdoor Recreation

As well as contributing to our national identity, SPARC (2008b, p. 11) catalogued a number of other benefits of engaging in outdoor recreation activities for New Zealanders based on national and international evidence. Among these were health benefits (physical and mental) and education benefits, social development, environment, and economic opportunity through tourism and the manufacture of retail goods. Benefits to Health and education are explored below.

Health Benefits

New Zealand is currently experiencing significant public health challenges. These include increasing levels of obesity, diabetes, and other metabolic issues (SPARC, 2008a). This appears in part to be related to changing lifestyles and decreasing participation in exercise activities similar to other western nations (Driver & Brown, 1991). Despite increasing government investment, particularly in promoting physical activity (SPARC, 2008a) a wide range of indicators show that New Zealanders are

becoming increasingly sedentary, decreasing numbers of children walk to school (Ministry of Transport, 2008) and an increasing proportion of leisure time is spent participating in passive leisure pursuits such as television watching, computer and mobile-phone usage and listening to music (Vandelanotte et al*,* 2009).

The U.S. Surgeon General's recommendation, that all Americans should engage in at least 30 minutes per day of moderate to vigorous exercise at least five days per week in order to gain health benefits (US Department of Health and Human Services, 1996), has been endorsed by the New Zealand Physical Activity Taskforce (Hillary Commission, 1998). For SPARC's vision, "Everyone. Every day. Enjoying and excelling though sport and recreation" (2010), few of the indicators hold positive news. The SPARC (2007) report on implementing a child/young person centered philosophy in sport and recreation, found that activity levels across all young people had declined from 69% in 1997 to 66% in 2001. Furthermore the proportion of young people who were sedentary had increased from 8% in 1997 to 13% in 2001. This was evident for both boys and girls. The activity level for Maori young people, traditionally one of the most active ethnic groups, fell significantly from 75% active in 1997 to 66% active in 2001. The number of sedentary Maori young people increased significantly from 6% to 18%, and inactive Pasifika girls in 2001 had increased to 60%, double the percentage inactive in 1997. Walker, Ross, and Gray (1999) also found cultural differences with regard to achieving the minimum guidelines for physical activity. Their study of New Zealand 5-15 year-olds found only 58% of Maori were active for the recommended minimum two and a half hours per week, compared with 69% of European and 58% of 'other cultures'. Compounding these low exercise indicators are studies that show that physical activity declines significantly with age (Ross, 2000).

Possible reasons for the above trends are: increased use of leisure time being used for passive activities such as 'electronic entertainment' (Driver & Brown, 1991; Ross, 2000; Vandelanotte, et al., 2009); increased parental concerns around activity safety (Davidson, 2008; Gill, 2007) and parental or caregiver concerns limiting child mobility (Hillman, Adams, & Whiteleg, 1990; Ministry of Transport, 2008; Sandseter, 2009).

Improving health indicators for the upcoming generation looks unlikely unless steps are taken to increase the active physical engagement of children. Increasing participation in

outdoor recreation and establishing healthy lifestyles at a young age appears part of the solution. While the larger part of SPARC's energy and funding is focused on sport, SPARC's Strategic Plan 2009-2015 identified recreation is one of five key priorities and outdoor recreation is specifically recognised as a priority focus for resources and investment (SPARC, 2010).

A number of authors have claimed that shared family outdoor recreation can improve family communication, unity and dynamics (Driver & Brown, 1991; Huff, Widmer, McCoy, & Hill, 2003; Moore, 2006). In SPARC's (2008a) review of the outdoor sector, stakeholders also remarked on the value of outdoor recreation to families and communities. These positive family outcomes associated with outdoor recreation may be correlated with mental health benefits of physical activity and recreation in the outdoors such as, decreased depression, reduced stress, and improved self-perception as identified by a large number of international studies (SPARC, 2008a).

SPARC's (2008a) report stated that one of the challenges for the sector was, "maximizing the benefits to young people and the sector of young people['s] positive engagement in outdoor recreation" (p. 41). Studies have noted the need for empirical research that support more opportunities for outdoor recreation (Morris, 2003), and for comprehensive baseline data in the sector (SPARC, 2008a).

Educational benefits of outdoor recreation activities are discussed in the section titled *The Place of Recreation Activities in Education,* (p. 16 this thesis).

2.2.5 Participation in Outdoor Recreation

Statistics from the Department of Conservation (DOC) (2006) showed clearly that outdoor recreation is important to many New Zealanders. One third went camping and between 70 and 80 percent visited a national park in 2005 and 2006. However over the last 30 years some activities such as tramping and hunting participation have declined (SPARC, 2008b). Dignan and Cessford (2009) predicted this decline would become more widespread across tramping, hunting, and fishing, but predicted continued growth in mountain biking (although this was likely to be limited to near urban centres or the more favoured riding locations).

SPARC's Active NZ Survey (2009) adds some perspective to the relative importance of outdoor recreation to physical activity New Zealanders engage in. The following percentages show the number of adults who participated in the indicated pursuit at least once over the 12 month period (followed by the relative ranking in brackets): fishing 19.5% (5th), tramping 9.4% (10th), canoeing/kayaking 6.4% (16th), and hunting 4.6% (25th). This compares to 5.7% (21st) for rugby, New Zealand's so-called national sport.

Outdoor recreation then has a long and established cultural history in New Zealand. As a significant source of recreation and physical activity for many New Zealanders it represents a potential means with which to affect lifestyle choices and improve a number of health indicators prioritised by central government. For most New Zealand children, introduction to many outdoor recreation activities appears likely to come through opportunities presented during their schooling.

2.3 The Place of Recreation Activities in Education

This section explores the opportunity for participation in outdoor recreation activities in New Zealand schools. Initially outdoor education, the primary curricular subject under which outdoor activities are conducted, is defined along with its elemental components. The pedagogical underpinnings are explored and risk is introduced for the first time here (The notion of risk is expanded later in the section *Risk in Society,* p. 25 this thesis). The benefits of outdoor education and its mandate within the New Zealand educational curriculum are investigated. Participation is considered in terms of the activities that are conducted and which students undertake them. Finally where these activities are conducted is explored in terms of the proportion of activity that takes place within the school grounds and in outdoor natural environments.

2.3.1 Defining Outdoor Education

The term outdoor education was coined to describe a very broad field of education. Outdoor education has been described as a place, a subject, and a reason for learning. It has also been regarded as a method of teaching, a process and a topic (Priest, 1990). Priest noted that even the above list was not exhaustive and failed to take into account that it could take place indoors and may be concerned with human interactions as well as ecology, prompting him to develop the following catch-all definition:

> Outdoor education is an experiential method of learning with the use of all the senses. It takes place primarily, but not exclusively through exposure to the natural environment. In outdoor education the emphasis for the subject of learning is placed on relationships concerning people and natural resources (p. 113).

So broad is the term outdoor education that it invariably needs qualifying or must be used in conjunction with other terms to reflect the meaning intended by the user. The broader concept of outdoor education has been fragmented into a number of narrower terms to emphasise and identify an aspect of the whole, for example, adventure education, environmental education, earth education, outdoor pursuits, education outside the classroom (EOTC), wilderness education, experiential education and outdoor recreation activities (Smith, Carlson, Masters, & Donaldson, 1972).

Outdoor education in New Zealand generally includes elements of adventure education and environmental education often utilising outdoor pursuits (Zink & Boyes, 2006). From Hanna (1991) the following definitions help illuminate the key characteristics of these concepts:

> **Outdoor pursuits** are self-propelled activities, such as camping, backpacking, canoeing, rock climbing and skiing, which may be used to achieve a variety of adventure education, environmental education, and/or recreation ends.
> **Adventure Education** emphasizes engagement in outdoor pursuits activities and utilizes progressive stress/challenge situations and uncertainty of outcome to enhance the individual's intrapersonal (self-knowledge) and interpersonal (social) skills.
> **Environmental education** involves educational activities oriented toward the enhancement of ecological knowledge and awareness of our relationship with the natural environment. It's ultimate objective is the development of an environmentally conscious and active citizenry (p. 4) [Bolding added].

In New Zealand the broad term used to describe any form of schooling that takes place outside of the four wall of the classroom environment is Education Outside the Classroom (EOTC). EOTC and outdoor education are both terms used in various curriculum documents and by teachers to describe the practice of taking students outdoors for educational purposes.

Adventure education appears to be the predominant (though not exclusive) user of outdoor recreation activities and the next section explores adventure education in greater detail.

2.3.2 Adventure and Risk in Outdoor Education

Atherton (2007) proposed that energetic and physical engagements with nature such as kayaking, sailing, mountaineering, and mountain biking, or what he termed Outdoor Kinetic Experiences (OKE), affect one's epistemological outlook and aesthetic sensitivities. In other words, such experiences can change the way people perceive the world and oneself. This is the basic premise of outdoor adventure education.

According to Priest and Gass (1997, p.122), "The presence of danger gives rise to risk, and risk is one of the critical components that makes adventure programming popular and successful". In fact these two prominent writers in the field of adventure programming went so far as to say, "risk taking is an essential element of adventure programming" (1997, p. 123). Risk is widely regarded as an essential component of adventure education, or at least the perception of risk (Gair, 1997; Hirsch, 1999; Priest & Gass, 1997). A high perceived risk for participants can be desirable to retain in some outdoor education circumstances, even though the real risk may be low. Priest & Gass (1997) explains this apparent paradox:

> State-of-the-art safety procedures are used to reduce the real dangers, yet keep desired perceived risks high. Therefore, balancing risks and safety is a central paradox for outdoor leaders: too much risk and the danger of the experience becomes unreasonable; too much safety and adventure programmes fail to remain adventurous (p. 122).

Outdoor pursuits, which are inherently adventurous have the means to create powerful learning experiences and for this reason are utilised widely within outdoor education in New Zealand (Haddock, 1993). Leaders create situations that move the participant to the outer boundary of his/her 'cruising zone' so there is a match between task difficulty and participant competence Through an outdoor leader's experience and astute risk awareness their perceived risk should be close to the actual risk (Haddock, 1993). The facilitation of the outcome can lead to improved self-confidence, self-efficacy and potentially transfer to other situations in one's life (Priest, 1999a). The natural

environment provides a reliable degree of challenge through the nature of the terrain, its inherent uncertainty, and because participants are generally unfamiliar with it.

Priest and Gass (1997) listed the intrapersonal and interpersonal affective outcomes expected from adventure programming. It is an extensive list spanning “improved self concept”, “enhanced leadership skills”, “greater trust in others” and “increased willingness to take risks” (p. 20). Beliefs that adventure experiences ‘build character’, develop persons’, actualize selves’ or have therapeutic effects associated with changes in personal traits are termed neo-Hahnian, following Kurt Hahn’s theories that underpin the Outward Bound movement. Brookes (2003b, p. 129) considered “character training” claims as having “fallacious underpinnings”. The premise for his view was that traits are situational (behaviour change in one environment does not equal to trait change in another) and study biases where “enthusiasm exceeds evidence” (Brookes, 2003a, p. 123).

Likewise Brown and Frazer (2009) offered a counter view of challenging adventure activities in outdoor education, suggesting that there may be more important ways to prepare youth for the future. The authors argued outdoor adventure education is shaped the way it is as a result of the historical and cultural milieu present when it formed. Challenging adventure activities in education were a response to the threat of war according to Beedie and Bourne (2005) which they stated no longer exists. Brown and Frazer (2009) also exposed the contradiction of risk in adventure education. These authors argue that risk often reinforces traditional teacher student power differentials rather than empowering students because of the technical skill and expert judgment often required to conduct these adventure activities. There is a trend in outdoor education research to challenge some of the philosophical and pedagogical assumptions upon which outdoor education practice is based. (Brookes, 2003a, 2003b; Brown & Fraser, 2009; Wurdinger, 1997) These critiques suggest a need for more empirical research to confirm outdoor education theories, one being the necessary place of risk.

2.3.3 The Benefits of Outdoor Education

There are strong links between Jensen’s (1995) five objectives of outdoor recreation (Listed in *Leisure, Recreation and Outdoor Recreation,* p. 8 this thesis) and elements of the New Zealand education curriculum. Both ‘appreciation of nature’ and ‘stewardship’

fit with ‘ecological sustainability’, which the New Zealand curriculum states, is “to be encouraged, modelled, and explored (Ministry of Education, 2007, p. 10). ‘Positive behaviour patterns’ supports key competencies in the curriculum related to the ‘capabilities for living and lifelong learning’. Another of Jensen’s (1995) five objectives was ‘physiological fitness’. The physical and mental health benefits of outdoor recreation previously identified strongly support curriculum aims in the essential learning area of Health and Physical Education (Ministry of Education, 2007). So it is perhaps no surprise that outdoor recreation activities have been utilised as a teaching/learning medium, especially so in New Zealand with outdoor natural spaces readily accessible for the majority of schools.

The ability of outdoor education to improve a range of educational and social development markers, such as enhanced self-concept and self-determination, is well supported in the literature (Boyes, 2000; Ewert, 1989; Gair, 1997; Hanna, 1991; Priest & Gass, 1997; Smith, et al., 1972). This claim appears to be substantiated by a number of studies and several meta-analyses have supported this (Carson & Gillis, 1994; Hans, 1997; Hattie, Marsh, Neil, & Richards, 1997; Neil & Richards, 1998). Some recent analyses have argued the research does not support character trait development, citing poor scientific methodology and bias (Brookes, 2003a, 2003b).

What is not disputed however, in New Zealand at least, is the ability of outdoor education to enhance school curriculum learning. In its report on outdoor recreation in New Zealand, SPARC (2008b) identified this as a key educational benefit of outdoor education, adventure and recreation pursuits. Also that it “provides a context for learning, thinking and problem-solving skills, and helps develop life skills such as co-operation and interpersonal communication” (p. 7). Where the aims of the outdoor programming related specifically to academic skills Hattie, et al., (1997) reported that, “The effects on academic performance are most impressive” (p. 68).

Haddock (2007) reported on EOTC to provide a national picture and to inform policy, practices and the actions required to improve the quality of EOTC programmes. This generated the following conclusions about EOTC:

- It is a key component of primary school life for New Zealand children.
- It strongly supports learning outcomes in all essential learning areas.

- It is important in achieving four of the five draft key competencies in the Draft NZ Curriculum.
- It achieves other learning outcomes such as improved self-confidence, safety knowledge and skills for problem solving.
- It is an effective pedagogical tool.

In terms of the educational value of recreation activities, which are largely located within the outdoor education strand, SPARC made the following observation based on national and international evidence:

> …quality outdoor education, adventure, and recreational pursuits that are well planned, safely managed and personalised to meet the needs of young people can lead to a deeper understanding of the concepts within traditional curriculum subject boundaries. They can also provide a context for learning, thinking and problem-solving skills, and help develop life skills such as co-operation and interpersonal communication (2008b, p. 11).

A number of benefits for individuals who participate in such programmed activities were articulated in the same report. SPARC (2008b) stated that such outdoor experiences could:

- Reduce behavioral problems and improve school attendance.
- Improve academic achievement, nurture creativity and be a catalyst for higher order learning.
- Develop the ability to deal with uncertainty.
- Develop skills and independence in a wide range of environments and social settings.
- Develop active citizens and stewards of the environment.
- Provide challenges and opportunities to take acceptable levels of risk.
- Make learning more engaging and relevant to young people.
- Stimulate, inspire and improve motivation.
- Provide skills for ongoing participation in outdoor recreation.

While SPARC (2008b) did not list physical health benefits associated with outdoor recreation under outdoor education, they were included elsewhere in its report and can be supposed to be associated with outdoor education programmes that include physical pursuit activities. Zink and Boyes (2006) found the natural outdoor environment was

predominantly used within geography and the health and physical education (H&PE) curriculum areas. In H&PE the outdoors was primarily used for pursuits based activities, such as mountain biking, tramping and kayaking. Physical fitness was "considered important" (p. 16) as a learning outcome.

2.3.4 Outdoor Education Participation in New Zealand Schooling

As shown in the preceding chapter outdoor education is recognised in New Zealand as an effective means of developing the individual and enhancing learning (Haddock, 2007). Outdoor education was introduced to the school curriculum in 1999 as one of seven 'strands of learning' within the essential learning area 'Health and Physical Education' (Ministry of Education, 1999). The national curriculum was reviewed in the years 2000-02 and following this, cabinet (a New Zealand body of high ranking government ministers) agreed it should be revised. What evolved took as its starting point a vision of "young people who will be confident, connected, actively involved lifelong learners" (Ministry of Education, 2007). In the Health and Physical Education curriculum the focus is on "the well-being of the students themselves, of other people, and of society through learning in health related and movement contexts" (ibid, p.22). Of note is that "adventure" and "adventure activities" are identified as legitimate learning opportunities in the 1999 curriculum (Ministry of Education, 1999, p. 46) and "adventure" is identified as a learning opportunity in the current curriculum document (Ministry of Education, 2009b, p. 23).

Health and physical education, and therefore outdoor education is a compulsory part of the curriculum for students until year 10. Beyond this in years 11-13 (secondary school) it is an elective subject.

Zink and Boyes's (2006) study on New Zealand schools found secondary school outdoor education programmes had a stronger focus on outdoor pursuits than outdoor learning experiences in primary schools. Nonetheless, outdoor pursuits have a considerable presence in some New Zealand primary schools (Zink , 2003). Haddock et al (2009) reported that almost 50% of primary schools and more than 60% of composite schools provided tramping, and 29% of primary and composite schools provided abseiling. Other popular activities provided were rock climbing, challenge rope course, orienteering, kayaking, sailing and beach swimming (see Figure 2.1 and Figure 2.2):

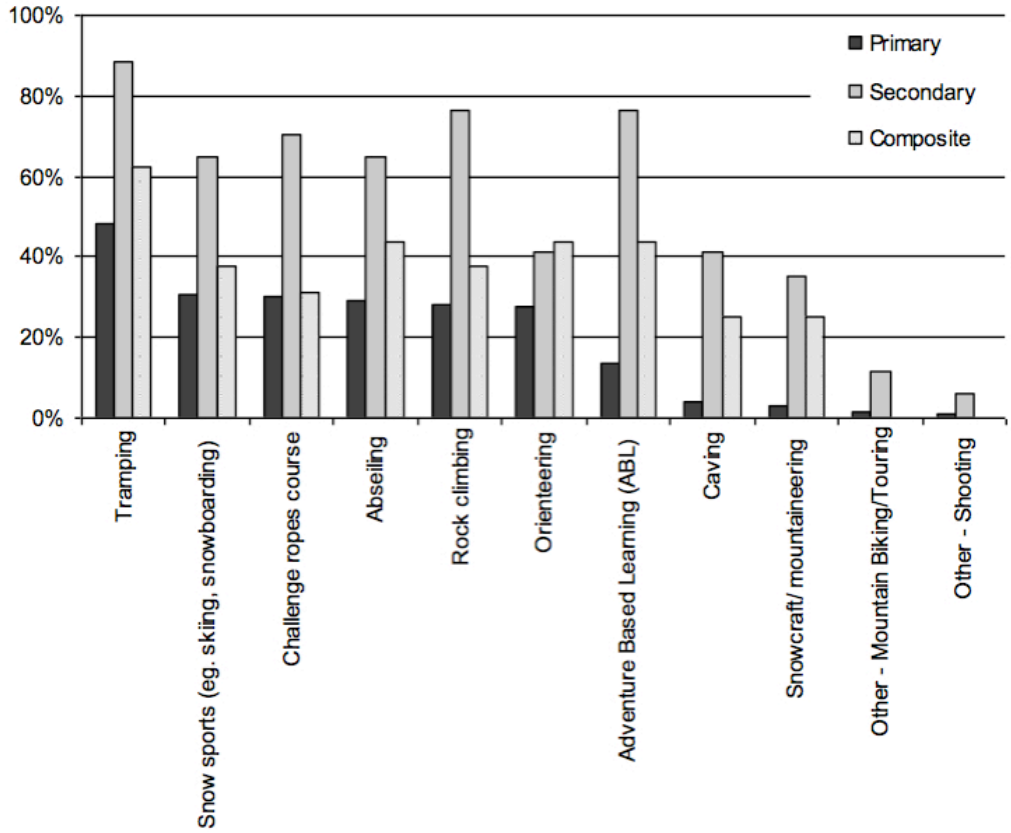

Figure 2.1 *Percentage of Schools Currently Providing Land-Based Activities (Haddock, et al., 2009, p. 53)*

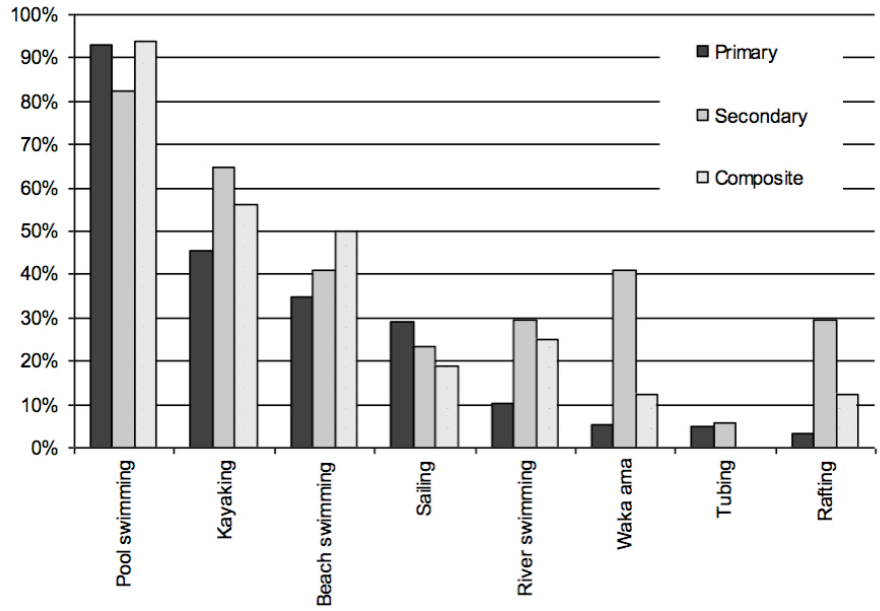

Figure 2.2 *Percentage of Schools Currently Providing Water-Based Activities (Haddock, et al., 2009, p. 54)*

Haddock, et al. (2009) showed there were strong differences in outdoor education programme content across the range of deciles. Compared with high decile schools half the number of lower-decile schools provided outdoor pursuits such as orienteering, snow-sports, adventure based learning, challenge ropes course, sailing, abseiling and tramping. While some of these activities are expensive and it is logical to assume this was a barrier, other activities are extremely low cost and perhaps other reasons are a barrier to programming. Slightly fewer (approximately 10%) year 1-6 students participated in EOTC in decile 4-6 schools compared with decile 1-3 and decile 7-10 schools (Haddock, 2007). Further research is required to determine the reasons for this.

2.3.5 Where do Outdoor Education/Recreation Activities Take Place?

Two key studies conducted by Haddock, Thevenard, Reddish, and Phillips (2009) and Zink and Boyes (2006) provided relevant empirical data about the outdoor education venue. A large number of schools provide overnight EOTC experiences for their students. Haddock et al. (2009) found 90% of primary schools programmed overnight stays in either a lodge or tent. In contrast, Zink and Boyes (2006) reported one third of New Zealand primary schools had a residential component to the outdoor education learning. This is an interesting disparity in the research as the size of the two studies was similar, 147 primary schools in the former compared with 127 in the latter. Differences are likely a result of sampling methodology. Haddock et al.'s (2009) study used a stratified random sampling method yielding a cohort of participants that were 40% of primary schools in a randomized sample (400 primary, secondary and composite schools). Zink and Boyes's study used a self-selected sample with a 14% return rate more prone to bias. The studies were also 3 years apart, which could account for the difference.

Zink and Boyes (2006) reported that the majority of the learning and teaching in the outdoors occurs outside of the school grounds (35% in primary compared with 11% in secondary). This was closely followed by outdoor centres, rural and urban areas and then national parks. Other venues included beaches and the coast, community visits and marae visits. Zink and Boyes (2006) reported only 20% of the learning happened outside of school hours indicating the majority happened during the school day and is therefore likely to be of shorter duration and close to the school.

In summary for this section, there is widespread support for the view that outdoor education has significant worth beyond the benefits of participating in physical outdoor activities. Outdoor education is widely used in New Zealand primary schools to achieve a number of learning outcomes from social and physical education to environmental education. Outdoor education is a strand in the New Zealand national school curriculum and schools have an obligation to provide relevant experiences for their students. The majority of programming takes place outside the school grounds in a variety of environments, though a significant proportion takes place within the grounds of primary schools.

2.4 Risk in Society

The pedagogical use of risk activities and risky environments to achieve outdoor education aims poses challenges in a society that appears to be increasingly concerned with safety. This section explores the construct of risk and theoretical understandings of risk perception. The notion of 'risk society' is examined before considering the effect of this on outdoor education programming.

2.4.1 Risk and Perception

> Nothing is a risk in itself; there is no risk in reality. But on the other hand, anything *can* be a risk; it all depends on how one analyses the danger, considers the event (Ewald, 1991, p. 199).

Despite the still rapidly growing literature on the topic of risk there are still widely divergent opinions on what is meant by risk. The word may be used several times in the same paragraph, each time with a different meaning not acknowledged by the author. Risk can be a hazard, a consequence, a probability, or a threat. These different meanings can confuse communication (Slovic, 2002). In view of the foregoing Rosa (2003) defined risk as "a situation or an event where something of human value (including humans themselves) is at stake and where the outcome is uncertain" (2003, p. 56).

In the education sector risk is commonly described as "the potential to lose something of value. The loss may lead to physical (broken bones), mental (psychological fear), social (peer embarrassment), or financial (lost or damaged equipment) harm" (Priest, 1990, p. 15). Priest's (1990) definition focused solely on the potential for loss. People

participate in risk activities because of the potential to gain something of value (Curtis, 2002; Priest & Gass, 1997; Zink & Leberman, 2001) and this positive risk component is foundational to much of the theory associated with adventure education (see *Adventure and Risk in Outdoor Education,* p. 18 this thesis).

Despite the fact that experts are often called to calculate risk as an objective and measurable entity, in the social sciences it is viewed as a subjective construct (Lupton, 1999). Technical risks are regarded as inseparable from the social matrix in which they are imbedded. Rather than something that exists independently of people risk perception is seen as a subjective invention of humans to understand and cope with the uncertainties and dangers of life. (Pidgeon, Kasperson, & Slovic, 2003; Slovic, 2000, 2002). While experts use statistical information to evaluate risks, laypeople rely on inferences about what they remember reading, hearing or observing about the risk in question (Slovic, Fischhoff, & Lichtenstein, 2000). Lay and expert assessments of risk therefore commonly do not agree.

A person's perception of the risk could be anywhere between the upper limit of possibility of the risk known as the 'absolute risk' (Priest & Baillie, 1987) to no risk at all. The 'residual risk' describes the risk remaining after the absolute risk has been adjusted down by safety controls (Haddock, 1993). This was formerly known as the 'real risk' (Priest & Baillie, 1987). Perceived risk then is an individual's subjective evaluation of the characteristics and severity of residual risk, that exists at a given moment and is ultimately used to make decisions regarding situations.

2.4.2 What Influences Risk Perception?

It might be assumed that something so fundamental to everyday life and the identification of risk would be well understood, however Susan Cutter in her review of risk literature suggested that what emerges "is not how much we know, but rather how little we know about how individuals and society perceive risk" (Cutter, 1993, p. 23). What follows is a summary of risk perception research that has relevance to public opinion and outdoor education.

Slovic (2000) stated that individuals' perceptions may be influenced by social, institutional, psychological, and cultural factors, and identified three major families of

theory regarding risk perception that have been developed: psychology approaches (heuristics and cognitive), anthropology/sociology approaches (cultural theory) and interdisciplinary approaches (social amplification of risk framework). A brief explanation of these follows.

Psychology Approaches

Individuals apprehend reality both through a rational, analytical process and more automatically through an intuitive process (Renn, 1998; Slovic, 2000). Affect is a subtle form of emotion that can be positive (like) or negative (dislike). These feelings are evaluative toward some external stimuli, such as a word, image, or situation. Such evaluations are automatic and rapid and provide an efficient way to make decisions when confronting the hazards and uncertainties of the world (Slovic, 2000). If an activity is liked an individual will likely perceive the benefits as high and the risks as low. If they dislike the activity then the risks will be perceived as being high and the benefits low (Alhakami & Slovic, 1994).

Up to 20 cognitive factors influencing the perception of risk have been identified in studies. A Royal Society study group (The Royal Society, 1982), reported the key factors common to these studies:

- Controllability – An individual's influence over the risk.
- Perception of costs and benefits – The perceived value received from the risk.
- Voluntariness – The level of choice an individual has over risk exposure.
- Familiarity – Knowledge about and acquaintance with the risk.
- Dread – The horror inducing nature of the risk.

Anthropology/Sociology Approaches

There are sociopolitical and cultural determinants of risk perception as well (Powell, 2007; Slovic, 2000). Values interact with worldviews, gender and trust in ways that influence perceptions of risk. For example, New Zealand's pioneering past, where facing considerable uncertainty, dangers and hardship was not considered unusual is a part of New Zealand's cultural heritage that likely influences cultural perspectives on risk (Kane, 2008). Likewise the histories of New Zealand adventurers such as Sir Edmund Hillary and Jean Batton (Kane & Tucker, 2007) likely influence New Zealander's views on risk.

Interdisciplinary Approaches

Attitudes and judgements around risk then are complex and subtle and variance may be due to many qualitative factors. Seeking to bring together several threads related to risk perception: media, culture, psychology, and organisational response, Kasperson, et al. (1988) developed the Social Amplification of Risk Framework (SARF). SARF attempts to describe the various dynamic social processes and cultural agents that pass on risk signals that underlie risk perception and response. Risk messages filter through various amplification stations, which are affected by risk heuristics, qualitative aspects of risk, prior attitudes, blame, and trust. Through these factors messages are reinterpreted and transformed potentially amplifying the noise of risk or attenuating it. A second stage of the framework models the potential for 'ripples' of secondary and tertiary consequence that can spread far beyond the original event. Such impacts include demand for regulatory constraint, litigation, community opposition, loss of credibility and trust, and stigmatisation of product with associated consumer flight and market impacts (Kasperson, et al., 1988). The 'risk noise' associated with an outdoor education or adventure tourism tragedy for example would theoretically ripple outwards with associated societal consequences. These consequences can amplify or attenuate the temporal, sectorial or geographical scales of impacts (Kasperson, Kasperson, Pidgeon, & Slovic, 2003).

One of the key amplifiers in SARF is the media. According to Kasperson, et al. (2003), a publically reported tragedy carries a risk signal. These are defined as messages about a hazard or hazard event that effect people's perceptions of the seriousness or manageability of the risk. Risk events have a signal value. Those events with catastrophic potential, dread factors or other aggravating factors have the potential for a high signal value. To use the example above, a tragedy in outdoor education would likely have a high dread factor for parents and hence carry a high-risk signal increasing parental perceptions of the risk in outdoor education? The influence of media on risk perception is expanded upon in a later section, *Media Reporting and Risk Perception,* p. 42 this thesis.

For practical purposes, when considering a specific social risk, it may be clearer to arrange the factors that affect perception of risk under three headings: those related to

the individual, those related to the characteristics of the risk itself, and those related to the presentation of the risk.

Factors related to the individual

Cultural factors will influence values and world view, affecting one's interpretation of the risk (Powell, 2007; Slovic, 2000). Personal characteristics such as boldness will affect risk perception. Timid people tend to over perceive the risk whilst fearless people tend to under perceive it (Haddock, 1993; Priest, 1990). Developmental stage will be a factor as abstract cognitive skills are undeveloped in the young (Mann, Harmoni, & Power, 1989). A number of studies, in a number of different fields have observed gender differences in risk perception, reporting that men perceive risks to be lower than women do (Confer, Wilson, Kim, & Constintine, 2004; Davidson, 2006; Finucane, Slovic, Mertz, Flynn, & Satterfield, 2000; Lupton & Tullock, 2002; Slovic, 2000). From his findings Slovic (2000) coined the term the 'white male effect' and hypothesised, where technology is concerned at least, that the difference is less likely to be biological (as it doesn't cross race barriers) than socio-political. Slovic suggested because white males are more closely associated with creating, managing and controlling technology they perceive it as less risky than others. Finally, certain innate tendencies affect a person's perception and interpretation of risk. 'Optimism bias' (Weinstein, 1980) for example is the tendency of individuals to underestimate the likelihood they will experience adverse events.

Slovic's (1993) study exemplified risk perception as an individual phenomenon. In this Slovic revealed the differing risk ratings of college students, club members, experts and a woman's league group for a variety of technological hazards. Similarly Lupton and Tullock's (2002) empirical study of Australians found that responses to risk were strongly shaped by age, gender, occupation and sexual identity.

Factors related to the characteristics of the risk

Individuals worry and are more concerned about risks that: they cannot control, are involuntary, are associated with particular dread, are novel, result from man-made sources, and are more easily recalled (Bennet & Calman, 1999). The last factor reflects a phenomenon known as the 'availability bias' (Tversky & Kahneman, 1973) whereby individuals tend to over-perceive the risks of highly memorable, newsworthy, but

unusual events, which are easily brought to mind, such as shark attacks, but under-perceive everyday risks such as heart disease.

Factors related to the presentation of the risk

How risk information is presented to the public influences the perception and interpretation of risks. If risks are framed positively (survival rate) rather than negatively (death rate) it has been shown individuals are more likely to accept the risk (Rothman & Salovey, 1997). Individuals also tend to perceive the risks to be higher if there is uncertainty around the information or if the information is from sources that are not trusted (Bennet & Calman, 1999).

With regard to the risks that confront us everyday, Humberstone and Stan (2009) drew attention to the inadequacies of simply keeping people safe, stating that wellbeing is an ambiguous concept with numerous dimensions ranging from physical health to various forms of happiness. A number of authors have pointed to the positive role risk plays in life (Cairns, 2009; McNamee, 2007; Nansen, 1926), however the common human outlook would suggest that safety, or the absence of risk, is paramount to well being (Carver, et al., 2007; Furedi, 2001). Breivik (2007) stated that post modern society demands security, safety, and control. The public wants predictability, of people and of technology. If we are to entertain risk it must be able to be predicted, controlled and we must have the ability to attain a level of mastery over it. People do not want to die by random events beyond their control. Risks must be appropriate and relevant to be acceptable. This suggests a tension between the pursuit of endeavours with inherent risk, or adventurous activities, and the idea of a safe society that has been so central in modern welfare policies (Lupton & Tullock, 2002).

2.4.3 Risk Society

In the 1990s the term ‘risk society’ was coined by Ulrich Beck (1992) to describe late industrial society’s preoccupation with risk. It was defined as where “the unknown and unintended consequences come to be the dominant force in history and society” (1992, p. 22). Various commentators have charted the changing way in which humans have comprehended risk throughout history. Most have argued that the notion of risk in pre-modern times was associated with natural events, such as floods and storms over which the individual exerted no control and could not be held to account. Such risks were

given to be the product of God's will and linked to notions of fate (Ewald, 1991). Risk was linked with the perils encountered in the exploration of new lands and seafaring rather than with the trivial hazards faced in everyday life.

As knowledge and understanding developed risk events could be predicted with increasing certainty. People saw themselves as able to exert a level of control over events previously regarded as acts of God. Prediction enabled statistical probability to be calculated giving rise to the construct of 'calculated risk' and insurance against risk became part of the fabric of modern life (Ewald, 1991). As humans were able to exert more control over the perils of life and ensure themselves against uncertainties, responsibility became associated with risk. Risk changed from being a neutral term, concerned merely with probabilities, with losses and gains (Jackson & Scott, 1999) to being one charged with negative connotations (Beck, 1992; Ewald, 1991; Giddens, 1999). Beck (1992) traced the origins of risk society to two fundamental transformations, 'end of nature' and 'end of tradition'. The first refers to the effect of scientific advancement reducing the uncertainty of former perils such as crop failure, flooding and disease. At some point humans began worrying more about what they had done to nature rather than what nature was doing to them. 'End of tradition' refers to the fact that until recently tradition largely determined the human response to risk. Tradition decreed that people were fated to their roles in society. Tradition can no longer be relied upon to provide the answers in modern contexts and "people have to take a more active and risk-infused orientation to their relationships and involvements" (Giddens, 1999, p. 3).

Sometime before the prominence of risk and safety in western discourses, the renown Norwegian explorer Fridtjof Nansen, in a speech he gave in 1926 titled 'Adventure', spoke about exploration as a deeply rooted human urge and the consequent facing of risk as a human imperative. Consider a statement from this speech below:

> You have to take risks, and cannot allow yourself to be frightened by them when you are convinced you are on the right course. Nothing worth having in life is ever attained without taking risks (Nansen, 1926, p. 36).

Lay understandings are now more likely to view risk in entirely negative terms, equating risk with danger (Douglas, 1992). The counter to potential advancement from

pushing back the frontiers of human knowledge is possible failure as we are reminded by Slovic, Kunreuther, and White (2000) below:

> Our world is so constructed that the physical and material benefits we most desire are sprinkled with the seeds of disaster… People today have some control over the level of risk they face, but reduction of risk often results in reduction of benefit as well (p. 32).

In the past governments have been judged on their ability to deliver services and a standard of living. Having achieved a relatively high degree of both the trend in contemporary western democracies is now toward public safety (Furedi, 2002). The word safety originates from the Latin term *salvus*, meaning uninjured. To be safe is "taking or involving no risks" or to be "free from danger" (*Collins Pocket English Dictionary*, 1981). Some theorists and writers believe society's fear for its safety is now the major impediment to social, scientific and technological advance and aspirations of progress are giving way to aspirations for security (Beck, 1992; Hume, 2003, May 14).

Attitude toward risk can be viewed as a continuum, traversing the gamut from extreme risk aversion to extreme risk seeking. Society appears for now to have a low propensity for risk taking but between individuals the situation varies significantly (Furedi, 2001; Giddens, 1999; Gill, 2007; Wildavsky, 1988). An example of how safety now appears to have become one of Western society's fundamental values is that people find it increasingly difficult to accept that some injuries cannot be prevented. In 2001, the *British Medical Journal* declared that it had banned the word 'accident' from its pages, claiming that most injuries are preventable, and that calling them 'accidents' is irresponsible (Furedi, 2002, March 15). Similarly in the lexicon of New Zealand's outdoor sector the word 'incident' has been recently adopted to replace accident as the preferred term for any event that results in an undesirable outcome (Haddock, 1993).

The 'precautionary principal' is the primary justification for much of society's energy directed toward ever-minimising the risks encountered in living. In brief the precautionary principle (PP) can be defined as 'better safe than sorry'. Even if the risk is miniscule it is still there so why take the risk (Guldberg, 2000). The PP can manifest as strong PP where safety is demanded at any cost or weak PP, which may demand safety only in cost effective situations. Whereas it may be well documented over time that calculated risk taking is vital if people are to live fulfilled lives (Furedi, 2001; Liddle,

1998; Whitehead, 1933; Wildavsky, 1988), the effect of the precautionary principle is to avoid risk, something society increasingly sees itself as suffering from, rather than something to be managed (Furedi, 2001).

According to Jackson and Scott (1999) childhood is socially constructed. Children are cherished beings and childhood is a cherished state of being. Because children and childhood are precious, both become loci for risk anxiety. The risks which children must be protected from help define what it is to be a child and the boundaries of childhood. Unsupervised children's activities with friends, which used to be referred to as play, are now considered by definition a risk (Furedi, 2006). There is growing evidence of shrinking opportunities for children to engage in challenging outdoor play over the last two decades (Carver, et al., 2007; Clements, 2004; Hughs, 1990; Prezza, et al., 2005).

The freedom to roam during childhood is also compromised, largely in response to concerns for child safety. Hillman, Adams, and Whiteleg's (1990) United Kingdom based longitudinal study on the changing nature of children's freedoms showed a marked decline in weekend activities engaged in by junior school age children. During the 20 years between the two studies (1971- 1990) the number of activities was nearly halved. This, they postulated was the result of half as many children allowed to cross the road unsupervised in 1990 compared with 1971, and a quadrupling in the number transported to school by car.

The key to understanding the obsession with risk and safety in society today, according to Furedi (2006) is what he terms 'the culture of fear'. His thesis is "that when attitudes and ways of behaving can no longer be taken for granted, experiences which were hitherto relatively straightforward now become seen as risky" (p. 75). Furedi has written extensively on the parental response to 'risk society' (2001, 2002, 2006) popularising the term "paranoid parenting" (Furedi, 2001) which describes the ever diminishing risk parents are prepared to accept where their children are concerned. The result of well meant parental concern for children's safety poses its own risks, such as not developing coping strategies or the capacity to take responsibility for themselves, thus being unable to develop independent lives (Guldberg, 2000). The dualism between the value of taking risks and society's apparent obsession with absolute safety is a challenging issue

for parents. The dualism underlying risk is basically reward versus calamity and Breivik's (2007) statement below expressed his notion of the former:

> I think children should be given more opportunities to play outdoors, be active, explore the world, develop skills and strong bodies. We should let the children freeze a bit, get wet, starve a bit, get hurt, face problems, in order to develop resistance to stress and pain. It is not in their interests that we overprotect them. (p. 20).

Breivik's recipe for building resilience in children may have its devotees, however the more common response of parents to anything that may cause discomfort or harm is to protect their child from it (Giddens, 1999).

Lupton and Tullock's (2002) study on risk perceptions of Australians sought to provide empirical evidence to test aspects of the risk society thesis proposed by socio-cultural theorists such as Beck (1992). Notions of risk were elicited by semi-structured interviewing of 74 participants. Apparent in responses from participants were "contradiction, ambivalence and complexity" (p. 332), and given the relative homogeneity in the sample they made no claim for the generalisability of their findings to the Australian population. Their findings lent both support for the 'risk society' thesis, and called some aspects into question. While participants were highly aware of risk in their lives, many also identified with the positive aspects of risk-taking, challenging portrayals of risk avoidance and fear. Lupton and Tullock (2002) suggested Beck's (1999) risk society thesis was ethnocentric in its sweeping generalisations and failed to take into account national differences. No similar empirical studies have been conducted in New Zealand to evaluate whether New Zealanders have adopted characteristics claimed by exponents of the risk society thesis.

As mentioned previously, research is unequivocal in its support of the developmental value of natural outdoor environments to children (Morris, 2003; SPARC, 2008b). Yet Carver, et al. (2007) posed the question, "is the outdoor child an endangered species?" (p. 217). In Guldberg's (2000) view children must be able to plan and take control. They must have the freedom to experiment and develop their own abilities to solve problems. Despite the close proximity of the outdoors to New Zealand families and our historical connections to it a number of commentators, such as Moore (2006), suggest

providing such opportunities for children still presents a challenge to New Zealand parents:

> The outdoors is every Kiwi kid's birthright and youngsters deserve the same gentle introduction to it that they are given in the basic three R's of their schooling, or in competitive sport. Parents happily encourage their youngsters to play soccer or other sports, or take swimming lessons, but are reticent about similar involvement in the great outdoors (p. 10).

Freeman, Quigg, Vass, and Broad's (2007) study *Exploring the Geographies of Children's Lives* was conducted with 10-11 year old Dunedin children. They found 13 out of 73 children were not allowed to go anywhere in their own neighbourhood without being accompanied by an adult. If children are denied basic opportunities to experience low-level risk in the outdoors it raises the question as to their long-term ability to recognise and respond appropriately to hazards in natural environments they may encounter at a later time in their life.

As already noted, positive risk is a significant part of the appeal in outdoor activities and a founding value of many outdoor programmes. Such programmes provide experiences where children and youth are exposed to authentic outdoor environments learning risk awareness and basic risk management. Offering opportunities that involve real risk to children presents some challenges in a society obsessed with safety. The following section explores the issues associated with risk in outdoor education and the implications of this for New Zealand teachers.

2.4.4 Safety Concerns in Outdoor Education

> With adventure-based learning as our backdrop, consider the premise that risk-taking is not only critical to the learning process, but it is also essential to the maintenance of the human spirit. Therefore experiential educators have an obligation to create opportunities for clients where they face the unknown and persevere despite the perceived potential for significant loss, and often because of this risk (Liddle, 1998, p. 61).

As explored in the section titled *Adventure and Risk in Outdoor Education,* p.18*,* and as the above quote stresses, risk is commonly regarded as a vital element of outdoor education. The conundrum outdoor educators face is neatly captured by Liddle's (1998), explanation that "we rely on the potential for loss (or at least the perceived potential), yet the actual loss is unacceptable" (p. 62). Negative risk, or incident potential, in

school outdoor activities is mitigated against by risk management. Risk management can be defined as those collective processes utilised to keep risks and losses within an acceptable range (Priest & Dixon, 1990). Essentially risk management is a systems based approach to managing uncertainty within the operating environment (Jackson, 2009; Liddle, 1998).

Uncertainty comes in many forms and Brookes (2002) distinguishes between fatality prevention, safety management and risk management. Safety management is concerned with the prevention of both life threatening and non-life threatening injuries, while risk management encompasses a much broader range of risks than risks to one's physical being. It includes financial risk, loss of reputation, and the risk of liability. While schools have a keen interest in student wellbeing and prevention of injuries, they are also keenly aware of how serious or tragic incidents expose the school to wider risks (Haddock & Sword, 2004; Hogan, 2002).

Van Loon (2002) observed, in what he terms the 'ascendance of risk' that during the 1980s and 90s the term risk attained a pervasive and often intrusive presence in almost all institutionalised discursive fields including education. Outdoor education in New Zealand has been widely considered to have a strong discourse in risk (Stothart, 2000; Sullivan, 2006; Zink, 2003, 2004; Zink & Leberman, 2001). Zink (2003) suggested the discursive practices of risk management that prevail in the outdoor sector (adapted from industrial models) privilege objective and rational models of thinking. She proposed refocusing the risk debate on the opportunities risk provides, on learning goals and on the objectives of adventure education. Likewise Sullivan (2006) in his critique of safety planning documents concludes the focus on safety is detracting from EOTC.

Not surprisingly other western countries suffer from similar issues. Hanna (1991) contended that the vitality and viability of Canadian outdoor programmes were at risk from fears of liability and insurance concerns. New Zealand has some protection from the threat of liability suits in the form of the Accident Compensation Scheme (ACC) but liability fears still persist (Haddock & Sword, 2004). Following the conviction (later successfully appealed) of the 'Le Race 2001' organiser in 2003 there were widespread concerns of liability from school principals and boards (Haddock & Sword, 2004).

Auckland Primary Principals Association (APPA) president, Ian Fox voiced the sentiment of many school managers at the time when he was quoted:

> When we come to work each day we do expect to put our jobs on the line should we make a bad decision. We do not however expect to put our house on the line as well. Cited in (Haddock & Sword, 2004, p. 3).

In fact neither the Le Race conviction nor the introduction of the Health and Safety in Employment (HSE) Amendment Act 2002 which coincided with this, impacted significantly on the liability faced by boards and principals (Haddock & Sword, 2004). Despite this there was evidence to suggest several schools reduced their EOTC programmes as a result of this anxiety or conducted more of their EOTC within the school grounds (Jones, 2004/2005). This is further supported by Sullivan (2006) who examined the emphasis on safety in EOTC in New Zealand. Sullivan observed that the focus on safety has led to a state of anxiety among primary school teachers, anxiety about being outside and reduced opportunities for EOTC activities and concluded that, "The quest for safety pervades and controls EOTC" (p. 15). Sullivan suggested "Perhaps the time has come to critique this overwhelming focus on safety, and to place at the centre of our policies and practices on enjoyment and pleasure in the outdoors" (2006, p. 16).

Chisholm and Shaw (2004) attempted to get to the root of what drove the safety discourse in outdoor education. They identified the media's tendency to sensationalise accidents as one cause, but contended that even the industry itself favours a safety discourse over others with which to portray the industry and guide its development. They suggested that the risk nature of the outdoor sector and the need for guidance from regulatory bodies is similar to a Foucaultian 'regime truth' and suggested it was the industry's suspicion of itself as much as risk focused media reporting that drove the safety discourse underpinning the perceived need for safety auditing and accreditation. They concluded that the discourse around safety was detrimental to the industry, marginalising other discourses (Chisholm & Shaw, 2004).

Haddock and Sword (2004) recognised that fear of liability should be balanced with knowledge of the law. Educational outcomes and safety planning are intertwined and boards, principals and teachers must be able to do this to provide effective and safe

education. Schools operate in an environment of statutory requirement and policies dictated from the Ministry of Education. The key statutory obligations fall under the Education Act, 1989 and the Health and Safety in Employment (HSE) Act, 1992 (Ministry of Education, 2002). *Safety and EOTC: A Good Practice Guideline for New Zealand Schools* (Ministry of Education, 2002) was written in acknowledgement of the inherent risks in many EOTC activities to assist boards of trustees, principals and teachers to enhance safety in their EOTC programmes (Haddock & Sword, 2004). This document has now been revised as *EOTC Guidelines: Bringing the Curriculum Alive* (Ministry of Education, 2009a).

Zink and Boyes (2006) study, focused on the nature and scope of outdoor education in New Zealand schools, exploring the barriers for teachers to teaching outdoor education. "Emphasis on safety" and "paper work" was seen as a greater barrier to providing outdoor learning experiences than the actual "risks involved in practice". While a concern with risk was identified as a barrier it is significant that it was the elements more closely aligned to liability that featured as the more significant barriers (p. 18).

Liability then, appears to be a significant concern for teachers and there appears to be some evidence at least that this has impacted negatively on outdoor education programming.

2.4.5 Are Safety Concerns About School Outdoor Activities Justified?

The dominant public perception, that children face more risk today than in the past contrasts strongly with expert opinion. Children are healthier, wealthier, safer and better educated than ever before, and they are also likely to be much more risk aware (Guldberg, 2000). Yet the view of children being increasingly at risk is held by people in many industrialised nations in their pursuit of a 'zero-risk society' (Slovic, 1987).

It is the parent's views on dangers rather than the child's that have the greater influence over the child's physical activity. Lack of perceived neighbourhood safety for example led to lower rates of active transport, such as cycling and physical activity (Carver, et al., 2007). There is no comprehensive source of research data on incident rates in outdoor recreation and education at all levels of schooling. The following is offered in

the absence of any other substantial source of information on risks in school outdoor programmes.

Available statistics and expert opinion tend to indicate that the accident and death rate is much lower than media attention and public concern may suggest. No single source provides a definitive fatality rate for outdoor education as circumstances vary greatly between programmes, activities, settings, and organisations. The lowest rate for a large study found was Project Adventure's 20 year incident and fatality study with four million hours yielding safety statistics comparable to working in the real estate or insurance industries (Jillings, Furlong, LaRhette, & Ryan, 1995). Making a comparison with other commonly accepted accident rates, Priest & Gass (1997) stated that "…research has repeatedly shown that adventure activities are significantly safer than most other traditional physical activities" (p. 122).

Researching into injury rates in outdoor activities is challenging and Accident Compensation Corporation (ACC) coding methods have frustrated attempts to produce reliable conclusions (Monasterio, 2006). While incident numbers are well documented, participation rates, which are the key to meaningful comparisons, are not. Grant Davidson (2007) drew some conclusions by combining participation, obtained from SPARC combining incident data from 1997, 1998 and 2000, with 2001 census data and ACC claim data from 2001-2006. These results need to be considered in light of the obvious limitations imposed by combining datasets from different periods of time, but suggest that of the activities compared, rugby union is the most prone to ACC Claim with one claim per 11 players. Snowsports (combined) is the outdoor recreation activity that is most prone to claim with a rate of one claim per 40 participants, a similar level to netball. Mountain biking and recreational cycling had a claim rate of one in 126 and one in 205 riders respectively, while tramping had one of the lowest claim rates using this system at one in 673 participants (Davidson, 2007). Davidson's study did not provide participant days per injury making meaningful comparisons of combined data about outdoor recreation incidents difficult.

Analysis of fatality rates is another means of determining the dangers involved with outdoor activities. In New Zealand there were 79 fatalities over the 20 year period from 1979 in outdoor recreation where people were involved with instruction, guidance or

other professional care (excluding adventure tourism) (Davidson, 2006). This yields a mean fatality rate of 3.95 deaths per annum. Davidson's (2006) comprehensive study collected incident data from twelve New Zealand Outdoor Education providers. From this study the top five activities with the highest incidence of actual or potential serious injury were: ropes courses, kayaking, rock climbing, tramping and sailing. Unfortunately hours of activity exposure were not taken into account in this analysis and these incidents may simply reflect the most popular activities. The overall serious injury rate was 0.11 serious injuries per 1000 participant days, the same rate as the ACC claims rate (Davidson, 2006). Davidson concluded, "…outdoor education in New Zealand is no more dangerous than normal, everyday living" (p. 79).

Dickson, et al. (2000) analysed incident rates in Australia utilising the National Youth Sports Injuries Report (NYSIR) and the National Accident Incident Report Form Database (NAIRFD). These two data sources represented the most comprehensive injury data available and after their analysis Dickson and associates concluded that there was no evidence to support the notion that outdoor pursuits conducted as part of outdoor programmes were riskier than sports activities. In fact the reverse was shown to be true, that outdoor pursuits were safer than most sporting activities.

More recently Cessford (2009, 2010) analysed the New Zealand National Incident Database (NID). The NID is a national record of outdoor recreation incident data and is designed for use by those involved in outdoor activities. I.e., people and organisations involved in self-propelled outdoor pursuit/outdoor adventure activities such as; kayaking, rafting, biking, tramping, trail running, caving, skiing, climbing, sailing, paragliding, diving, etc., as well as motorised adventure activities such as quad biking and jet skiing. These people/organisations could be commercial, educational, not for profit, or informal groups and individuals recreating in the outdoors or any combination of the above. Any of these may register to use the NID for entering data on any incidents they encounter or for generating summary reports from the wider database of incident records (Cessford, 2009).

Similar to other attempts to gain some quantitative measure of incidents in outdoor education and recreation, this database suffers from biases and limitations. In the NID's case these are caused by self-selection and incomplete data entry. While the accuracy

and level of reporting of the ski industry is excellent the scale of non-reporting to the NID by the non-ski outdoors sector is clear with only 363 non-ski industry entries over a five year period. Despite only drawing from 12 organisations (from 25 approached) Davidson (2006) was able to document 1900 incidents over a similar five year period. Two organisational examples were analysed in Cessford (2010) which represented approximately 80,000 participant days. These were broken down by activity to provide an incident rate per 1,000 days and showed the activities with the highest incident rates were coded 'kayaking' and 'ropes' for Organisation A, and 'initiatives' and 'tramping' for Organisation B. The overall incident rate was 0.52 for Organisation A and 0.75 for Organisation B (reduced from 2.07 the previous year). The word 'incident' is used in this database and includes outcomes of fatality, injury, illness, damage to equipment/property, near miss, psychological issue or a combination of these. Given the finding in this same report that major incidents or near misses represented approximately one fifth of the total injuries, the major injury rate for organization A and B come down to the same order as the ACC claims rate.

It would appear from the literature then that participation in outdoor education activities under supervision is no more risky than sports and other activities that may be undertaken as part of a healthy, active lifestyle. Why then might the public consider abseiling to be a riskier activity than common sports such as rugby union or netball? One conclusion is that this is a consequence of familiarity with the latter and media imaging around the former (Dickson, et al., 2000). For the outdoor sector maintaining the perception of risk around activities used in outdoor education maintains an inherent part of the appeal and may be important to the educational philosophy being used. On the other hand maintaining the perception of risk also serves to threaten public acceptance of such activities used in an educational context, with stakeholders questioning the need for high-risk activities when the risks may in fact be very low. Very few clear messages are provided around the significant safety systems employed by practitioners in the outdoor industry, nor is the very low incident rate widespread knowledge (Dickson, et al., 2000).

A second conclusion that may be drawn from the literature as to why the public might perceive outdoor education activities such as abseiling so much more dangerous than a contact sport such as rugby is that the public base their risk perception more on affective

and intuitive cognitive processes than on rational analytical processes. In this case the dread factor associated with the perceived potential of a system failing or rope breaking and a loved one plummeting to their death would override rational analysis. Although there may be almost zero risk the dread factor causes parents to respond disproportionately to the risk. This is comparable to 'stranger danger'. The parental response to the risk of an unknown person harming their child shows beyond reasonable doubt that human beings do not take an actuarial position on risk (Furedi, 2001; Gill, 2007).

To conclude this section it is apparent that the perception of outdoor education as high risk is unwarranted. While a considerable amount of 'noise' and discourse around risk in outdoor education is clear in the literature, there is no support for the theory that outdoor activities conducted in outdoor programmes are riskier than common sports children participate in. That outdoor activities carried out under appropriate supervision is a comparatively safe endeavour is apparent to the expert, however a parent's perception is more likely to be based not on statistics but on such things as how much control they feel, the dread potential, and media reporting.

2.5 Media Reporting and Risk Perception

This section explores the literature around media and the propensity it has to influence public perception of risk. Relevant theory is explored and examples of media reporting associated with outdoor recreation, outdoor education and risk aversion are analysed.

2.5.1 Risk Amplification and the Media

Various factors serve to increase the perception of risk to society disproportionately to expert assessment. Kasperson, Renn, & Slovic (1988) found that mass media reporting on incidents could lead to social amplification of the risk and under reporting could conversely lead to social attenuation of risk perception. Messages about risk are constructed, communicated and transformed at various social sites of which the media is one (Pidgeon, et al., 2003). Media have reported disproportionately on some death events, while others have received light coverage (Combs & Slovic, 1979; Kasperson & Kasperson, 1996). Stark (2001) provided the example that few would consider an ostrich to be as deadly as a shark when it comes to human fatality, but in fact annually ostriches cause twice as many deaths worldwide. Media report generously on shark

attacks and give scant space to less dread-inducing deaths. While experts use risk assessment tools to assess hazards the public typically uses a more intuitive risk judgement process and "For these people experience with hazards typically comes from the news media" (Slovic, 1987, p. 280).

Several writers have identified that the media favour a safety discourse over others with which to portray the outdoor sector (Chisholm & Shaw, 2004; Davidson, 2008; Hersey, 2008). Davidson's (2008) case study of the reporting around the death of three mountain guides and their three clients found the media mischaracterized adventure sports in New Zealand by selective reporting. The result of selective reporting is public misperception. As Dickson, et al (2000) expressed, abseiling is a very safe activity when conducted with modern safety interventions in place, yet the media portray it as high adventure and a risky activity. Without being informed of the safe practices employed and low accident rate the public will not surprisingly view abseiling as risky.

Furedi (2002) argued that the media's focus on risk was symptomatic of a societal process at work rather than its cause with media playing a significant role in fuelling societal perceptions. Furedi searched for the term 'at-risk' in UK newspapers and recorded a ninefold increase in the term over a six-year period. This was, he postulated, the way society increasingly sees itself.

The popular media seize on issues of public safety sometimes making tenuous links between death and causation that may be unfounded. Scant space is often afforded to evidence refuting the existence of the link and hence the perception of risk remains for the layperson as an unfounded fear. Furedi (2002, March 15) reported such was the case when newspapers ran headlines like 'Is the Pill killing us?' and 'Killer Pill', and stated "even though the officials responsible for precipitating this panic have since admitted that the disputed pills are safe, the general impression created is that people have been kept in the dark about 'disastrous side effects'". An historic study found no link between the amount of attention given to various diseases by seven British national daily newspapers and actual mortality statistics for those diseases (Kristiansen, 1983). It is the selective way that the media and other communicators determine what constitutes a risk that underlies the social dynamic behind the formation of risk consciousness. Responses to events are shaped by the consciousness that prevails in society as a whole

at that time and currently an intense sentiment of risk aversion pervades western societies (Furedi, 2006; Gill, 2007).

Haddock and Sword (2004) produced a paper on the effect of a prosecution of the organiser of a public cycling event during which a fatality occurred. This incident escalated fear of liability among school managers even though it was not an event in the education sector. Among those concerned according to Haddock and Sword were the Auckland Primary Principals' Association (APPA), New Zealand Principals' Federation (NZPF) and New Zealand School Trustees' Association (NZSTA). In acknowledgment of the risk amplification potential of media reporting Haddock (2007) recommended the Ministry of Education work with the media to establish a protocol for reporting EOTC incidents.

The abduction and murder of six year old Teresa Cormack in 1987, reinforced and amplified to New Zealand parents the phenomenon of 'stranger danger': the disappearance of children roaming freely in urban streets (Wong, 2005). This raises the question. Could a single dreadful event in outdoor education act as a similar trigger-point for parental risk aversion toward outdoor education?

2.5.2 Parental Risk Aversion in the Media

A number of terms used in the popular press have evolved to describe new social phenomena related to parental risk aversion 'The bubble-wrap generation' or 'cotton-wool kids' (Wong, 2005) describes overly protected children. 'Hot-house kids' or 'battery children' (Kenworthy, 2010) uses metaphors associated with environmentally controlled environments to contrast cosseted children with their 'free range' counterparts. 'Helicopter parenting' (Rettner, 2010) is a term bestowed on those that hover overanxiously over their children interfering with their natural learning. Likewise 'risk illiteracy' describes youth's apparent inability to identify and manage risk as a consequence of the lack or authentic risk taking opportunities faced in their lives (Crisp, 2010, May 20; Sexton, 2009, July 26).

A widely read New Zealand magazine, *Metro's* lead story in February 2005 was "The Cottonwool Kids" which drew attention to a number of indicators of risk aversion and exemplars:

> …of our age of anxiety, a time when parents feel driven to protect their children against harm to a degree that they risk protecting them from life (Wong, 2005, p. 26).

"Fear of traffic and 'stranger danger' are holding our children captive indoors". So stated Gill (2010) in an emotional warning about the perils of childhood, or rather the lack of perils they are exposed to in the face of parental risk aversion. Likewise Freeman-Greene (2010) describes "…those ''helicopter parents'' who hover and swoop on children at the first sign of trouble". The media is not a neutral vehicle and selective reporting is an inherent attribute of the news production process (Davidson, 2008). The news media describe the extreme behaviours of a few individuals, which are soon investigated by other writers and often portrayed as more widespread than the facts support. Such a case is typified in an article published in the New Zealand weekly newspaper *Sunday Star Times* about the New Zealand parenting condition, in which the author stated:

> In short, child rearing has become an exercise in risk minimization, epitomized by stories such as the father who refused to allow his daughter on a school picnic to the beach for fear she might drown. While it's natural for a parent to want to protect their children from danger, you have to wonder: Have we gone too far? (Wane, 2004).

Wane's concluding question serves to generalise the example, suggesting it is a malaise shared by the wider population, rather than the more likely case, an isolated freak example.

The following are recent, local examples of sweeping statements about parents and schools: *The Press* published the following, "In a world where kids are wrapped in cotton wool…" (Goodall, 2009); *The Dominion* reported, "Over-protective mothers won't allow children to make their own way to school for fear they'll be abducted or molested", and "there are pockets of stubborn resistance to the prevailing cotton-wool culture" (Du Fresne, 2010); and *The NZ Herald* carried a column which declared, "Education authorities and parents have become so wimpishly risk-averse" (George, 2008). Such publishing lends support, either directly, or by association, for risk aversion as the default parental condition in New Zealand.

While parental risk aversion is a popular topic in New Zealand media, the origin of articles and research is less commonly founded on the New Zealand population. *The Press* carried an article based entirely on observations of American parents by a professor of sociology and author of *Parenting Out of Control: Anxious Parents in Uncertain Times*, which again generalised about:

> …today's hyper-involved parenting - or helicopter parenting, as some have dubbed it, for its constant hovering (Nelson, 2010).

In similar vein a Dalhousie University (Nova Scotia, Canada) professor expressed concern in the *Sunday Star Times*:

> OUR ANXIETY as parents and efforts to bubblewrap our children may be putting them at more risk than we suspect. In a world of zero tolerance and risk aversion, many loving middle-class families have made their children's lives virtually risk- and responsibility-free. That security comes at a price (Ungar, 2008).

In the Australian press the number of articles focused on parental risk aversion appears even greater than New Zealand and these are regularly reported at www.stuff.co.nz The *Sydney Morning Herald* carried an article with the following observation:

> Even though there is no evidence that it is more dangerous for children to go to the park or walk to school without adults, parents are increasingly wrapping their offspring in cotton wool (Fenech, 2010).

And a similar article quoted the following parent's comment:

> "I've got a couple of kids and I saw the need for [wireless leashes] when we're out ... like at the [Perth] Royal Show or shopping centres. It only takes two seconds: you turn your back and they're gone,'' she said (Elder, 2009).

The emerging impression gained from these articles is of a collective parental condition confirming Furedi's (2001) paranoid parent thesis. The apparent intent of all of the articles was to draw attention to or express disquiet at the prevailing state of the modern day parent. Many articles offered parenting solutions, such as those in *Free-range Kids, Happy Parents* (Kenworthy, 2010) and *Cottonwool Kids* (Wong, 2005). At the same

time these articles reinforced the common perception that parental risk aversion is reality, further contributing to the noise around risk aversion.

2.5.3 Risk Aversion and Outdoor Education in the Media

Following the Mangatepopo Tragedy where six students and their teacher died after they were washed over a weir on an outdoor education experience, The *North Shore Times* ran a piece quoting Sir Peter Blake Marine Education and Recreation Centre (MERC) trustee and patron, David Gray:

> "Schools, parents and school trustees have recently become terrified of the consequences of outdoor pursuits," Mr. Gray says. "This has resulted in some schools and parents withdrawing their bookings." ("Peter Blake centre faces closure," 2008).

This article claims risk aversion from schools, parents and school trustees is tangibly translating into withheld consent and a drop in outdoor education participation. This article was supported by a second piece further highlighting the adverse affect of parental risk aversion on the centre's bookings ("Education centre solves cash flow woes," 2008).

Other press and magazine media have carried articles reporting reduced outdoor education opportunity for students as a result of parental and school aversion to risk and liability, or a concern that this will happen, notably: Hubbard (2003), "Managing the risk on camp" (2004); and Sutton (2004).

It is clear from some statements that concerns are fueled by conjecture as below:

> …we also worry our kids are being wrapped in cotton wool, and fear schools will cancel outdoor activities rather than be liable under "tough new laws." Whatever happened, we ask, to the adventuring spirit of Sir Edmund Hillary? ("Managing the risk on camp," 2004).

Other reports indicate liability concerns are actually affecting outdoor education in adverse ways. For example an education story carried by *The Marlborough Times*,

carried quotes from a number of principals and executives in the education sector such as the following:

> Marlborough school students are missing out on outdoor activities because of the risk of teachers being sued if a student is injured.
>
> Marlborough Girls' College principal Greta Firth said safety in education guidelines had led to the school canning caving, kayaking and white water rafting because she did not want to leave teachers in a position where they might be personably liable. "You can't run the risk even if you are well prepared as you can be," she said (Hubbard, 2003).

It would appear there is anecdotal evidence of reduced outdoor educational opportunities as a result of parental and school safety concerns. Fear of accidents and fear of liability emerge as two of the drivers of reduced participation. The anecdotes suggest fear of liability and critical incidents are a cause of reduced programming in schools and withdrawn bookings with outdoor providers.

In recent years a number of education incidents have occurred involving outdoor activities and been reported substantially in the media. In chronological order these are as follows:

1995 Cave Creek platform collapse in which 13 people were killed (Isaac, 1997);
2000 Kauaeranga Valley swimming hole double drowning (Mager, 2000);
2001 Clarence River canoeing double fatality (Maritime New Zealand, 2001);
2002 Buller river kayaking drowning (Devereux, 2005);
2004 Waiohine River rafting fatality (Maritime New Zealand, 2004);
2007 Mangatepopo Gorge tragedy (Devonport, 2010);
2007 Waipu Cave near-miss incident (Campbell, 2007);
2009 Manawatu bridge swinging fatality (McDonald, 2010).

2.6 Conclusion and Research Questions

Outdoor recreation and outdoor education have long and established traditions in New Zealand and contribute significantly to society and culture. New Zealand has deteriorating health statistics similar to much of the western world and increasing activity levels in all ages of the population is a major health goal of the New Zealand Government. Because of the cultural history of outdoor recreation in New Zealand and the relative closeness and abundance of outdoor natural spaces to population centres, outdoor recreation could prove useful to develop healthy activity levels in young people and hence healthy lifestyles. As a consequence outdoor education has been adopted as a major priority for New Zealand Government (Ministry of Education, 1999; SPARC, 2008b).

The review of literature reveals infrequent but ongoing fatalities (some of them multiple fatalities) in outdoor education in New Zealand that are widely reported in the media. The media is a recognised amplifier of risk events, which leads to elevated public perception of risk. Society appears to have a lowering tolerance of risk and a number of commentators have highlighted parental risk aversion especially in the popular media. Likewise school managers have shown concern over both risks of liability regarding outdoor education. Both are consistent with the risk society thesis postulated by Ulrich Beck (1992). Risk is widely supported in the discourse in outdoor education as a key component of outdoor education management because it affects a number of educational and developmental outcomes. The inherent risk involved in outdoor education and outdoor recreation and the pedagogical use of outdoor education in a society proposed to be increasingly averse to risk suggests conflicting trends and priorities. Several mechanisms exist that amplify the risks in outdoor education such as selective media reporting and the extensive discourse on risk in the sector. This creates potential misperceptions regarding the actual risks associated with outdoor activities in schooling.

Lupton and Tullock's (2002) study suggested national groupings and international variances may mean the risk society thesis is not generalisable to all populations. They expressed the need for further empirical studies that measure whether groups have adopted those characteristics claimed for them by risk society theorists. Parents (or legal guardians) and teachers are principal actors in the tension previously mentioned. They

are the key decision makers with regard to student participation in outdoor education, determining whether their children go on camp, determining what students do on camps and where they go camping.

This study is principally concerned with how perceived risk impacts on the opportunity for physical activity and engaging with nature that recreation in the outdoors or outdoor education activities can provide. It sought to determine whether perceived risk has a detrimental effect on such opportunities for young people. This study also explores perceptions of risk between parents and teachers, determining how much risk is acceptable to each. In Brown's (1998) *Inventory of Risk Management Research Needs in the Outdoor Recreation Sector* both, factors influencing perceived risk and risk comparisons were identified as areas of need.

The target populations for this research were EOTC teachers in New Zealand primary and intermediate schools, the parents of children attending these schools, and outdoor education providers who serve pre-teenage schoolchildren in New Zealand. This age group was focused on because it is during these earlier years at school that children are first exposed to outdoor education activities as part of the formal school curriculum. It is also a life stage that has an important formative influence on attitudes towards the outdoors and recreation and where active leisure is experienced, often for the first time.

2.6.1 Research Questions

Parental attitude to risk is anecdotally used as a reason some schools have reduced outdoor education, avoided outdoor activities involving water and otherwise compromised the learning potential of EOTC. Empirical assessment will help confirm or deny elevated perception of risk in parents. One way of doing this is by comparison with teachers. The literature suggests that today's parents are more risk averse than in the past and that teachers have concerns around risk and liability. If school managers are basing changes in outdoor education on parental concerns it would be useful to know if these are well informed in terms of the national picture, rather than based on the complaints of isolated persons, not representative of the majority. The following question was investigated.

Question 1: Do Parents' and Teachers' Perceptions of Risk Differ?

Following from Question 1 it is necessary to have a measure of the acceptability of risks to determine whether differences in risk perception are meaningful: that is, does any difference in perception of risk translate into a difference in what is regarded as acceptable for children? Hence the following question was explored.

Question 2: Do Parents Have a Higher Acceptance of Risk Than Teachers?

The literature indicates that the risk society thesis may not be applicable to all groupings in society and some commentators have suggested there is a need for more empirical research to shed light on these variances. Themes emerged from analysis of interview data from this current study and it was decided that data analyses from the quantitative component of the study should be conducted to show empirical support or otherwise for these themes (data gathering tools are discussed in Methods chapter 3). The following questions were developed from: a) themes in the interview data that suggested differences may be apparent in risk perception for these groups, and/or b) literature and anecdote as indicated.

Differences in rural and urban perceptions of risk emerged as a strong theme in provider interviews (see *Provider Interview Data*, Results chapter, p. 94 this thesis). Bonner's (1997) study of Canadian parents living in rural areas found that they felt their children were safer than they would be in the city, and hence their concern was lower and attitude toward their children's whereabouts was more relaxed. Little research has been conducted on rural attitudes to risk and the following question was posed to explore differences in risk perception that may exist in New Zealand between city and rural populations.

Question 3: Does Residing in an Urban or Rural Area Affect Perception of Risk?

The literature showed differences in content and amount of outdoor education conducted by schools of different decile. Not all of these differences logically suggested they were based purely on issues of funding. The following question was designed to eliminate risk perception as a factor causing these differences.

Research Question 4: Do Socioeconomic Characteristics Affect Perception of Risk?

Anecdote suggested differences in risk perception may be apparent between the North and South Islands for parents and teachers. Given the different geography in each island, the population density, and media imaging associating characteristics of South Islanders with the ruggedness of their landscape the following question was posed.

Research Question 5: Does Residence in the North or South Island of New Zealand Affect the Perception of Risk?

Lower participation in outdoor education, either by reduction made to programming or by reduction in willingness of parents to consent was stated, both by anecdote and reporting in the media, as a response to recent outdoor education fatalities in New Zealand. The true effect of this is unknown. A correct measure of the parental and school response will assist understanding of the effect of risk perception on outdoor education opportunities. There were also indications that more outdoor education is being conducted within the school grounds, which would likely have a bearing on the quality of outdoor education. This effect may be linked to risk associated with conducting activities in authentic outdoor environments. The following question was developed to examine to what extent risk perception was elevated by outdoor education tragedies and associated media reporting and the affect of this on participation.

Research Question 6: Does the Occurrence of High Profile Accidents Affect Participation in Outdoor Recreation/Education in Schools?

CHAPTER 3 METHODS

3.1 Introduction

This chapter introduces the study design and outlines the methodological approach used. A multi-method study design was adopted in order to address the research questions developed in Chapter 2. The two primary data gathering instruments employed in this study were semi-structured interviews and online self-reply questionnaires. Reviewing relevant research literature developed each of these methods. This chapter details the research instruments utilized and provides an overview of process used to collect data. The ethical considerations of conducting this study are also outlined and the steps taken to mitigate potential issues explained. Finally, the chapter concludes with a summary of what has been presented.

3.2 Paradigm

A paradigm defines how one perceives reality, how one interprets knowledge and how these assumptions about reality influence the acquisition of knowledge (Priest, 1999b). Thus, a paradigm is a basic set of beliefs that informs the researcher's philosophical stance or dominant world view (Jennings, 2001). While there are still purist quantitative and qualitative researchers that believe qualitative and quantitative research paradigms, including their associated methods, cannot and should not be mixed (Johnson & Onwuegbuzie, 2004), for several decades theorists and practitioners have been actively arguing for an end to the Incompatibility Thesis (Howe, 1988). While in principle positivism and interpretivism occupy diametrically opposed positions. In practice a range of theoretical positions exist. The pole positions on this continuum have their strengths and weaknesses and researchers in some fields are becoming increasingly willing to acknowledge that neither view holds all the answers. In social science research there is not the same purity in the positions as may be found in other sciences (Denscombe, 2002). Although the theory may state that positivism and interpretivism are incompatible in terms of their basic beliefs about social reality, in practice social scientists have borrowed from the other paradigm when they feel it is necessary (Denscombe, 2002).

In social science research pragmatism is problem centred rather than method centred, using all approaches to understand the problem and using pluralistic approaches to derive knowledge about the problem (Tashakkori & Teddlie, 1998). It "allows one to eschew methodological orthodoxy in favour of *methodological appropriateness* as the primary criterion for judging methodological quality, recognising that different methods are appropriate for different situations" (Patton, 2002, p. 72). Current literature suggests mixed methodological approaches have earned not only acceptance in the social sciences, but as Basit (2010, p. 17) claimed, "A combination of quantitative and qualitative methodologies is increasingly being favoured by educational researchers", and Johnson and Onwuegbuzie (2004, p. 14) stated that eclecticism "…frequently results in superior research (compared to monomethod research)".

Such pragmatists consider the method and world view to be less important than the research question and explore the latter with the best methodological tools available (Tashakkori & Teddlie, 1998). Pragmatism then, is grounded in the notion of choosing

'horses for courses'. Caution should be applied when combining methodologies to ensure the sum of the mixed approach does lead to a better result than either single methodology conducted alone (Creswell, 2003).

This study adopts a pragmatic paradigm in order to gain a deeper understanding of the influence of risk perception in outdoor education. It is a mixed methods study using quantitative and qualitative techniques applied concurrently. Partly this was because of the absurdity of accepting the positivist assumption that ""facts" are independent of any individual's subjective experience and values" (Hesse-Biber, 2010, p. 26), whilst exploring risk perception which almost by definition is dependent on individual's subjective experiences and values (Slovic, 2000). Although quantified findings were sought from this study, the literature suggested strongly that in this field if they were qualified those findings would be enhanced. Therefore qualitative methods were integrated within a predominantly quantitative study. This presents a number of advantages to the study, assisting with the correct interpretation of survey responses, adding context and richness to the data, and adding validity to the findings. The next section expands on the methodological approach of the study.

3.3 Methodology

3.3.1 Integrating Qualitative and Quantitative Approaches

Tashakkori and Teddlie (2002) noted three areas where a mixed methods approach was superior to either quantitative or qualitative analysis alone. First is the ability to answer research questions that other approaches cannot; mixed methods can answer simultaneously confirmatory and exploratory questions. Second they provide stronger inferences through depth and breadth in answer to complex social phenomena. Third they provide the opportunity through divergent findings for an expression of differing viewpoints. Each of these has direct relevance to the research intentions of this study.

This study's intention was the exploration and measurement of risk perception, a concept that the literature reveals people perceive in "complex and contradictory ways" (Humberstone & Stan, 2009, p. 30). Furthermore, the research in this area has been described as comprising of "cumulative disorder" (Wilkinson, 2001, p. 15). In light of the above, Priest (1999b) lent strong support to a mixed method approach stating that a mixed method approach is most appropriate for investigating complex psychological and sociological phenomena such as perceptions, decision making and understanding.

Bell (2005) stated that the research methodology adopted will depend on the nature of the enquiry and the type of information required. This study had both large data sources (New Zealand primary and intermediate schools, N = 2,167 and New Zealand parents) and a small data source (outdoor education providers meeting the criteria for the study, N = 13). Using mixed methods enabled data to be collected from these populations in appropriate ways. It enabled data to be collected from parents and teachers using large-scale surveys allowing inferences regarding the population to be made via statistical analysis (Basit, 2010). It enabled open ended questions to be imbedded in an otherwise quantitative tool to elaborate, enhance, illustrate and clarify numerical data (Greene, Caracelli, & Graham, 1989). It enabled data to be collected from in-depth interviews allowing the researcher to explain social reality as it was perceived and created by the research participants themselves. The gathering of numerical information as well as text information was designed to provide richness to data, to obtain the benefits of both quantitative and qualitative design.

3.3.2 Complementarity

Greene, Caracelli, and Graham (1989, p. 259) identified *complementarity* as a purpose for mixed-method design research: complementarity seeks elaboration, enhancement, illustration and clarification of the results from one method with the results of the other. It helps the researcher gain a fuller understanding of the research problem assisting with interpretability and meaningfulness of results. This study sought to improve both interpretability and validity of numerical data by using multiple methods within-stage whereby qualitative open-ended questions were used in quantitative surveys.

3.3.3 Triangulation

Triangulation is a design strategy that is used to establish validity in research by looking at the same issue from different perspectives (Basit, 2010; Creswell, 2003). By combining multiple observers, theories, methods, researchers can endeavour to overcome the intrinsic biases or weaknesses of single method, and single-observer studies. Triangulation then, prevents the investigator from too readily accepting initial impressions. In educational research there is justification for employing at least three different viewpoints (Burns, 1997), however other researchers have stated that investigating the same phenomena by using two methods still constitutes triangulation (Basit, 2010). An element of triangulation was employed in this study by contrasting

perceptions from outdoor providers gleaned from interview data with findings from survey data. Denzin (1978) identified using more than one group of people as a form of *data triangulation*. Basit (2010) referred to this as *sample triangulation,* whereby the same issues are examined by interrogating different groups of participants. This study used multiple data sources in this way, whereby the provider interviews were used to corroborate survey findings.

In summary the specific mixed-method design in this study was quantitative dominant phased concurrently. That is, in terms of paradigm emphasis a quantitative approach was primarily used with integrated qualitative aspects, and the data were gathered simultaneously, integrating the findings at the interpretive stage of the study. The mixed methodology adopted was considered the best approach for this study as it:

- Was regarded by the literature as a robust match for the nature of the phenomenon being studied.
- Allowed for the phenomena to be explored using multiple perspectives providing validity through comparison with the perspective of providers.
- Allowed greater completeness and meaning to be given to analysis of the data through complementarity.

3.4 The Participants

Data were required from each of three groups that influence children's participation in outdoor education and outdoor recreation activities; parents, school, and providers.

3.4.1 Schools

While Boards of Trustees (BoTs) influence the inclusion of outdoor education activities and the documentation required around these activities it is the school principal and teachers of EOTC that have the greatest ability to influence school outdoor education programmes. The Ministry of Education's (2009) guidelines made a strong suggestion for BoTs to appoint an EOTC co-ordinator or committee as a means of meeting their health and safety obligations. The EOTC Co-ordinator ideally:

> …will have experience relevant to the school's EOTC programme and a strong belief in using EOTC as an effective part of pedagogy to support teaching and learning. Their responsibilities cover three major areas: staff competence and best practice, health and safety, and equipment and resources (Ministry of Education, 2009a, p. 20).

This person should be well suited to respond on behalf of the school regarding EOTC matters. Therefore data were sought from either the EOTC co-ordinator, which most schools should have, or from the school principal, who is the default EOTC co-ordinator in smaller schools. Included in the study were full primary (Year 1-8), full intermediate (Year 7-8), composite schools (Year 1-13 or Year 7-13) and contributing schools (Year 1-6). Kura Kaupapa and special schools were excluded as being beyond the resourcing of the study to survey appropriately.

3.4.2 Parents

A parental perspective was sought from parents or legal guardians of children at primary and intermediate schools. Ensuring the sample is representative and not biased is the major objective of sampling (Burns, 1997) and for this study a sample was required that represented parents nationally and would fairly reflect potential differences regionally, ethnically, and socioeconomically. Sampling this group also needed to be cost effective.

It was determined the best way to invite parental participation in research about schooling was an approach via the school. Retaining control of a surveying mechanism administered by the schools was unlikely. The potential for data to be skewed by schools that promoted supporting the research while others did not rendered this approach problematic. Contacting parents separately from the school also posed significant problems. A database of lists and contact details for all parents of schoolchildren is not kept in New Zealand and individual schools are not permitted to release details of parents or their children. The population of parents of pre-teenage children is also a very large group to survey, beyond the resourcing of this study. Since sample size is less important than representativeness (Burns, 1997) a decision was made to target a smaller population of parents, those who served on school BoTs. This was based on three considerations. Firstly because these parents are contactable via schools it provided a practical means of administering the survey, which made the study feasible. The email sent to schools was titled “Please forward to the school BoT chairperson” and contained an invite for a parent on the board to participate in the study.

The second consideration was that parents who serve on BoTs have, through their role on the Board, familiarity with the issues of risk, risk management and safety and the

EOTC curriculum in schools. As a consequence, this group represents respondents who have relevant information and opinions on the subject of this study. This presumption is based on the Ministry of Education's (2009) *EOTC Guidelines,* which stated:

> The board of trustees, through the principal, must ensure policies and procedures are in place in three major areas: staff competence and best practice, health and safety, and equipment and resources (p. 19).

The EOTC guidelines outline 26 specific responsibilities of BoTs "consistent with the National Administrative Guidelines (NAGs) 1 and 5; the Health and Safety in Employment Act, 1992; The *Health and Safety Code of Practice for State Primary, Composite, and Secondary Schools*; and accepted best practice" (Ministry of Education, 2002, p. 12). BoT members should therefore be expected to have a clear understanding of risks associated with any outdoor recreation activity programming within the school.

The third consideration was that such a targeted sub-sample should minimise bias due to under or overrepresentation from any particular schools through access to technology, overzealous promotion in some schools, or other possible sources of bias that could result from attempting to survey all parents.

The parental population sampled therefore is by design a sample of parents who were BoT members of the school with children at that school. This raised the possibility of the potential for bias within this sub-sample of the parent group. The BoT parent subgroup was analysed for potential bias in demographic characteristics. Almost all parents are eligible to be trustees except those excluded by Section 103 and 103A of the Education Act, 1989, excluding such persons as bankrupts and illegal immigrants (Ministry of Education, 2010a). Data on the BoT was available through the Ministry of Education's Education Counts website. To the extent that the data allowed, characteristics were compared between the BoT survey data for 2006 (New Zealand Government, 2010) and the 2006 census data (Statistics New Zealand, 2006). Ethnicity was the only relevant demographic characteristic and is compared in Figure 3.1.

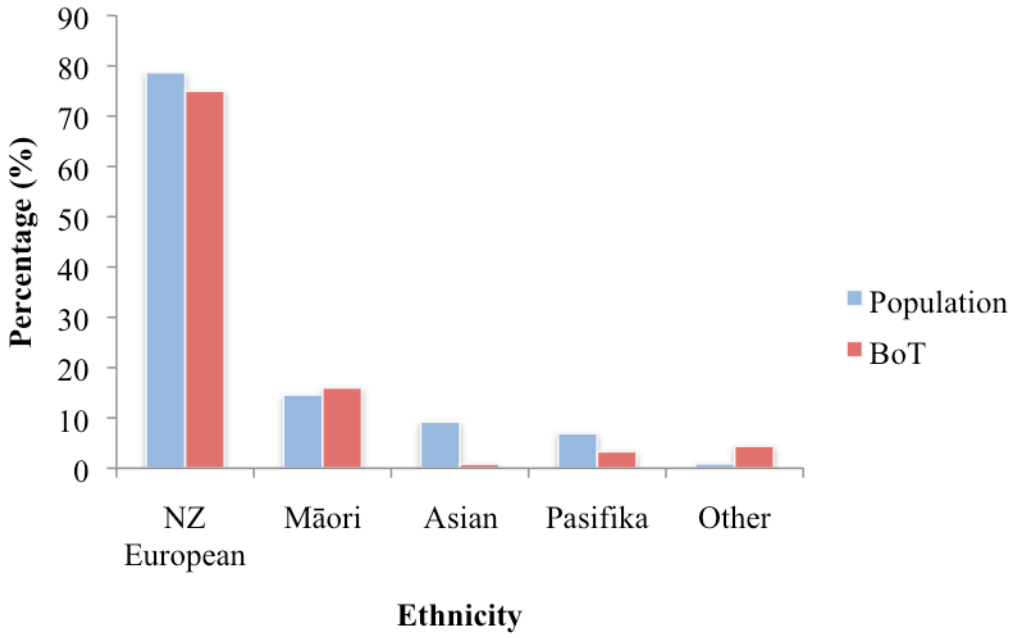

Figure 3.1 *Representativeness of BoT Population by Ethnicity*

The two largest population groups NZ European and Maori showed good representation on BoTs, while Asia and Pasfika did not. It was deduced from this that the results should represent the general population well with regard to ethnicity with the exception of minority ethnic groups.

One of the advantages of using a BoT sub-sample is that many parental demographics should be proportionately represented according to their frequency in the population. The regional spread of schools should reflect the regional spread of the population. Socioeconomic status should be reflected by the decile rating of the schools. Decile rating is a measure of the socioeconomic status of the community from which the school draws. Decile rating is based on census information from addresses of students of the school and is weighted on the household income of students from the school, occupation, household crowding, educational qualifications and income support (Ministry of Education, 2011). No evidence to support or refute better educated parents being drawn to BoT representation could be found.

It was concluded that the sub-sample, while imperfect would provide data representative of the general population of parents. It may be more representative of those parents who were better educated (analysis of the data would indicate if this was the case), and it was not expected to represent minority ethnic groups well.

3.4.3 Outdoor Recreation and Education Providers

Providers occupy that part of the outdoor education matrix that frequently interfaces between schools, parents, students, and the activities. A sample of experts from this grouping was chosen to explore this perspective. A purposive sample of key providers was constructed. These were invited to participate in the study on the basis that:

1. They were significant providers of outdoor recreation and education opportunities for primary and intermediate schools.
2. Pre-year nine students formed a core component of their business.
3. They were members of Outdoors New Zealand (ONZ) and were sourced from the ONZ membership list (Outdoors New Zealand, 2010).

The last characteristic suggested a commitment to the industry and in all cases resulted in providers with a long history of involvement in outdoor recreation and education. These providers were from both the not-for-profit and the commercial sector and there were 13 that met the above criteria. The key manager was phoned and invited to participate in the study or to suggest a suitably experienced employee who may be willing to participate. Desirable qualities for the key-informant were: long experience in the outdoor sector, long history with the organisation, and high qualifications relevant to the outdoor sector. Once identified, the provider was sent an email containing the participant information sheet and a written invitation, which was followed by a phone call several days later. One of those approached failed to follow through with requests for availability despite agreeing to be interviewed and one declined to be involved for undisclosed reasons. The 11 interviewed providers provided a regional spread across New Zealand (see Table 3.1).

Table 3.1 *Outdoor Providers by Region.*

Provider	**Region**
YMCA Shakespear Lodge	Hibiscus Coast
MERC	North Shore City
Bigfoot Adventures	North Shore City
YouthTown	Auckland
Manukau on the Move	South Auckland
Christian Camping New Zealand, Sonshine Ranch	Papakura
Foundation for Youth Development (Kiwi Can)	National
YMCA Waitaki	Wellington
Boyle River Outdoor Education Centre	Marlborough
YMCA Wainui	Christchurch
Adventure Southland	Invercargill

3.5 Instrument Design

3.5.1 Schools and Parents Surveys

Surveys allow data to be gathered from a large number of respondents enabling a large amount of information to be quickly generated (Oppenheim, 2004). If the sample is representative of the population the findings are generalisable enabling inferences to be made with some degree of confidence about the wider population (Basit, 2010). Given the large sample populations of both EOTC Co-ordinators and parents, and the geographical spread of the samples, collecting data by email surveying was considered suitable for these groups. The aim of the parent and teacher surveys for this study agrees with Bell's (2005) description "to obtain answers to the same questions from a large number of individuals to enable the researcher not only to describe, but also to compare, to relate one characteristic to another and to demonstrate that certain features exist in certain categories" (p. 14).

Basit (2010, p. 25) observes that: "The survey is the most commonly used descriptive method in educational research…", which suggested widespread support for its legitimacy. Surveying provides a cost effective means of gathering information from large geographically dispersed populations (1999, p. 188) and Basit highlights the value

of utilising modern technologies, stating: “Internet surveys cost less, save time, are easy to administer, and data collected through web-based surveys can be processed automatically” (2010, p. 30). Other benefits were low researcher bias and greater anonymity (Frankfort-Nachmias & Nachmias, 1997).

While there were clear advantages to using an online survey disadvantages were also stated in the literature: difficulty in getting a high response rate, no control over environment and hence no control over who actually fills out the survey, poor ability to clarify questions, and poor utility of open ended questions, (Robson, 1993). The literature suggested the key to success with such surveys was in questionnaire design and implementation. Self-selection is an inherent implication of self-completion surveys and this coupled with low participation rates could result in internal bias in the data. Response rate therefore is very significant when making generalisations (Frankfort-Nachmias & Nachmias, 1997) and efforts to maximise this would be important to this study. So while the constraints of using online questionnaires would have to be accepted, some issues could be mitigated by care taken in design and implementation.

Two significant constraints of this study were a limited budget and a short timeframe. On balance the circumstances, constraints and aims of the study supported the use of an online questionnaire and in accepting some of the disadvantage solace was taken from Robson’s (1993) statement, “By presenting all respondents with the same standardised questions carefully worded after piloting, it is possible to obtain high reliability of response” (p. 231). The online questionnaire was implemented using LimeSurvey software (*LimeSurvey*, 2011) with the sample groups being invited to participate via email. Predominantly numerical data, or data that could easily be numericised were requested to allow easy statistical analysis, while open-ended questions were asked to provide qualitative data around specific aspects.

3.5.2 Questionnaire Content and Layout

Terminology

For the survey questionnaires to be effective the scope of the terms used needed to be defined and made clear for participants. The focus of this study was the influence of perceived risk on participation in outdoor activities. In schooling these are provided via outdoor education and outdoor recreation. For the purposes of the study they were

treated together. Combining elements of the definitions used in Zink & Boyes (2006) and Hanna (1991) the follow definition was provided for outdoor education and recreation:

> *The use of outdoor natural environments, or activities traditionally associated with the outdoors done indoors for the purpose of teaching and learning or physical recreation in the outdoors.*

The definition was broadened to include artificial wall climbing and pool canoes sports, as introducing children to outdoor pursuits in controlled environments is a logical progression to the outdoors.

For the purpose of establishing uniformity of understanding regarding participant risk rating, 'serious harm' was defined as, *requiring hospitalisation for broken bones, or concussion, or hypothermia, etc.* These examples were consistent with those injuries defined in the category "major impact on individuals" taken from Davidson's (2006) Accident Frequency Severity Chart (adapted and expanded from Priest, 1996).

The activities chosen were based on those that are currently most popular in primary school outdoor education and recreation. This was largely informed by Haddock et al (2009) with the canoe sport further broken down into logical risk categories of pool based, sheltered waters, and on moving water. Other activities were added to this list such as open fires, cookers and trips to remote areas, to identify risk elements of the generic activity of tramping (hiking).

Layout

There is a strong consensus in the literature that the structure and content of self reply questionnaires can significantly influence the data gathered in social science research (Orams & Page, 2000). The layout has been shown to influence the response type and response level (Sanchez, 1992) and Yammarino, Skinner, and Childers (1991) suggested length should not be more than four pages long. As a consequence, length, content and structure were carefully considered for this study. More specifically, the following principles were adopted:

- Terms used with specific meanings to the subject of the survey were defined in the introduction.
- Questions progressed from the easiest to harder (Orams & Page, 2000).
- Funnelling was used to focus topic questions culminating in an open question (Oppenheim, 2004).
- Personal data were requested last in case they objected to this (Orams & Page, 2000).
- A mixture of closed and open-ended questions was used to utilise the advantages of both where appropriate (Oppenheim, 2004).
- The questions were arranged in sections for clarity.
- Clear guidance was provided as to how to answer questions correctly and the software prevented respondents from making errors otherwise possible, such as double entries on a response scale.
- Response scales had as many divisions as reasoned appropriate for the question.
- Oppenheim's (2004) basic wording rules and cautions were used to guide question wording.
- In closed questions a 'not sure' or 'don't know' response category was available to the respondent.

The questionnaire drafts underwent a series of refinements. Two respected peers and two experienced researchers reviewed the questionnaires with changes made in each case. Each questionnaire was piloted to five participants representative of the sample groups. See Appendix 3 for hardcopies of the survey tools used for parents and EOTC Co-ordinators.

3.5.3 Outdoor Recreation and Education Providers

"An interview is a verbal interchange, often face to face, though telephone may be used, in which the interviewer tries to elicit information, beliefs or opinions from another person" (Burns, 1997, p. 328). Interviews were determined as the most appropriate means to research the opinions and experiences of the providers because the key informants were regarded to have in-depth and wide-ranging knowledge related to the influence of risk on participation in particular activities and risk management practices within their organisations. A person-to-person interview is suited to such a level of knowledge. Providers often view the intersection of the activity, the students, the parent

assistants and the teachers. This also suggested they would hold interesting insights that would be best elicited by interviewing.

An open format (non-schedule-structured) was chosen with the interviewee guided by open-ended questions but encouraged to elaborate and share their views in detail. This format is malleable enough to follow emergent leads and standardised enough to register strong patterns (Frankfort-Nachmias & Nachmias, 1997). The number of key-informants was relatively small (n = 11) and, as a consequence, person-to-person interviews by telephone were achievable in a timely and cost-efficient manner. See Appendix 2 for a list of indicative questions used to guide the interviews process.

3.6 Instrument Implementation

3.6.1 Schools

The Principal or EOTC Co-ordinator was invited to participate in the survey by email. The design attempted to reach every school with primary and intermediate school age (i.e. 5-12 years of age) children in New Zealand (with the exception of kura kaupapa or special schools). This both met the requirements for probability sampling and maximised the opportunity to generate sufficient data to provide a high level of confidence in the findings. The sampling strategy was designed to maximise the response rate while minimising intrusion and respecting the working schedules of teachers and principals. Principals/EOTC Co-ordinators were approached through two avenues:

1. via the New Zealand Principals Federation (NZPF) database using an electronic newsletter to members, which, according to the secretary was sent out to 2231 principals of primary and intermediate schools in New Zealand (S. Veldhuizen, personal communication, May 18, 2010);

2. a second approach was made 17 days later utilising the school's generic email address, made to the attention of The Principal/EOTC Co-ordinator. Contact details proved to be incorrect for 45 of these, which reduced the effective population sampled to 2120 schools. The population of schools was determined to be 2,165 schools comprised of four school types as in Table 3.2 below.

Table 3.2 *Target Schools by Type.*

Category	Year	Number
Full primary	1-8	1104
Composite	1-13 or 7-13	150
Intermediate	7-8	122
Contributing	1-6	789
Total target schools		2165

(Ministry of Education, 2010c)

The following strategies, taken from Oppenheim (2004, p. 104) as "factors [that] have been shown to increase response rates", were undertaken in this study:

- Advance warning was given via the NZPF newsletter.
- A follow up request was made 10 days after the second emailed invitation.
- An incentive was provided in the form of five book draw opportunities for each completed survey.
- Confidentiality was guaranteed.
- Anonymity was guaranteed (the book draw entailed the participant opening an unconnected webpage and entering the school details, so these could not be connected to the data).
- The appearance of the survey was aimed to be 'conservative but pleasant'.
- The length of the survey was kept short (tested time to complete ranged from 11-16 minutes.
- The topic was considered to hold a strong degree of interest for the participants and this was conveyed in the invitation email.
- Explaining the method of sampling used.
- Rapport was developed as much as possible through the email invitation conveying both understanding of their workload and gratitude for their time.

Kittleson's (1997) study *Determining Effective Follow-up of E-mail Surveys* found the optimal follow-up was once approximately a week after the initial e-mail invitation was sent. A second follow-up resulted in a negligible increase in the returned rate. At the time of sampling BoT elections were taking place and the second term had recently

started so it was decided that a second follow-up would result in a worthwhile increase in return rate.

3.6.2 Parents

The invitation was directed to the parents or legal guardians. In a similar design to the survey for schools a direct approach to BoT parents was anticipated through the New Zealand School Trustees Association (NZSTA), but though initial negotiations appeared positive, eventually permission was not granted to utilise their members email database. The less desirable route, which proved more than adequate was to email the school's generic email, attention: BoT members. In effect this was a form of opportunity sampling in that a small sample source of parents could be easily accessed for each school through the publically available school's email database. Opportunity sampling can involve "considerable error but is often used because no other alternative is open to the researcher" (Burns, 1997, p. 86). The study design assumed that this group of parents took an active interest in their child's education and therefore would likely yield a good response rate for an educationally focused study. See Results chapter (Chapter 4) for survey response rates.

For both survey groups the invitation email appealed to participants by recognising their time was important, and stating that their participation would be appreciated and would contribute to needed research. The opportunity for the school to win a book through their participation was an attempt to demonstrate appreciation for the participant's time.

3.6.3 Outdoor Recreation and Education Providers

Interviews were arranged at a convenient time to suit the interviewee. The interviewees were thanked for their consenting to the interviews. They were reminded they would be recorded, that their confidentiality would be respected, and that there were no right or wrong responses to questions, simply their opinions and observations were wanted. The interviews were conducted by telephone and recorded with a speakerphone and Apple iPod with microphone attachment.

3.7 Data Analyses

The following characteristics in Table 3.3 and Table 3.4, obtained from the Ministry of Education were used to determine the representativeness of data for decile rating and region.

Table 3.3 *Decile Rating of Target Schools.*

Decile Rating	Full Primary	Contributing	Intermediate
1	109	86	11
2	101	84	15
3	108	72	11
4	100	82	17
5	112	69	18
6	102	75	18
7	112	71	7
8	118	78	10
9	122	76	10
10	115	102	6
Not Assigned	3		
Not Applicable	7		
Total	1,109	795	123

(Ministry of Education, 2010c)

Table 3.4 *Target Schools by Region.*

Region	Full Primary	Contributing	Intermediate
Northern	222	259	48
Central North	315	177	26
Central South	263	149	25
Southern	309	210	24
Total	1,109	795	123

(Ministry of Education, 2010b)

Data were exported from Limesurvey into an Excel spreadsheet. Data were then imported into Statistical Package for the Social Sciences (SPSS), now known as Predictive Analytics Software (PASW), for statistical analysis. Descriptive summary

statistics are presented in tabular and graphic form and appropriate statistical analyses for the significance of influential variables and comparative purposes were undertaken. Qualitative data were coded manually and thematic analysis generated relevant themes. Raw data in terms of direct quotes and narratives are included in the results section. These quotes are presented as either complete participant statements or shorter critical words and comments. All data have been aggregated or given under pseudonyms in order to protect respondents' anonymity and confidentiality.

3.8 Data Reliability Measures

Questionnaires

Reliability measures to what extent, if data procedures were repeated, the same result would be achieved (Basit, 2010; Davidson & Tolich, 2003). Reliability of the surveying instrument was promoted through several actions. Piloting was conducted to ensure wording was unambiguous and unintended responses by participants were minimised (Oppenheim, 2004). The piloting was carried out with subjects similar to those of the study. Item analysis was used at the piloting stage of the questionnaire design to ensure each item was understood as intended. Feedback from pilot participants was discussed and amendments made to the questionnaires as indicated by comments and further discussion. A number of factors relating to questionnaire wording and layout promoted consistency of interpretation and reduced random errors (see Layout, p. 79 this thesis).

Interviews

To promote reliability the interviews were semi-structured and guided by the same set of questions ensuring a degree of uniformity, covering the same core range of content with each interview participant. Qualitative research does not seek duplication to claim reliability; instead it substitutes it with concepts such as: credibility, neutrality, confirmability, dependability, consistency, applicability, trustworthiness, and transferability that demonstrate the data collection and analysis has been scrupulous, honest and precise (Basit, 2010, p. 70). To exemplify these concepts a number of strategies were employed. Procedures undertaken have been documented in enough detail to be replicated. Recording the number of responses that agreed with a theme in effect provided a data audit enabling others to make judgements about the potential for bias or distortion in interpretations. The research context, limitations and the assumptions central to the research are well documented in this thesis assisting others

who might wish to generalise the data. Uniformity in procedure in conducting the interviews and interviewing by phone minimised sources of bias.

3.9 Data Validity Measures

Validity is an estimate of the extent to which a study actually measures or describes the phenomenon it set out to measure or describe (Basit, 2010; Frankfort-Nachmias & Nachmias, 1997; Robson, 1993). A concept, conclusion or measurement should be well founded and correspond accurately to the real world and consideration given to maximising validity follows.

Questionnaires

Validity was achieved by ensuring adequate sampling procedures, appropriate statistical tests, and reliable measurement procedures. A number of checks and balances were in place. Firstly content validity, or "the systematic examination of the test content to determine whether it covers a representative sample of the behaviour domain to be measured" (Anastasi & Urbina, 1997, p. 114), was promoted be ensuring materials within the questionnaire were well-founded through a review of the literature. Respected peers of appropriate standing were used as subject matter experts (SMEs) evaluating test items against the test specifications, which were drawn up through a thorough examination of the subject domain. Specifically this related to the development of the tests of risk perception and risk acceptability. This conferred face validity to the tests.

A major factor influencing external validity is whether the study sample (e.g. the research participants) is representative of the general population along relevant dimensions. To this end, analysis of the BoT subsample was conducted prior to sampling and post sampling the participant data in both samples were analysed for representativeness by comparison with population data.

Interviews

Interview training was obtained from a senior researcher at AUT University to provide confidence that questioning would not skew interviewee answers. Interview participants were reminded there was no 'correct' or 'right' answer to questions; it was their honest opinions and observations that were sought. A practice interview was conducted and

appraised using a self-critique model provided in the training. Interviews were scheduled at the interviewee's convenience and at a place of their choosing to increase the likelihood their responses were not compromised by distraction or inconvenience. The interviews were recorded and quotes transcribed accurately. Internal checks were achieved by asking questions concerning the same issue in different ways (Oppenheim, 2004). Probing was used to clarify answers and explore meanings (Frankfort-Nachmias & Nachmias, 1997). And finally, some effort was taken to ensure the criteria for providers resulted in credible interviewees, in terms of industry experience, qualifications and position within the organisation (aggregated participant profile data is provided in Results chapter, Chapter 4).

An element of triangulation at the data analysis stage gave a level of confidence that what was measured was what was purported to be measured. At the data analysis stage, findings derived from quantitative analysis were compared and contrasted with qualitative findings.

3.10 Ethical Considerations

Ethical considerations are taken into account to "ensure the rights and welfare of persons and communities that are the subject of scientific studies" (Frankfort-Nachmias & Nachmias, 1997, p. 76). In this study a strict process monitored and approved by AUT University was adhered to. After a thorough and independent review of the research design, instruments, documentation and principles to be followed the Auckland University of Technology Ethics Committee granted approval on 18 April 2010, (AUTEC Reference number 10/12). Key ethical principles followed were: informed consent, cost/benefit balance, privacy, and anonymity and confidentiality (Frankfort-Nachmias & Nachmias, 1997).

Treaty of Waitangi

Ethical guidelines provided by AUT University (2010) state that the principles of Te Tiriti o Waitangi must be included when considering any research and planning for relevant consultation and research processes. It emphasises that knowledge gained and shared must incorporate the three principles of participation, protection and partnership, addressed below.

Partnership: In the Treaty of Waitangi, the concept of partnership is used to describe the relationship between the Crown and Maori. In the case of New Zealand, from a research standpoint, partnership requires that researchers work together with Maori communities to ensure that their individual and collective rights are considered and protected. In the context of this study, the concept of partnership requires that the researcher ensure that individual and community rights, as well as all participants' rights, are considered and protected. Although Maori are not being specifically targeted, establishing a good partnership with members of the education community, Maori and non-Maori is important. To that end discussions took place with the executive of the NZPF, with the NZSTA and the Ministry of Education to foster support for the research and a willingness to assist with the fieldwork phase and dissemination of results.

Participation: The concept of participation requires that Maori are extensively involved in the overall research process, especially in research involving Maori. While inclusive methods were used to appeal to all ethnicities, it was beyond the scope of this study to include specialist Maori schools. Kura kaupapa engage with the outdoors in unique ways. To survey this group, questions unique to kura kaupapa using te reo, appropriate methods, partnership and researchers would need to be generated for the research to be appropriate. Including this group would have put the study beyond the size suitable for a Master's project and it was decided to confine the study to the general population.

Protection: In the Treaty of Waitangi, the duty of active protection of Maori, on the part of the Crown, is a central principle. In the realm of research in New Zealand, the concept of protection requires that researchers actively protect all aspects of Maori individual and collective rights and culture (including values, practices, norms, beliefs, language and so forth) in the research process.

All measures were taken to ensure that all participants were protected. The researcher strove to ensure that the well being, privacy, security and rights of research participants were maintained at all times. All data were kept confidential and anonymous. The researcher signed a statement to the effect that no participant will be able to be identified in reports or publications emerging from this study. Only aggregated results and coded quotations were included in the reporting of data. Questionnaires and interviews were designed and implemented to ensure that participants were comfortable,

did not feel threatened and had the option to withdraw from the research at any time. Participant selection was based solely on the basis that the individual was a member of the study group regardless of ethnicity, culture, gender, sexuality or membership of specific collectives.

Informed Consent

Consent was obtained utilising full information disclosure through an information sheet. Voluntarism was emphasised, participants were reminded there would be no disadvantage to them if they did not participate, and language used promoted easy comprehension. Consent forms were presented and participants had the time to consult prior to deciding on giving their consent to participate in the study (see Appendix 2 for samples).

Other Ethical Considerations

A code of ethics for social scientists compiled by Frankfort-Nachmias and Nachmias (1997, p. 91) was used to guide practice to maintain the integrity of the research enterprise. Expertise and graft invested in the research sought to ensure that the benefits of the findings would outweigh participant investment of time in the study. Invitation follow-up was balanced with privacy and an individual's right not to participate. Possible issues for participants taking part in the research were identified with the help of the AUT ethics committee and counselling was offered (on the suggestion of AUTEC) should participants require it as a result of participation. See Appendix 1 for AUT University Ethics application, amendments and approval.

3.11 Chapter Summary

This chapter has outlined the design of the study and described the research procedure in sufficient detail for it to be replicated. A mixed methods approach was adopted as this was assessed as pragmatically the most suitable to gather data from the disparate groups in the study to examine the influence of perceived risk on participation. Complementarity and an element of triangulation were achieved by using qualitative methods to add meaning and depth to quantitative findings and to give confidence in the interpretation of the results. Online self-reply questionnaires were selected as the primary tool for data collection while semi-structured interviews were utilised to capture opinions and insights from key industry informants. Reliability and validity

were achieved through a number of considerations undertaken as informed by the literature. Finally ethical considerations were rigorously incorporated into the design to ensure both the welfare of the participants and the integrity of the research process.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents an analysis of research data gathered using online questionnaires administered to parents and EOTC teachers, and telephone interviews with outdoor recreation/education providers. The research questions posed in Chapter 2 are reiterated and corresponding hypotheses tested. Quantitative results from the surveys are statistically analysed and presented in relation to hypotheses. Open-ended question responses are analysed and presented. Audiotaped provider interviews were analysed qualitatively and the findings are presented as part of the evidence in support or opposition to the hypotheses.

In the first section of this chapter the data collection effort is described. Section 4.3 examines the characteristics of the quantitative data sets derived from the parent questionnaire and teacher questionnaire. The representativeness of the samples is analysed and considered. This section then explores the research questions, related hypotheses and analyses of the data. Finally, Section 4.4 summarises and the findings in the Results chapter.

4.2 Online Survey Effort

The email-out had an 'undelivered' rate of 4%. Consequently 96% of target schools received an invitation (note, this does not indicate whether the email invitation was read, only that the email was successfully delivered). The population was 2165 schools and undelivered emails meant a possible 2078 EOTC Coordinating teacher/principals had the opportunity to respond. These schools also received a separate email to be forwarded to the BoT Chair inviting parent participation. There is no way to determine how many of these invitations reached or were actually read by the intended recipients.

4.2.1 Teacher Questionnaire Data Collection

An initial approach using the New Zealand Principals' Federation (NZPF) database to reach principals directly actually resulted in a less direct approach than anticipated, as the invitation was included in an NZPF electronic newsletter. It was sent out to 2231 primary and intermediate school contacts resulting in a disappointingly low 63 responses. A follow up invitation was emailed out 17 days later to the school's generic email address, attention: Principal/EOTC Coordinator, and a second follow up invitation email was conducted 10 days later. The email addresses were sourced through the Ministry of Education's Educational Counts Website (Ministry of Education, 2010c).

It was discovered during the initial data analysis that there were no private schools in the sample. An assumption that the Ministry of Education database comprising the primary, intermediate and contributing schools contained private and state schools was incorrect. The survey was activated again, the private schools were contacted using the Ministry of Education's separate database for private schools and a separate sampling regime took place for these schools. The response total for the teacher survey was 14% of the target population based on the number of schools that received an invitation (n=292). This was considerably lower that the target response rate of 25%. Zink and Boyes (2006) also achieved a 14% response rate and stated the lower than expected rate "may be indicative of how busy and overburdened outdoor education teachers are" (p. 13). The survey responses were collected as per Table 4.1.

Table 4.1 *Teacher Survey Data Collection Efforts (2010).*

Date	Action	Cumulative survey total
May 4	NZPF electronic newsletter sent	
May 21	School emailed	63
June 1	School follow up email	
June 8		165
June 16	Final follow up	
June 25		247
July 14	Private schools emailed	
July 21	Private schools follow up	276
July 31	Survey closed	292

4.2.2 Parent Survey Data Collection

An approach was made to the New Zealand Schools Trustees Association (NZSTA) to utilise their database of membership schools to access the BoT chair directly. This request was declined and as a consequence the approach was made via the schools generic email database (Ministry of Education, 2010c). Similarly to the teacher survey private schools were sampled by a later and separate sampling regime. The response total number for parent questionnaire was 534 =26% of the target population (the target response rate was 25%). These were collected as per Table 4.2.

Table 4.2 *Parent Survey Data Collection Efforts (2010).*

Date	Action	Cumulative Survey Total
May 21	School emailed	
May 31		232
June 1	School follow up email	
June 8		314
June 16	Final follow up	
June 25		427
July 14	Private schools emailed	
July 21	Private schools follow up	503
July 31	Survey closed	534

4.3 Data Analyses

Data analyses reported in this section includes a consideration of the survey completion rates, the characteristics of the sample groups, and an appraisal of the representativeness of the samples. Four research questions follow with eight associated hypotheses. Tables and figures support quantitative analyses, and where relevant, data from the provider interviews are incorporated into the overall analysis. Results are summarised at the end of each question analysis and the collective findings are highlighted in the final chapter summary.

4.3.1 Completion Rate

Of the 276 completed teacher survey questionnaires 265 were completed in total while 11 were partially completed, resulting in a 96% completion rate. For the parent survey a total of 534 were completed, 468 were completed in total and 66 were partially completed, yielding an 88% completion rate. Completed questions from questionnaires where some questions were not completed were included in the study resulting in different sample sizes for different questions, or question parts in some cases. The completion rate is favourable when compared with Dillman, Tortora, Conradt and Bowker's (1998) study *Influence of plain versus fancy design on response rate for Web surveys*. Completion rates ranged from 82% for fancy questionnaires and 93% for plain versions (cited in Dillman, 2000).

4.3.2 Sample Characteristics and Representativeness

Parents and Teachers

The sample characteristics were analysed and compared where possible with data for the overall population obtained from Statistics New Zealand (New Zealand Government, 2010) or other sources as indicated to establish the representativeness of the samples. Comparisons were made between teacher and parent data sets to highlight trends in the data or skewing that may exist. Further information from analysis of sample characteristics and representativeness can be found in Appendix 4, Figures A-H. A synopsis of the most relevant data follows here.

Of the schools surveyed 93% had an outdoor education programme and 52% had an outdoor recreation programme. Ninety three percent of parents indicated their child participated in outdoor education/recreation as part of the curriculum while 75% said they participated in these activities through extracurricular activity at the school. This is

compatible with Haddock, Thevenar, Reddish and Phillip's (2009) study on EOTC training and qualification needs survey who reported 99% of primary schools did trips to local parks and beaches, while 94% had an EOTC programme that included an overnight. School decile-rating was reasonably evenly distributed for the population, approximately 10% of schools in New Zealand having been ranked to each decile (Ministry of Education, 2010b). Both of the samples were skewed toward the higher-decile schools with a mean decile of 6.3 and 6.6 for parent and teacher samples respectively. The distribution of school type in most surveys was representative of the population, though teachers from private schools were more than twice the proportion of the population and composite schools in the parent survey were underrepresented. School size distribution was largely representative though skewed toward larger school sizes for the teacher sample. Both samples exhibited the same percentage of representation by island and this was slightly skewed toward the South Island when compared to the geographical distribution of all primary and intermediate schools in New Zealand.

In the parent questionnaire additional information was requested on the nature of the participant and with regard to the child they were responding about. Fourteen percent more females than males responded to the parent survey. The median child age was 10 years and the sample is skewed somewhat toward the 9-12 yrs range. The median parent age range was 40-49 years. The median highest educational qualification for the parent group was university undergraduate, however there were an equal number of participants that held university post-graduate qualifications. This was considerably more qualified than the national average for households (New Zealand Government, 2010). The median household income bracket was $80,000 - 100,000 and the largest percentage of parents had an income over $120,000. For the New Zealand population the median income for the 40-49 yr age bracket was $34,500 (New Zealand Government, 2010). Even if double-income families were assumed and this amount was doubled the sample is still significantly biased toward wealthier parents. Eighty nine percent of parents indicated they did outdoor recreation activities in their own time. The Department of Conservation (2006) Review of Camping Opportunities in New Zealand showed that more than one third of New Zealanders go camping, and between 70 and 80 percent of New Zealanders visited a national park in 2005 and 2006, supporting a high percentage of parents doing outdoor recreation in their own time. As expected from analysis of the BoT population data conducted prior to surveying (refer Chapter 3

Methods) there was a disproportionally low representation of Asian and Pasifika participants, but Maori and New Zealand Europeans were represented proportionally to the population (see Figure 4.1).

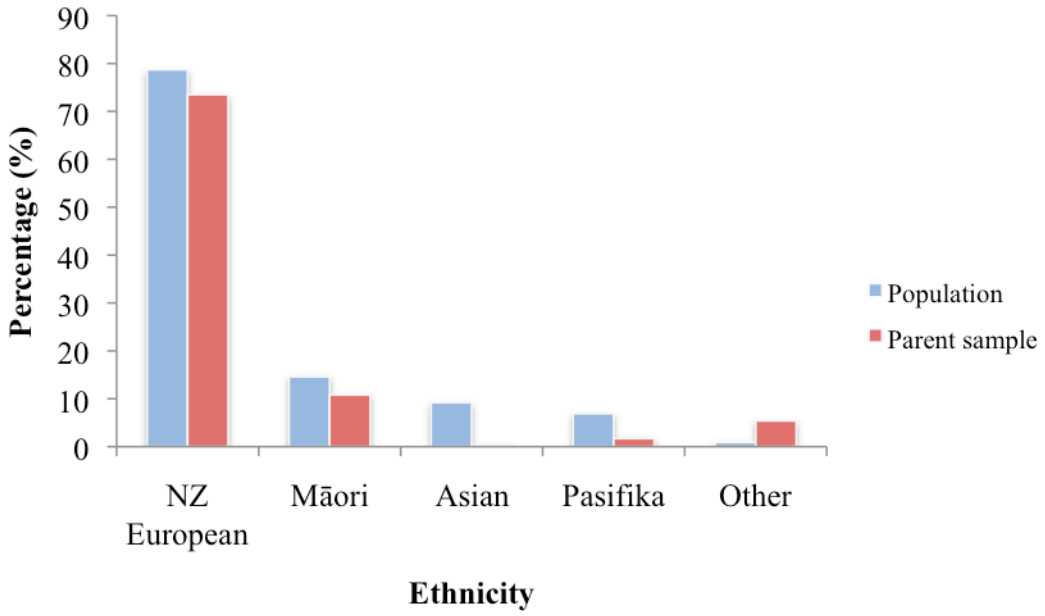

Figure 4.1 *Representativeness of Sample Distribution by Ethnicity.*

In summary analyses of the sample characteristics showed both samples generally represented school type, school size and regional spread when compared with data for the population as a whole. There were some exceptions, private school teachers were over represented, composite schools were under represented and there was a slight skew toward the South Island, but overall the sample can be considered representative of the population in these broad characteristics. Both samples were skewed toward higher-decile schools. The parent survey showed a strong skew toward higher income parents and toward higher qualified parents and had a low response from ethnicities other than Maori and New Zealand European. The parental survey also appears to be skewed toward parents of higher aged children. In summary the sampling regime adopted for this study resulted in samples that were broadly representative of the population with the exception of lower-income parents, lower qualified parents, and Asian and Pasifika parents, which were somewhat under represented. The results of this study need to be interpreted within the context of these observations.

Outdoor Providers

The ideal key informant was considered to be someone:

- Who had long experience working with the 5-12 year-old age range in outdoor education.
- Currently worked for a provider whose work was predominantly with primary and intermediate schools.
- Who held a position in the provider organisation where they had contact with teachers and parents.
- With credible knowledge of the industry, suggested by holding relevant qualifications and industry awards.

The participants were a close match to the ideal in most cases and were regarded as a more than adequate sample group for the purposes of this study. The characteristics of the outdoor provider key informants are shown in Table 4.3. (NB. information has been aggregated in the table to prevent identification of individuals).

Table 4.3 *Outdoor Provider Participant Characteristics*

Characteristic	Provider Key Informant Data
Industry Experience (Years)	Range 7-30 Mean 14 Median 12
Highest Academic Qualification	Honours Degree x 1 Bachelor degree x 4 Post Graduate Diploma x 1 Diploma x 1 Certificate x 3 No Tertiary x 1
Outdoor Qualifications Held	Most participants held a range of outdoor qualifications. The list below shows the breadth and depth of industry awards and qualifications held by the sample. **United Kingdom** Mountain Leader Training Board (MLTB) Summer Mt. Leader, winter training, Single Pitch Supervisors Award (SPSA), British Canoe Union (BCU) Level 2 Kayak, BCU Level 2 Canoe **New Zealand** NZMSC Risk Management Training Certificate, NZOIA level 1 awards, Ski Instructor Certificate, Outdoor Recreation Assistant Leadership Certificate, Yachting New Zealand (YNZ) certification.
Position Held	Centre Manager x3 Programme manager x2 Operations manager x2 Owner operator x1 Chief instructor x2 Instructor x1
Percentage of Work Primary/ Intermediate	The average percentage of the provision of services to primary and intermediate schools by the selected providers was 65 percent.

4.3.3 Research Question 1: Do Parents' and Teachers' Perceptions of Risk Differ?

This question considered whether parents and teachers have a different perception of the risk associated with outdoor education activities provided to primary and intermediate schoolchildren. From the literature review and the volume of writing focussed on parental risk aversion it was predicted that parents would have an elevated perception of risk. As a consequence the following hypothesis was developed and tested.

Hypothesis 1: Parents Perceive Risk to be Higher Than Teachers.

Question 5 from section 2 of the parent questionnaire (Pq S2 Q5) and Question 8.1 from section 1 of the teacher questionnaire (Tq S1 Q8.1) were designed to gauge the perceived risk of serious harm of common outdoor education/recreation activities. A six-point Likert scale was used with ratings of the risk of serious harm ranging from 'no risk' to 'very high risk'. Serious harm was defined on the questionnaire as requiring hospitalisation due to broken bones, or concussion, or hypothermia. In both survey groups the participants were asked to rate the risk of each activity in the range (see Appendix 3 for questionnaires).

Responses for each activity were compared for each group and analysed for statistical significance. The ordinal Likert scale did not meet the parametric test assumption of being interval data. The data met the assumptions for the Mann-Whitney *U* test a nonparametric test chosen for statistical analysis of these data (Norusis, 2003). The teacher group rated the risk higher for every activity in the survey question (see Table 4.4) and the statistical test showed that the difference in mean ranks between the teacher and parent groups was highly significant for every activity ($\underline{z}$ range -4.7 to -13.0, $p < 0.001$).

Two sporting activities, *Netball* and *Rugby*, were included at the end of the list of outdoor recreation activities. When the mean ranks were compared between teachers and parents for each of the outdoor recreation activities, the mean rank responses for teachers were on average 150 rankings higher than the mean ranking responses for parents. When the difference in mean ranks was compared between teachers and parents for the two sporting activities of rugby and netball the difference was only on average 80 rankings higher. The difference in risk perception between teachers and parents was more pronounced with outdoor activities than with sporting activities.

A second analysis was undertaken comparing the mean of all of the risk rating scores of the teacher group with the mean of all the parent group risk rating scores, i.e., the mean of all scores over all the activities was calculated for each group (see Table 4.5). A histogram of the combined responses to Pq S2 Q5 and Tq S1 Q8.1 indicated that the data were normally distributed (see Appendix 4, Figure I) meeting the assumption needed for the independent samples t-test (Norusis, 2003) to compare the means (see Table 4.6). The test result was significant, t (740) = -14, $p < 0.001$. When the perceived risk responses were combined in this way for each group, teachers (M = 4.08, SD = 0.66) perceived the risk of outdoor activities to be higher than parents (M = 3.37, SD = 0.67). The difference between the means was 0.71 (95% CI: 0.81 to 0.61). Relating the means back to the Likert scale descriptors, over all activities the combined responses showed teachers rated risks to be 'moderate' while the parents' risk rating tended toward 'low'. From these tests the hypothesis that parents have a higher perception of risk than teachers was not supported, i.e., data support the contention that teachers perceive risks to be higher than parents.

To summarise the quantitative analyses, the teacher group rated the risk of serious harm higher in each of the activities presented than the parent group. These differences were significant statistically in every case.

Provider Interview Data Analyses

Interview data with outdoor providers were analysed and parental risk aversion did not emerge strongly as a theme. Three participants shared cases of parental caution they considered unwarranted, one opining that parents are 'more protective these days'. Five of the 11 interviewees did not identify an issue with parental protective behaviour being in any way overbearing. Three participants identified over-enthusiasm to be more of an issue, as supported by Participant 2 (P2)'s statement:

> "I actually think that the parents are more gung-ho than we'd like them to be at times."

Another interviewee perceived the parents to be more of a risk than the children. Although examples were given about parental fears transferring to children the emerging theme appeared to be that parents on school camps are not overly concerned about the risks in those outdoor programmes, as indicated by P2:

> "I think parents have quite a lot of trust in the teachers, especially at junior school level."

While participants weren't specifically asked to contrast parental and teacher risk perceptions, data from the interviews supported the findings from the quantitative analyses. In general it was thought that it was the school that held a perception of activities offered by providers as being riskier than parents on the fieldtrips and that perception of the risk was sometimes at odds with that of the provider. P10 passed the following comment about an activity that generally found favour with the students and parents:

> "Some schools have actually stopped their kids doing coasteering. Some schools are not allowed to do it. And it's quite bizarre really because it's probably yielded the least amount of accidents in the last four years that I've been here."

In summary the qualitative data do not support the hypothesis that parents perceive risk to be higher than teachers but provides additional support for the contention that teachers have a higher perception of the risk than parents.

Table 4.4 *Mann-Whitney Test for Parent and Teacher Risk Rating.*

	Group	n	Mean rank	Z	Sig.
Day hike	Parent	460	305	-9.3	0.000
	Teacher	260	446		
Residential school camp	Parent	458	284	-12.6	0.000
	Teacher	260	475		
Trips to remote places (2+ hours from vehicle)	Parent	467	294	-11.8	0.000
	Teacher	264	477		
Overnight tenting on a trip	Parent	468	288	-13.0	0.000
	Teacher	264	489		
Canoeing/kayaking in a pool	Parent	466	313	-8.4	0.000
	Teacher	261	440		
Canoeing/kayaking in sheltered waters	Parent	464	302	-10.2	0.000
	Teacher	264	458		
Canoeing/kayaking on a river	Parent	466	310	-8.7	0.000
	Teacher	258	442		
Science field trip to the bush or natural water feature	Parent	467	312	-9.0	0.000
	Teacher	258	450		
Artificial wall climbing or abseiling	Parent	463	313	-8.0	0.000
	Teacher	262	436		
Rock climbing or abseiling on a natural cliff-face	Parent	454	307	-8.7	0.000
	Teacher	269	444		
Cooking with an open fire	Parent	463	311	-8.2	0.000
	Teacher	262	439		
Activity involving cookers	Parent	464	309	-8.8	0.000
	Teacher	262	443		
Skiing	Parent	461	301	-9.8	0.000
	Teacher	255	448		
Ropes course activities	Parent	461	310	-8.7	0.000
	Teacher	262	440		
Rugby	Parent	462	335	-4.7	0.000
	Teacher	269	405		
Netball	Parent	462	327	-6.0	0.000
	Teacher	268	418		

Table 4.5 *Mean Parent and Teacher Risk Ratings of Activities.*

Group	n	Mean	Std. deviation
Parent	472	3.37	0.66
Teacher	270	4.08	0.67

Table 4.6 *Independent Samples t-Test for Mean Parent and Teacher Risk Ratings*

	95% confidence interval		t-test for equality of means			
	Lower	Upper	t	df	Sig.	Mean difference
Equal variances assumed	-0.808	-0.609	-13.96	740	.000	-0.71

4.3.4 Research Question 2: Do Parents have a Higher Acceptance of Risk Than Teachers?

Question 1 assessed risk perception; Question 2 is concerned with risk acceptance. A risk that is perceived to be high may be regarded as an acceptable risk or as an unacceptable risk depending on the subject's aversion to, or tolerance for risk. This question considers the risk threshold for parents and teachers in terms of what is acceptable risk and what is unacceptable risk when children participate in outdoor education activities provided at primary and intermediate school?

Hypothesis 2: Teachers Have a Higher Tolerance of Risk Than Parents.

Pq S2 Q4 and Tq S1 Q8.3 presented the same list of outdoor education and recreation activities as questions Pq S2 Q5 and Tq S1 Q8.1 used for assessing risk perception. Participants were invited to consider each activity in terms of the acceptability of the risk, as they perceived it and rate each as either 'acceptable', 'unacceptable' or 'unsure'. For the parent group the acceptability was in the context of which activities they would be willing for their child to take part in. For the teachers group it was in the context of which activities their school would be prepared to offer students.

Table 4.6 shows that the 'unacceptable' responses in both the teacher and parent groups as a percentage of the total are increased by the same activities, but in the teacher group the spike in 'unacceptable' responses is higher in most cases.

To evaluate whether there was a significant difference between groups in acceptability of activities their responses were analysed using a two-way contingency table, suitable for non-parametric data (Norusis, 2003). The two variables were the group (teacher or parent) and response ('acceptable' or 'unacceptable'). This was conducted for each activity. Testing by Pearson's chi-square demonstrated significance χ^2 (20, N = 733) = 7.0 to 29.4, $p < 0.05$, for four activities: *trips to remote places*, *canoeing/kayaking on a river*, *rock climbing or abseiling on a natural cliff-face*, *cooking with an open fire, and skiing* (see Table 4.8).

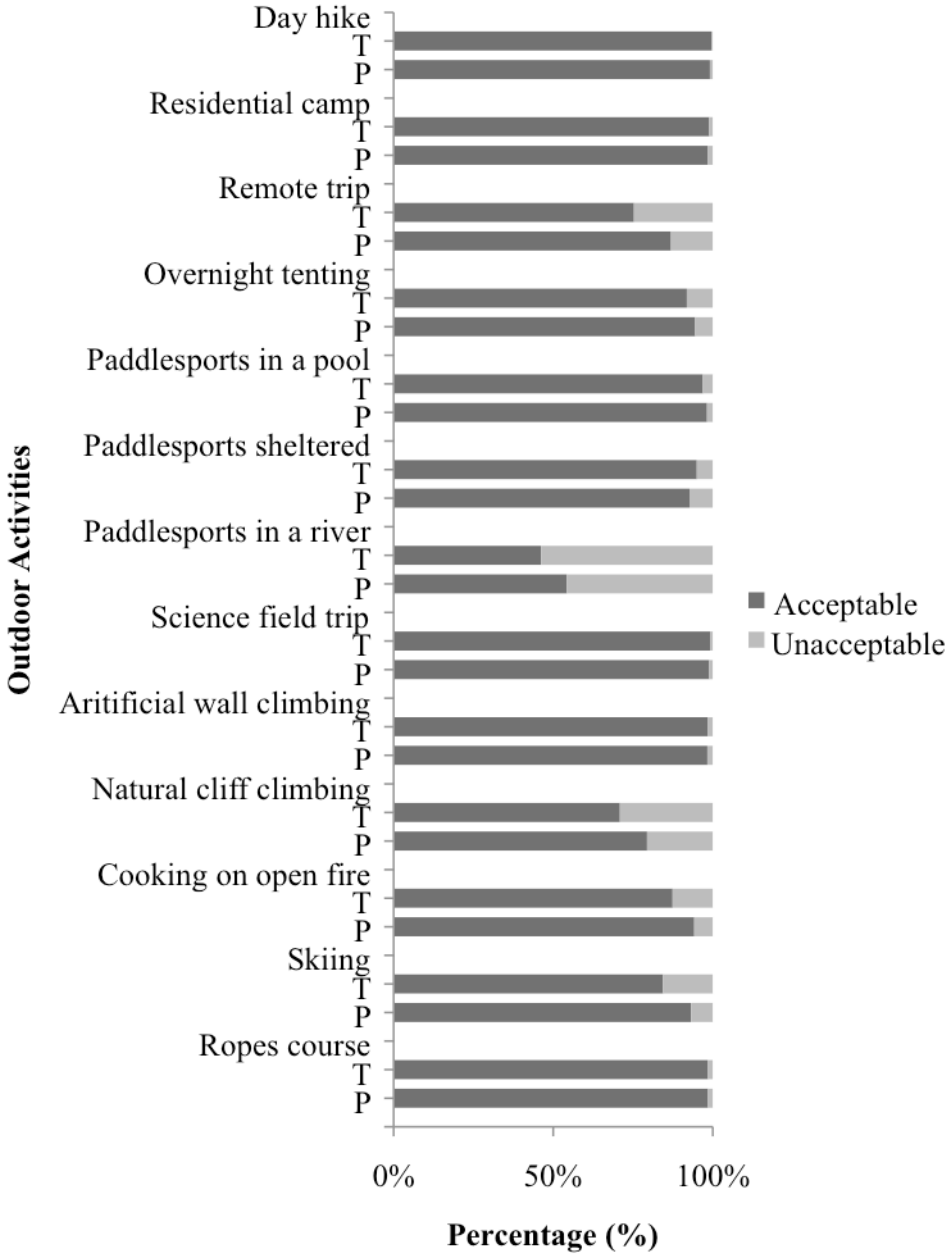

Figure 4.2 *Parent and Teacher Acceptability of Outdoor Activities.*

'Acceptable' responses for all activities were combined for each group and compared between groups. Box plots revealed significant outliers and the distribution was skewed so it was analysed by group using the Mann-Whitney *U* test (Norusis, 2003) (see Table 4.7). The result of the test was significant (z = -3.1, p = 0.002). Contrary to the hypothesis, overall 'acceptable' responses for activities were higher for the teacher group with a mean rank of 341 compared with 391 for the parent group.

From these tests the hypothesis that schools have a higher tolerance of risk than parents is not supported. The contrary case is likely to hold true that parents are willing to tolerate more risk where their children are concerned than teachers are.

For both groups the ‘not sure’ responses appeared closely correlated to the ‘unacceptable’ responses. That is, the greater the percentage of ‘unacceptable’ responses, irrespective of group, the more difficulty participants appeared to have deciding on a response.

In summary, both the parent group and the teacher group showed a spike in ‘unacceptable’ responses for several activities in the range tested. The teachers showed a greater percentage of ‘‘unacceptable’’ responses in these cases. This difference between groups was small but statistically significant for five activities. When all ‘acceptable’ responses were aggregated for each group and mean ranks were compared between groups the parent’s mean rank was higher than the teacher’s. This difference in overall ‘acceptable’ responses between groups was statistically significant but small.

Table 4.7 *Mann-Whitney U Test for Aggregate Acceptable Responses, All Activities.*

Group	n	Mean rank	z	Sig.
Parent	474	391	-3.094	0.002
Teacher	270	341		
Total	744			

Table 4.8 *Contingency Table for Parent/Teacher Acceptability of Activities?*

	Parent			Teacher			χ^2	Sig.
	Yes	No	Unsure	Yes	No	Unsure		
Day hike	456	4	5	267	1	1	1.653	0.438
Residential school camp	457	7	4	263	3	2	0.206	0.902
Trips to remote places (2+ hours walk to vehicle access)	365	55	42	183	60	26	14.481	0.001
Overnight tenting on a trip	426	25	12	238	21	11	3.012	0.222
Canoeing/kayaking in a pool	447	8	7	254	8	3	1.462	0.481
Canoeing/kayaking in sheltered waters	406	32	22	247	13	9	2.305	0.316
Canoeing/kayaking on a river	201	170	78	108	126	33	6.961	0.031
Science field trip to the bush or natural water feature	457	5	4	264	2	1	0.780	0.677
Artificial wall climbing or abseiling	453	8	5	262	4	2	0.248	0.883
Rock climbing or abseiling on a natural cliff-face	319	83	59	173	71	25	8.083	0.018
Cooking with an open fire	423	26	15	639	57	36	17.251	0.000
Activity involving cookers	434	17	12	250	9	10	0.780	0.677
Skiing	411	30	22	195	36	35	29.412	0.000
Ropes course activities	447	7	9	258	4	7	0.345	0.841

4.3.5 Research Question 3: Does Residing in an Urban or Rural Area Affect Perception of Risk?

This question explored 'place of residence' as a predictor of risk perception for the survey groups and considered whether the participant's environment was urban or rural by nature.

Hypothesis 3: City Parents Have a Higher Perception of Risk Than Country Parents.

A new variable was computed recoding schools from the four categories (provided in Pq S1 Q3) into two variables 'city' and 'country' comprised of 'inner city' + 'suburban' and 'small town' + 'rural' respectively. To determine whether the city parent group would score higher on average than the country parent group Pq S2 Q5 responses were compared for each activity and analysed for statistical significance using the Mann-Whitney *U* test (see Table 4.9). Mean ranks for the city group were higher than those for the country group for 12 of the 14 activities tested in the survey question however the difference in mean ranks between the groups tested were statistically significant for only four activities: *Day hike, residential camp, overnight tenting and canoeing/kayaking in sheltered waters*, (z range -2.14 to -3.57, $p < 0.05$).

Nonparametric tests increase the chances of Type II (false negative) errors because they lack the same power as tests that assume an underlying normal distribution (Norusis, 2003), so a second analysis was undertaken comparing the mean of all of the risk ratings scored by the city group with the mean of all of the country group risk rating scores. Thus, the mean score over all the activities was calculated for each group (see Table 4.10). City parents ($M = 3.43$, $SD = 0.67$) rated the risk of outdoor activities to be higher than country parents ($M = 3.31$, $SD = 0.65$). An independent samples t-test (see Table 4.11) demonstrated significance $t\ (466) = 2.045$, $p = 0.041$, indicating the difference in means is unlikely to be due to chance. This difference was very small, 0.12 (95% CI: 0.005 to 0.245). Both parent groups rated the risk between 'low' and 'moderate', with the city group tending slightly higher toward 'moderate'. The hypothesis that city parents have a higher perception of risk than country parents is supported by the quantitative analyses. The between groups difference was very small, and as a consequence, the findings should be interpreted in that context.

Provider Interview Data

When asked about parental attitudes to risk, interview participants commonly referred to a difference between parents of country school children and parents of city school children. Participants conveyed observations that city parents typically expressed greater caution with their children than those from rural schools. P8 stated:

> "Definitely depends on the school or the area they come from… Particularly country schools or schools from outer areas of Auckland, the parents think the activities are more fun than risky."

This difference between city and rural parents was related, in those cases it was mentioned, as being quite noticeable. An interviewee that described over zealous parental risk management by city parents as "wrapping them in cotton wool" related his experience from a rural school, describing the perception of risk as lower, and regarding risk as more akin to adventure than to peril.

To summarise, some providers observed a clear disparity in risk perception between country and city parents with the latter group having the higher perception. The difference measured from questionnaire data was small. A difference in risk rating was statistically significant in four of the activities presented. In each case city parents rated the risk of serious harm higher than country parents. When all the responses were aggregated and averaged over all activities and compared between the two groups the difference between means was significant, but so small as to not be practically meaningful. Although weak support was shown the results were inconclusive.

Table 4.9 *Mann-Whitney U Test for City Parent and Country Parent Risk Rating of Outdoor Activities.*

	Parent group	n	Mean rank	z	Sig.
Day hike	City	229	240	-2.143	0.032
	Country	225	215		
Residential school camp	City	230	249	-3.899	0.000
	Country	223	204		
Trips to remote places (2+ hours walk to vehicle access)	City	231	237	-1.096	0.273
	Country	230	224		
Overnight tenting on a trip	City	232	252	-3.572	0.000
	Country	230	211		
Canoeing/kayaking in a pool	City	232	239	-1.553	0.120
	Country	227	221		
Canoeing/kayaking in sheltered waters	City	231	245	-2.713	0.007
	Country	227	213		
Canoeing/kayaking on a river	City	232	242	-1.882	0.060
	Country	228	219		
Science field trip to the bush or natural water feature	City	232	237	-1.074	0.283
	Country	229	225		
Artificial wall climbing or abseiling	City	229	228	-0.112	0.911
	Country	228	230		
Rock climbing or abseiling on a natural cliff-face	City	230	239	-1.693	0.090
	Country	228	219		
Cooking with an open fire	City	231	231	-0.285	0.775
	Country	226	227		
Activity involving cookers	City	230	237	-1.309	0.191
	Country	228	221		
Skiing	City	228	232	-0.743	0.458
	Country	227	234		
Ropes course activities	City	228	227	-0.215	0.830
	Country	227	229		
Rugby	City	230	232	-0.544	0.586
	Country	226	225		
Netball	City	230	229	-0.014	0.989
	Country	226	228		

Table 4.10 *City Parent and Country Parent Overall Average Risk Ratings of Outdoor Activities.*

Group	n	Mean	Std. deviation
City	234	3.43	0.67
Country	232	3.31	0.65

Table 4.11 *Independent Samples t-Test for City Parent and Country Parent Overall Average Risk Ratings.*

	95% confidence interval		t-test for equality of means			
	Lower	Upper	t	df	Sig.	Mean difference
Equal variances assumed	0.005	0.245	2.045	464	0.041	0.12

Hypothesis 4: City Teachers Have a Higher Perception of Risk Than Country Teachers.

Similar analyses were conducted for Tq S1 Q8.1 and the school data recoded into two variable sets made up of *City* and *Country*. When data for these groups were analysed using the Mann-Whitney *U* test (see Table 4.12) four activities were shown to have a significantly different risk rating: *residential camping*, *overnight tenting on a trip*, *kayaking/canoeing in a pool*, and *cooking on an open fire,* (*z* range -2.17 to -3.08, $p < 0.05$).

Since all activities were given a higher mean ranking by the city teacher group, but only four showed a significant difference, Type II errors may be a consideration. In acknowledgment of this a second analysis was undertaken comparing the mean of all of the risk ratings scored by the city teacher group with the mean of all of the country teacher group risk rating scores. When the risk scores were aggregated and averaged over all activities there was variation between groups: City teacher ($M = 4.16$, $SD = 0.61$) and country teacher ($M = 3.99$, $SD = 0.73$). Assumptions for normality were met and significance was shown comparing means using an independent samples t-test ($t(262) = 2.08$, $p = 0.04$). From these tests, the hypothesis that city teachers perceive the

risks of activities to be higher than country teachers was supported, but not across all activities (see Table 4.13 and Table 4.14 for details of analyses).

The provider interviewee data provided no observations specifically referring to a difference between the teachers in city and rural schools. P9 stated the following:

> "A lot of the schools that we deal with are country schools, and I would think there would be a big difference between the country schools' perception of risk and the city school's. Yeah, just thinking about it most of the schools we deal with are country schools and they're just so gung-ho they'll just go in and do anything."

This statement made general reference to the schools and may be more reflective of the children than the teachers.

In summary, the data did support the hypothesis that city teachers perceive risks in outdoor activities to be higher than their country counterparts. Quantitative analysis demonstrated significance for four of the 14 activities, but the difference in risk perceptions was so small as to not be practically meaningful. Although weak support was shown the results were inconclusive.

Table 4.12 *Mann-Whitney U Test for City Teacher and Country Teacher Risk Rating of Outdoor Activities.*

	Teacher group	n	Mean rank	z	Sig.
Day hike	City	136	134	-1.18	0.20
	Country	121	123		
Residential school camp	City	136	139	-2.78	0.005
	Country	122	121		
Trips to remote places (2+ hours walk to vehicle access)	City	136	137	-1.88	0.06
	Country	122	121		
Overnight tenting on a trip	City	137	142	-3.08	0.002
	Country	121	115		
Canoeing/kayaking in a pool	City	137	137	-2.17	0.03
	Country	118	118		
Canoeing/kayaking in sheltered waters	City	139	135	-1.44	0.15
	Country	119	123		
Canoeing/kayaking on a river	City	136	133	-1.46	0.14
	Country	117	120		
Science field trip to the bush or natural water feature	City	142	135	-0.85	0.40
	Country	120	127		
Artificial wall climbing or abseiling	City	140	129	-0.23	0.82
	Country	116	127		
Rock climbing or abseiling on a natural cliff-face	City	137	133	-1.40	0.16
	Country	116	120		
Cooking with an open fire	City	137	138	-2.33	0.02
	Country	119	118		
Activity involving cookers	City	136	133	-1.02	0.31
	Country	120	124		
Skiing	City	131	127	-0.55	0.59
	Country	118	123		
Ropes course activities	City	138	129	-0.06	0.96
	Country	118	128		
Rugby	City	141	134	-0.56	0.58
	Country	122	129		
Netball	City	140	138	-1.46	0.15
	Country	122	125		

Table 4.13 *Means for City Teachers and Country Teachers for Overall Average Risk Ratings.*

	n	Mean	Std. deviation
City	142	4.16	0.61
Country	122	3.99	0.73

Table 4.14 *Independent Samples Test for City Teachers and Country Teachers for Overall Average Risk Ratings.*

	95% Confidence Interval of the difference		t-test for equality of means			
	Lower	Upper	t	df	Sig.	Mean difference
Equal variances assumed	0.009	0.333	2.08	262	0.04	0.17

4.3.6 Research Question 4: Do Socioeconomic Characteristics Affect Perception of Risk?

This question explored socioeconomic status, based on the decile of the school, as a predictor of risk perception.

Hypothesis 5: Teachers at Low Decile Schools Have a Lower Perception of Risk Than Teachers at High Decile School.

A new variable was computed recoding schools from the 10 decile ratings (provided from Tq S2 Q2) into two variables, deciles 1-3 (low decile) and deciles 8-10 (high decile). Tq S1 Q8.1 responses were compared for each activity and analysed for statistical significance using the Mann-Whitney *U* test (see Appendix 4 for statistical analyses, Table A). In no case was the difference between the mean ranks significant ($\underline{z}$ range 0.17 to 0.96, $p > 0.05$).

The acceptability of activities was also analysed by aggregating the 'acceptable' responses over all activities for each group. This was analysed using the Mann-Whitney *U* test (see Appendix 4 for statistical analyses, Table B and Table C). There was no significant difference shown between the median mean rank of each group, $\underline{z} = -1.785$, $p = 0.074$.

When interview data were analysed only one provider interviewee (P10) provided a possible counter view to this:

> "…the higher-decile schools, the parents seem to over exaggerate, whereas the rural schools we get from like [location removed], the parents don't really give a fig it's awesome because the kids are on the farm and they're doing things and they know- I think they've got a better judgment about risk."

While the interviewee refers to decile, a city/rural contrast is also referred to which could account for the observation.

In summary, when the lower three decile grouping for teachers were compared with the higher three deciles group no significant difference was found, either when the risk rating of activities was compared or when acceptability of activities was compared.

Thus, the hypothesis that low decile school teachers have a lower perception of risk than high decile school teachers is not supported by the data.

4.3.7 Research Question 5: Does Residence in the North or South Island of New Zealand Affect Perception of Risk?

This question considered the predictors of risk perception for parents and teachers depending on whether they live in the North or South Island.

Hypothesis 6: The Perception of Risk for North Island Teachers is the Same as South Island Teachers.

The risk rating data from Tq S1 Q8.1 was compared by island and analysed for statistical significance using the Mann-Whitney *U* test (see Appendix 4, Table D for statistical analyses). In no case was the difference between the mean ranks significant ($\underline{z}$ range -1.80 to -0.11, $p > 0.05$). Thus the hypothesis that North Island teachers have the same perception of risk as South Island teachers was supported. From interview data no themes emerged that suggested variability between the South and North Islands specifically in terms of teacher risk perception.

Hypothesis 7: The Perception of Risk for North Island (NI) and South Island (SI) Parents is the Same.

Pq S2 Q5 responses were compared by island. The responses for each activity were compared for each group and analysed for statistical significance using the Mann-Whitney *U* test (see Appendix 4, Table E for statistical analyses). The difference in mean ranks between island groups tested statistically significant for only one activity (skiing, $\underline{z} = -3.13$, $p = 0.002$) which the NI parents perceived higher than SI parents.

The 341 NI responses and 124 SI responses were aggregated for the risk ratings and the means were found to be the same for each island ($M = 3.47$, $SD = 0.66$). From provider interview data no themes emerged that suggested variability between the South and North Islands specifically in terms of parental risk perception. In summary the NI

parents only showed a statistical difference to their SI counterparts in their risk rating of skiing, which they rated higher.

4.3.8 Research Question 6: Does the Occurrence of High Profile Accidents Affect Participation in Outdoor Recreation/Education in Schools?

This question considered the potential risk perception amplifier of media reporting around incidents in the outdoors. Specifically, it explored whether outdoor incidents widely reported in the media have reduced participation in outdoor education in New Zealand primary and intermediate schools. The question was considered from a number of angles:

1. The effect of an increase in perceived risk of harm on parental consent.
2. The effect of an increase in perceived risk of harm on the amount of school outdoor programming.
3. Recent changes in the school's outdoor programming in terms of quantity and proportion conducted on the school's grounds.

The following hypothesis was tested by analysis of open and closed questions in both questionnaires, teacher Likert scale responses, and data gathered from provider interviews.

Hypothesis 8: Outdoor Incidents in Recent Years Such as the Mangatepopo Tragedy Resulted in Reduced Participation in Outdoor Education.

Interview data from the providers is presented after the analysis of questionnaire data. The first questions considered here relate to the influence of the perceived risk of harm on parental consent.

The Effect of Incidents on Child Participation

Two closed questions in the parent questionnaire were designed to help test hypothesis 8 above. Pq S2 Q7 asked whether consent had ever been withheld for a "child to participate in an outdoor education activity because of the risk of harm?" And Pq S2 Q9 asked whether consent had ever been withheld specifically as a result of "outdoor education incidents in recent years (such as the Mangatepopo canyoning tragedy) as

reported in the media?" The frequencies of the responses to these two questions were examined and the results are displayed in Table 15. 'Yes' responses were of a very low order for both questions (eight and four respectively out of 468 respondents). Question Pq S2 Q8 was an open-ended question worded: "If you answered yes to Question 7 please explain the circumstances and your response". The responses to this question helped make sense of the 'yes' responses to question Pq S2 Q7. There were a total of eight responses. One appeared to respond to the question in his/her capacity as a BoT member rather than as a parent, cancelling the field trip. Five parents explained their reasons for not allowing their children to take part in outdoor activities with varied reasons: "insufficient planning & evidence of risk identification", undisclosed issues specific to the child's disability, inability to attend the camp as a parent, "medical reasons" and in two cases the activities were considered too dangerous.

Table 4.15 *Frequency and Percentage of Withheld Consent.*

	Pq S2 Q7- Consent withheld/risk of harm		Pq S2 Q9- Consent withheld/recent incidents in media	
	Count	Percent	Count	Percent
Yes	8	1.5	4	0.7
No	460	86.1	456	85.4
Missing	66	12.4	74	13.9
Total	534	100.0	534	100.0

Two said they would withhold consent if certain circumstances transpired, "if either myself or my husband could not be there", and if travel arrangements were considered "below my requirements". In neither case had consent actually been withheld. The frequency of parents who had actually withheld consent appeared to be five rather than eight once the responses to Pq S2 Q8 were interpreted. Two of these related to medical reasons particular to the child.

In summary, there were varied reasons given by parents for withholding consent. Once Pq S2 Q8 responses were analysed, the number of parents who actually withheld consent was approximately one in 100 respondents. Withheld consents as a result of media-reported incidents were also of a very low order (0.7%).

The Effect of Incidents on School Programming

Tq S1 Q9 asked whether injuries in the school "associated with outdoor education and recreation had resulted in less outdoor education and recreation through reduced programming?" The frequencies of the responses to this question were examined (see Table 16). For the teacher participants 3% responded 'yes' to this question, 90% responded 'no' and 4% responded 'don't know'.

Tq S1 Q10 asked whether "outdoor education incidents in recent years (such as the Mangatepopo canyoning tragedy) have been responsible for reduced outdoor education/recreation programming in your school?" The frequencies of the responses to this question were examined (see Table 16). For the teacher participants 8% responded 'yes' to this question, 85% responded 'no' and 4% responded 'don't know'.

Tq S1 Q11 requested comment if the respondent answered yes to Q10. While there were 22 affirmative responses to Q10, there were 33 response comments from Q11. The additional comments were from respondents that appeared compelled to comment despite there being no reduction to programming at their school. Analysing these comments revealed other changes that had resulted. These included the elimination of extra-curricular outdoor recreation programming, increased caution within the school, increased paperwork associated with outdoor education, greater awareness of the risks, erring more on the side of caution, a lessening of teacher confidence to take camps, increased investment in staff training, and contracting their programmes to outside providers. Those respondents who answered yes to either Q9 or Q10 are a small minority (3% and 4% respectively).

Table 4.16 *Frequency and Percentage of Programme Reduction.*

	Tq S1 Q9 Outdoor injuries have reduced programme?		Pq S2 Q10 Reported incidents in media have reduced programme?	
	Count	Percent	Count	Percent
Yes	8	2.9	22	7.9
No	251	90.0	236	84.6
Don't no	11	3.9	12	4.3
Total	270	96.8	270	96.8
Missing	9	3.2	9	3.2
Total	279	100.0	279	100.0

Most comments from teachers that had experienced a reduction to their outdoor education programme related a general increase in awareness of the risks associated with outdoor education and greater caution exercised. Analysis of the responses revealed three key themes:

1. Increased parental risk aversion (5 participants).
2. Increased risk aversion from teachers (8 participants).
3. Increased risk aversion from the school management (7 participants).

The majority of these responses indicated a degree of increased risk aversion. These responses were directed at themselves, (such as: "As a classroom teacher I'm not prepared to take that risk"), other teachers (for example: "Teachers are no longer prepared to put themselves in situations where accidents could happen"), toward parents (such as: "Community and parents' reluctance to support activities they perceive having increased risks that their children will be faced with"), or toward the school management (such as: "It is too much responsibility for the school to take on and too much paperwork"). Several comments mentioned an increased level of scrutiny. One comment related specifically to river activities being discontinued in the school due to "uncontrollable variables". Three comments related to an increased workload in outdoor education post-Mangatepopo outdoor education being responsible for a reduction, such as:

> "Through these tragedies that have occurred it has made parents and teachers afraid to take a risk and created more paperwork for teachers and principals of the school."

One respondent stated paperwork had increased tenfold. Three comments alluded to the risk of liability for teachers, each expressing a concern that not all incidents can be managed out of programmes. Comments indicative of this concern were: "…that you personally will be made responsible for a possible tragedy when it is out of your hands", and "We are worried about not being able to cover all contingencies – even when we have reasonably skilled staff or have minimised the risk as much as possible". "Teachers do not want to end up in court if all the risks have been accounted for", stated one respondent relating their perception of the vulnerability of teachers to liability.

In summary, these results indicate that outdoor activities have been reduced more commonly as a result of incidents from elsewhere than as a consequence of injuries

resulting from actual events at the school. Data show that outdoor education programming has been reduced in a minority of schools as a result of incidents, and comments suggest a lowered propensity in some parents, schools and boards to accept the risks associated with outdoor education.

Changes in School Programming

Three questions in the teacher survey sought to explore teachers' perception of outdoor recreation and education taking place in their school compared with five-years prior. The premise was that it had reduced in recent times and more was being conducted within the school grounds than in the past.

Tq S1 Q3 asked what percentage of the OE programme was delivered on the school's grounds. The mean percentage was 32% and median percentage was 20%. Tq S1 Q5 asked participants to compare the current programme with what existed five years ago and consider if and how it had changed over that period. A five-point Likert scale ranging from 'Significantly reduced from what it was five years ago' to 'Significantly increased from what it was five years ago' was used to capture teacher perception of change. The frequencies are shown in Table 17. The mean response was 3.2, SD = 0.85. The response categories were collapsed for Q5 and are displayed in Figure 4.3). 'Significantly reduced' and 'reduced' were combined into one category ('reduced') while 'significantly increased' and 'increased' were combined into one category ('increased'). While 14% ±4% of teachers reported a reduction, 36% ±6% reported an increase Contrary to the premise that outdoor education has reduced in schools, results indicate it has increased in more than twice as many schools than it has decreased in over the past five years.

Tq S1 Q7 asked participants to consider the school's extracurricular outdoor recreation opportunities at the school and how these have changed compared with five years ago. The mean response was 3.1, SD = 0.75. The categories either side of the 'no-change' category were collapsed. 13% ±4% of participants responded that outdoor recreational opportunities had reduced. 26% ±6% responded that those opportunities had increased. Overall opportunity is perceived to have increased and this increase is statistically significant, indicated by the error bars (see Figure 4.3)

Table 4.17 *Change in Outdoor Activities Over Prior Five Years.*

	Tq S1 Q5 Change in outdoor education programme		Pq S2 Q7 Change in extra-curricular outdoor recreation	
	Count	Percent	Count	Percent
Significantly reduced	10	3.6	8	2.9
Reduced	29	10.4	28	10.1
The same size	135	48.4	158	57.2
Increased	84	30.1	59	21.4
Significantly increased	15	5.4	8	2.9
Total	273	97.8	261	94.6
Missing	6	2.2	15	5.4
Total	279	100.0	276	100.0
Mean Likert response	3.2		3.1	
Std. deviation	0.85		0.75	

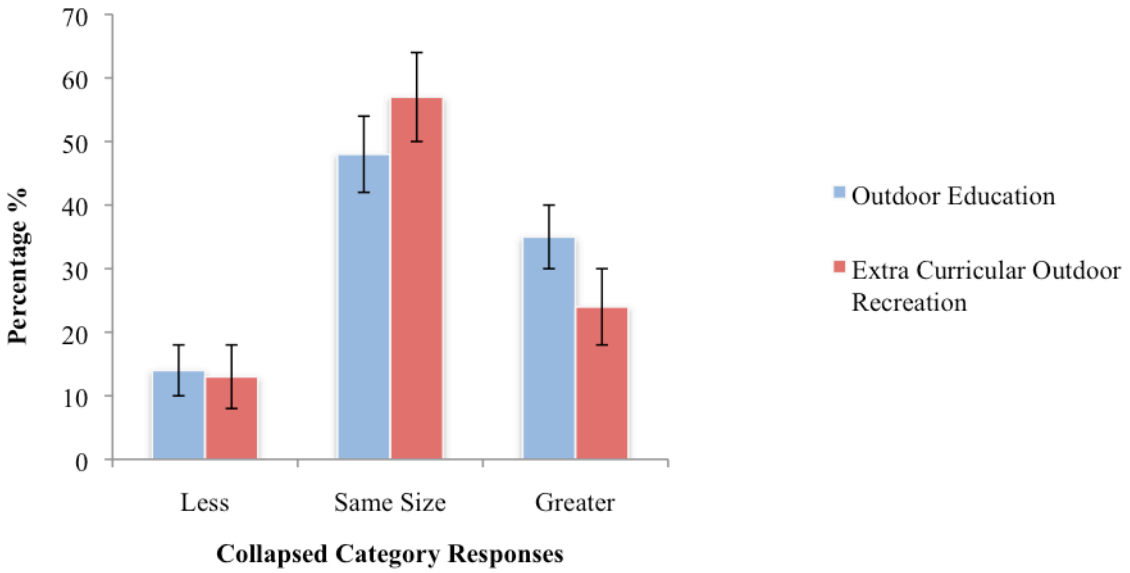

Figure 4.3 *Change in Outdoor Activities Over Prior Five Years, (error bars at 95% CI).*

Change in Proportion of Programme Delivered on School Grounds

Tq S1 Q6 presented a five point Likert scale asking teachers to indicate how the proportion of outdoor activities conducted on school grounds had changed in recent years. The premise was a greater proportion of outdoor recreation and education was taking place within the school grounds and a lesser proportion was taking place off the school grounds. The Likert ranged from 'much greater' to 'much less' and the results are displayed in Table 18. The mean response was 2.9, SD = 0.68. Similarly to Tq S1 Q5 and 7 the categories on either side of the 'the same' category were combined and the collapsed category responses are displayed in Figure 4.4. Compared with five years ago

23% ±6% indicated a greater proportion of outdoor activities was taking place within their school grounds while 12% ±4% indicated a lesser proportion was taking place within their school grounds. The error bars shown in Figure 4.4 indicate a minor but statistically significant net increase in the proportion of outdoor education taking place on the school grounds. It is important to note that the most common response was one indicating no change over the last five years.

Table 4.18 *Change in Proportion of Outdoor Activity on School Grounds.*

	Frequency	Percent
Much greater	7	2.5
Greater	51	18.3
The same	181	64.9
Less	27	9.7
Much less	5	1.8
Total	271	97.1
Missing	8	2.9
Total	279	100.0
Mean Likert response	2.9	
Std. deviation	0.68	

Provider interviews suggested there may be multiple reasons for schools conducting more of their programme within their school's grounds, such as camps based at school every second year to address economic issues, supervision and risk management concerns.

In summary, the data support a minor net increase in the amount delivered in schools in 2009 compared with 2004, and indicate this characteristic of outdoor education programmes is currently stable with about one third of content delivered on the school grounds.

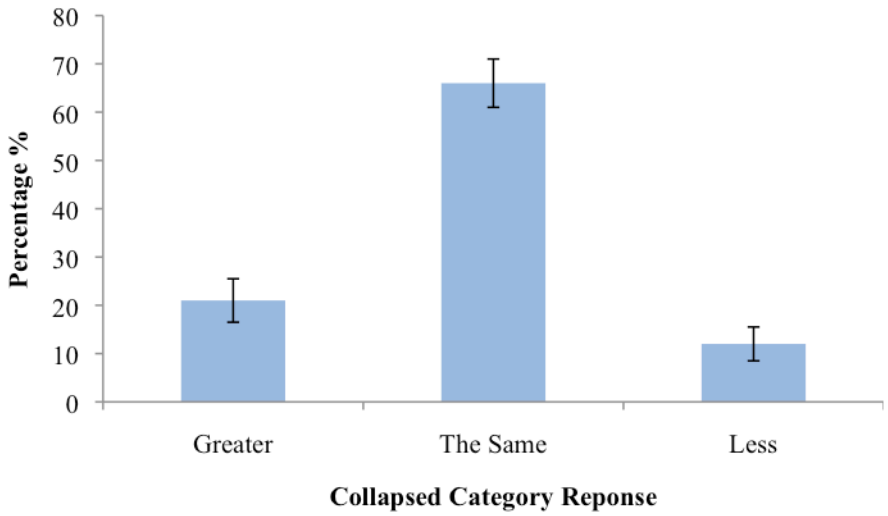

Figure 4.4 *Change in Proportion of Outdoor Activities Conducted on School Grounds.*

Provider Interview Data Analysis

Interview questions to outdoor providers related specifically to Research Question 6. These explored how recent incidents in outdoor recreation and education reported in the media had affected schools' and parent's perceptions of the riskiness of outdoor activities and determined the effect of this change if any, on participation. All providers had observed effects such as greater scrutiny of safety practices and increased concern about the risks in outdoor education. Participants with long histories in the sector were able to associate historic New Zealand outdoor education incidents with effects on parents and on schools. The following incidents, heavily reported in the media, were mentioned and implicated in the observed effects: the 1995 Cave Creek tragedy in which 13 people were killed (Isaac, 1997); the 2000 Kauaeranga Valley double drowning (Mager, 2000); the 2001 Clarence River canoeing double fatality (Maritime New Zealand, 2001); the 2007 Mangatepopo Gorge tragedy (Vass, 2009); the 2009 Manawatu bridge swinging fatality (McDonald, 2010); and a Waipu Cave incident that occurred in 2007 (Campbell, 2007). In each of these cases, participants observed an effect on the willingness of either the schools or parents to send children to camp. Cases were cited of schools cancelling outdoor education camps, requesting more paperwork to ally concerns, asking more questions and generally applying more scrutiny to the activity provider. Sometimes parental concern was cited as the reason why a school was withdrawing its students from activities. P8 reflected on the immediate effect of the Mangatepopo Gorge incident:

> "We first had a whole lot of schools cancel, pretty much immediately, and that was what they gave as their reason, that their parents were now too afraid to send their students on school camps, so they were withdrawing their students"… "Since then a lot of schools will only come for a day rather than come for a couple of days and stay overnight"… "There's definitely a lot more nervousness around the activities, and the safety of the water activities".

Concern around water activities following drowning incidents was strongly supported by provider observation. The following comment from P10 typifies those that remarked on attitudes to water activities:

> "I definitely noticed that parents, after that, and schools were definitely really, really nervous around water activities…".

Incidents of national media interest affected all providers, while incidents of local media interest had a more localised effect. Increasing requirements for documentation of risk planning or paperwork following outdoor education incidents was a strong theme. Most providers considered that fatal incidents, even though they had no involvement in them, resulted in a raised standard of safety in their organisation and in some cases increased their own level of care. Reported responses were varied. The SI providers interviewed reported a less marked reaction. It appears that although nervousness was elevated this did not translate to actual withdrawal from participation to the same extent as the NI.

P8 reported an incident, which involved no injuries or fatalities but which was widely reported in the media, and reported a 'massive' parental response with long repercussions for the centre.

> "For the following year it took a lot of work for the school to be able to build the trust back for their parents".

The activity was dropped from the programme, a dictate from the BoT, and more paperwork was required around the use of external contractors.

Provider statements clearly indicated that incidents affected parents' and teachers' perception of risk, which ultimately affected participation, however cases were isolated and usually transitory. What appeared to have had a greater and more enduring effect was the more subtle influence on programming of increased demands for paperwork and

provider concerns of liability. The following from P9 and P10 respectively were typical of statements made:

> "The majority of schools require RAMS and paperwork now- two months prior or so…", and "…[paperwork] adds a couple of hours on for us each week too".

Overall, results from the quantitative and qualitative parent, teacher and provider data supported Hypothesis 8. There is increased concern regarding the risk of outdoor activities following well-publicised outdoor education incidents and a corresponding reduction in participation in some cases. This concern does not appear to translate into long-term changes in participation in outdoor education activities. Very few parents have withheld consent for their children to participate in outdoor activities. In contrast, a considerable number of schools have reduced programming in response to recent outdoor incidents reported in the media. These findings are supported by open-ended comments from the teacher survey that suggest an increased aversion to the risks associated with outdoor education and recreation activities across parents, teachers and school boards. While there are a number of schools that have reduced the level of outdoor opportunity to students, data support an overall increase in outdoor opportunity for students. More of this is taking place within the school grounds than in the recent past.

4.4 Summary and Conclusion

Data analyses compared parental and teacher risk perception and tolerance of risk, assessed variation between key demographic groups, and analysed how risk perception has influenced participation in outdoor activities in schools. The key findings are:

- Teachers perceived the risks of serious harm to be higher than the parents did for all the activities they were asked to rate the risk for.
- The difference in perception of risk between teachers and parents was more pronounced with outdoor activities than with formal sporting activities.
- The overall acceptability of outdoor activities was higher for parents than teachers.
- Five activities (those perceived as the most risky) had a statistically different rating for unacceptability. More teachers regarded these as unacceptable than parents.
- Parental risk aversion did not emerge as a strong theme from provider interviews. "Gung-ho" parents were more commonly mentioned than those described as over cautious.
- Demographic differences were supported by provider interviews in terms of risk perception, notably urban parents being more risk averse than their country counterparts.
- Statistical analyses showed city parents rated the risks statistically higher in four out of 14 activities compared with country parents. This difference was so small as to not be practically meaningful.
- Statistical analyses showed city teachers rated the risks statistically higher in four out of 14 activities compared with country teachers. This difference was so small as to not be practically meaningful.
- No difference with regard to risk perception between teachers of schools of different deciles was shown.
- No difference with regard to risk perception between North and South Island teachers or parents was shown, other than North Island parents rating the risks of skiing higher than South Island parents.
- The instances of parents withholding consent for their children to participate in outdoor activities was very low.
- Media-reported outdoor education incidents do have an effect on other schools, reducing programming in some cases.
- Providers and teachers observed increased parental risk aversion, increased risk aversion from teachers, and increased risk aversion from the school management

as a consequence of media-reported incidents associated with outdoor education and recreation.

- Following incidents involving water, parental and school concern around water activities was elevated and in some cases schools cancelled water-based outdoor education activities.
- Significant incidents reported in the media are associated with a rise in concern from stakeholders, more scrutiny and demands for more comprehensive documentation of risk management procedures.
- The concerns associated with media-reported incidents do not appear to have translated to long-term reductions in demand for outdoor education services, although short-term effects were reported.
- Approximately one third of outdoor education programme content takes place on school grounds. This characteristic appears to be largely the same as five years ago, though there is a slight shift toward using the school grounds as a venue.

In conclusion, there was strong empirical support for parents and teachers having differing perceptions of the risk in outdoor activities. This difference in risk perception translated to a difference in which activities were regarded as acceptable for these groups. The variance between parents and teachers of differing school deciles and geographical situation was shown to be minimal in terms of risk perception. Although data analyses supported outdoor incidents in recent years resulting in reduced participation in outdoor education, the overwhelming majority of parents and schools did not respond to incidents by reducing participation opportunities for children. Other effects occurred such as increased concern about the risks associated with outdoor education and recreation activities across parents, teachers and school boards. Collectively teacher's perceptions suggested that outdoor education opportunities for students have increased slightly over the last five years in New Zealand with a slight shift toward providing these on school grounds.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter provides a detailed analysis of key research findings presented in Chapter 4 with reference to each research question. The results are discussed in light of previous research studies. Each question is discussed as presented in the results chapter. The chapter concludes with a summary of the key discussion points from the chapter.

5.2 Research Question 1: Do Parents' and Teachers' Perceptions of Risk Differ?

The first research question explored parent and teacher risk perception and hypothesised that parents perceive risks to be greater than teachers. Statistical analysis of mean ranks showed that teachers rated risks higher than parents for every one of the 14 activities presented and this difference between the groups was significant. When the risk rating responses were combined for all participants in each group and averaged between groups the difference was also significant. The teachers' average overall Likert scale risk rating was 'moderate' while the parents' tended toward 'low'. This finding is interesting in that popular media have tended to report that parents are becoming more risk averse and over-protective of their children (e.g., see articles on "Cottonwool kids" (Fenech, 2010; Fox & Gadd, 2009; Wong, 2005)). The literature also suggested that the growth in the number of "paranoid parents" would be reflected in an elevated perception of risk. Data from this study contradict such a contention and provides evidence that parents of pre-teen children have realistic, as opposed to elevated, perceptions of risk associated with outdoor education activities. Parental perception of risk is actually lower than that of schoolteachers. Teachers likely feel a duty of care and responsibility when supervising their students' outdoor education activities and this is reflected in their higher perception of risk. The actual risk of harm associated with outdoor education activities at schools is low. A number of studies in New Zealand and abroad have concluded that outdoor education has no more risk that risks encountered in daily life (Cessford, 2010; Davidson, 2007; Jillings, et al., 1995; Priest & Gass, 1997). Provider interview statements supported the notion that parents have high trust in teachers of EOTC. This could account for a low perception of the risk of serious harm. This trust also appears well placed in light of the most recent National Incident Database Report (Cessford, 2010) which found schools were 35% of the organisations on the database but reported only 20% of the incidents.

Slovic, Fischhoff, and Lichtenstein (2000) remind us that lay people seldom have the knowledge to form an accurate perception of risk and that lay and expert assessments of risk may not agree. The implication is that experts (teachers in this case) have more accurate perception of risk. Several writers have highlighted the risk discourse prevalent in outdoor education (Chisholm & Shaw, 2004; Jones, 2004/2005; Zink, 2003). Slovic (2000) contended that there are institutional, socio-political and cultural determinants of risk perception. Teachers exist in the socio-political and institutionalised education sector where risk analysis, liability, and risk management often dominate the outdoor

education discourse. The prevalent discourse on risk and liability could explain elevated perception of the risk in teachers.

There were notable differences between views on risks associated with outdoor education/recreation activities when compared with more formalised and well-known sporting activities. The difference in risk perception between the two groups was almost twice as large for the outdoor activities as it was for the two sporting activities, rugby and netball. A range of other research has shown that familiarity tends to induce lower levels of risk perception (Helms, 1984; Slovic, Kunreuther, et al., 2000; The Royal Society, 1982) which suggests teachers of EOTC would perceive risks lower than parents for the activities they teach, but this was not the case in this study. Perhaps Tversky and Kahneman's (1973) 'availability bias' phenomenon, whereby easily recalled highly memorable, newsworthy, but unusual events, cause individuals to over-perceive the risks, accounts for the difference. The 2007 Mangatepopo tragedy associated with outdoor education, would be expected to amplify the perception of risk in outdoor education for both groups but perhaps teachers, being closer to the activities and bearing more direct responsibility for the safety of the children participating feel the risks more acutely. The provider interviews conducted conveyed a sense that their personal awareness of the potential for things to go wrong had been raised and in some cases had influenced their practice markedly and increased safety concern in all levels of EOTC management in schools was expressed by teachers.

The conclusion that can be drawn from this study is that teachers have a higher perception of the risk of serious harm involved in outdoor activities than parents do. This result was surprising, but a strong finding in the study. Some suggestions have been made that may account for some of the disparity, however there are many factors that affect risk perception simultaneously. Indeed data showed similar "contradiction, ambivalence and complexity" to Lupton and Tullock's study (2002, p. 332).

5.3 Research Question 2: Do Parents Have a Higher Acceptance of Risk Than Teachers?

Question 2 sought to determine whether any differences in risk perception translated to a difference in which outdoor activities were deemed acceptable in primary and intermediate schools. Data analysis revealed a significant difference between groups for the activities that were rated by both groups as being most risky: *Trips to remote places*,

canoeing/kayaking on a river, *rock climbing or abseiling on a natural cliff-face*, *cooking with an open fire, and skiing*. In each case a greater number of teachers than parents regarded these activities as unacceptable.

With the exception of *canoeing and kayaking on a river* the vast majority of both parents and teachers considered all the activities to be acceptable in terms of risk. These perceptions are accurate as the incidence of serious harm is very low in outdoor activities under supervision (Cessford, 2010; Davidson, 2006). Data supported the contention that there is a high level of parent trust in the management of outdoor programmes involving their children. The strong message for outdoor education professionals is that parents do not have an elevated perception of the risks involved in outdoor activities and they have a high degree of acceptance of and support for their children's participation in such activities.

It was expected that risk perception would predict acceptability, which the results showed. The teachers had a higher perception of risks in outdoor activities and consequently a greater percentage of teachers deemed activities unacceptable than parents. Parental perspectives have seldom been sought in New Zealand studies of outdoor education. The only study to focus on parent's attitudes to risk was Bayley's (1973) study, which focused exclusively on the Wellington region (Lynch, Massam, & Peebles, 1994).

While there was a statistical difference in these activities it should be noted that the difference between responses for the five activities was small. There was largely agreement between the groups with activities that increased 'unacceptable' responses in the teacher group also increasing them in the parent group. Perhaps of greater importance is the variation within groups, especially with kayaking on a river, which polarised both groups. For this age range *kayaking or canoeing on a river* was considered by just over half of teachers and just under half of parents as being too risky. An age filter attached to the question may have reduced the variability in response to this question. The strong correlation between 'unacceptable' responses and 'not sure' responses suggested that participants had increasing difficulty answering the question as the riskiness of the activities increased. There was perhaps reluctance by those who answered 'not sure' to designate the activity as 'unacceptable', or perhaps acceptance of the activity came with conditions they weren't able to express (such as an age limit).

The strong message for outdoor education professionals should be that parents do not have an elevated perception of risks involved in outdoor activities and parents have a healthy degree of acceptance of activities with inherent risk.

5.4 Research Question 3: Does Residing in an Urban or Rural Area Affect Perception of Risk?

Research Questions 3, 4 and 5 selected a range of geographical and socioeconomic characteristics that the literature or anecdote suggested could be predictive of risk perception These were location of the school (rural or urban setting), school decile rating, and between island (North and South) effects.

5.4.1 City Compared with Country Parents

The first hypothesis for Question 3 postulated that city parents have a higher perception of the risk than country parents. Statistical testing demonstrated a significant difference for four activities: *Day hike, residential camp, overnight tenting and canoeing/kayaking in sheltered waters,* were rated higher by the city group. Although this study showed the magnitude of the difference in risk rating between the survey groups was very small, the providers that made comment were quite explicit supporting this difference. Country parents had lower levels of concern about risks associated with outdoor activities. This was expected because the literature points to rural parents being more relaxed with regard to their children in the outdoors than urban parents. Parents in small suburban settlements in New Zealand have been shown to have more relaxed attitudes toward children's home range (the area parents are comfortable for their children to roam unsupervised) than those close to city centres (Freeman, et al., 2007), and research on Canadian parents showed relaxed attitudes among rural parents with regard to their children's whereabouts (Bonner, 1997). The factors that result in lower rural perception of risk are likely to be complex. The likely more frequent associations with natural outdoor situations of rural parents and their children, would according to Slovic, Kunreuther, et al.'s (2000) familiarity thesis, result in lowered risk perception.

The quantitative analysis did not reflect the magnitude of difference between the groups expressed in provider interviews and this may be a result of the inexactness of grouping parent's place of residence based on the school their child attends. For most activities risks were rated higher by city parents. Clearer delineation by place of residence may

have yielded more activities with a significant difference, as there appears no pattern to suggest why those particular activities were different between the groups.

5.4.2 City Compared with Country School Teachers

The second hypothesis postulated for Question 3 was city school teachers have a higher perception of risk than country school teachers. All the activities were rated higher by the city teachers but similarly to the parents, significance was shown for only four activities: *Residential camping*, *overnight trips*, *canoeing/kayaking in a pool*, and *cooking on an open fire.* As with the city and country parents the magnitude of the difference in risk rating between these groups was very small. Aggregated responses showed a significant difference between the groups. A difference was expected in the direction of this finding, with greater country exposure to camping situations anticipated, as anticipated from the familiarity thesis (Slovic, Kunreuther, et al., 2000). The magnitude of the difference measured was so small as to not be practically meaningful however and perhaps is reflective of the city and country samples not being exclusively made up of teachers having always resided in those settings.

5.5 Research Question 4: Do Socioeconomic Characteristics Affect Perception of Risk?

Research Question 4 hypothesised that teachers at low-decile schools have a lower perception of risk than teachers at high-decile schools. Comparing deciles 1-3 with deciles 8-10 demonstrated no significant difference between these groups. Acceptability of the activities was also explored for these decile groupings and there was no significant difference shown either for the individual activities or for aggregated responses between these groups. This hypothesis was not supported by either the self-reply questionnaire data or the interview data.

Haddock (2007) showed half the number of outdoor pursuits are conducted in decile one and two schools compared with other schools. The scope of her study did not show reasons for this difference. This present study shows that risk perception and aversion to risk are highly unlikely to be factors accounting for differences in programme content and quantity shown to exist between lower and higher-decile schools (Haddock, 2007; Haddock, et al., 2009). No studies were found that showed support or otherwise for socioeconomic status as a predictor of risk perception.

5.6 Research Question 5: Does Residence in the North or South Island of New Zealand Affect Perception of Risk?

Research Question 5 hypotheses tested whether there was a variance in risk perception between islands for teachers or for parents. Analysis of data from the questionnaires showed no difference between North and South Island teachers. For parents the only difference in the rating of risk was for skiing. North Island parents rated the risk higher than their South Island counterparts. Because participation in snow sports is considerably greater in the South Island compared with the North Island (Milne, 2005) this likely accounts for the differing perceptions. Familiarity has been shown to reduce perception of risk involved in mountain sport activities (Helms, 1984). The interview data did not yield comments about this potential difference, as expected as there were no cases of outdoor centres serving both islands.

5.7 Research Question 6: Does the Occurrence of High Profile Incidents Affect Participation in Outdoor Recreation/Education in Schools?

The literature suggests that the effect of an outdoor education or adventure tourism tragedy increases the profile, concern and perception of risks associated with outdoor education. The hypothesis was formed that outdoor incidents in recent years such as the Mangatepopo tragedy resulted in reduced participation in outdoor education.

The media report disproportionately on some death events, while others receive light coverage (Fischhoff, Slovic, Lichtenstein, Read, & Combs, 1978). This trend is also evident in the reporting of outdoor recreation related to fatalities and injuries. While outdoor professionals use specifically designed risk assessment tools to assess hazards, the public typically uses a more intuitive risk judgement process and "for these people experience with hazards typically comes from the news media" (Slovic, 1987, p. 280). The escalation in fear of liability documented in Haddock and Sword (2004) in the wake of the Le Race 2000 incident resulted in the "APPA [Auckland Primary Principals' Association] threatening to cease all EOTC activities in members' schools unless the Ministry of Education indemnified principals from liability" (p. 3). This provides additional evidence that the impact of outdoor accidents, even when they are not school accidents, is to increase the 'risk noise' in the education sector social and hence increase the perceived risk, supporting Kasperson, Kasperson, Pidgeon, & Slovic's (2003) findings on the social amplification of risk.

The hypothesis tested in this study was that "outdoor incidents in recent years, such as the Mangatepopo tragedy, resulted in reduced participation in outdoor education". This hypothesis was answered by quantitative analysis of a number of closed questions and analysis of open questions in the questionnaires, using Likert scales in the questionnaires, and qualitative analysis of provider interview responses. The hypothesis was tested in three contexts:

1. The effect of an increase in perceived risk of harm on parental consent.
2. The effect of an increase in perceived risk of harm on the amount of school outdoor programming.
3. Recent changes in school outdoor programming in terms of quantity and proportion conducted on the school grounds.

5.7.1 Effect on Parental Consent

While there was a very small minority of responses that claimed consent had been withheld for a child as a result of widely reported incidents in the media or as a result of incidents at the school itself, the vast majority of parent responses indicated it did not result in withheld consent. So while the 'risk noise' associated with outdoor education and adventure tourism tragedies has risen sharply as a result of the Mangatepopo tragedy in 2007 the immediate effect on outdoor education appears to be minimal.

The result is important for outdoor education. It suggests media articles on parental over protection (Kenworthy, 2010; Wong, 2005) are highlighting isolated, dramatic incidents and the "culture of fear" (Furedi, 2006) among parents may be much less pervasive than claimed. If there is an escalation in fears among parents (even if the media is correct that today's parents "wrap their children in cotton wool"), data suggests they do not prevent them from engaging in outdoor education/recreation by withholding their consent.

The results support the contention that parents are able to filter critical incident reporting in the media and view outdoor activities for their children through a very rational lens. This contrasts with the popular media reporting of increasing parental risk aversion and the growth of a 'risk-averse society'. Many responses to the question, which asked "If you value outdoor education/recreation experiences what do you consider to be the key benefit for your child?" were effusive in praising outdoor

education as a valued school subject. The vast majority of parents it appears, are not prone to immediate, adverse reactions with regard to outdoor activities, but instead appear to have a measured response to outdoor incidents.

5.7.2 Effect on Programming in Schools

Similarly to parents the vast majority of teachers indicated that their school had not reduced programming, either in response to incidents at the school or incidents reported in the media. While any reduction in programming suggests an eroding of outdoor education it is essential to keep in mind that while there were 30 'yes' responses across both questions, concerning programme reduction in response to incidents, there were 487 'no' responses. Of note is that respondents that indicated their school had reduced programming in response to incidents showed that the greater part of this reduction was not in response to incidents they had experienced at their school (8%), but in response to incidents that were reported widely in the media (22%). This shows support for the contention that risk amplification occurs via the media and perhaps society increasingly sees itself as 'at risk' (Furedi, 2002). The results show this has not translated markedly to reducing programmes. This only occurred in a small minority cases.

These findings need to be considered in the context of the higher levels of perceived risk and concern about risk reported by teachers and schools. School management (Boards of Trustees, principals, and EOTC coordinators) base their perception of the risk on not only on the actual risk of harm to students, but also on the risk of associated liability. Haddock and Sword's (2004) study into liability concerns in EOTC indicated these were issues for EOTC teachers and principals. Schools are organisations answerable to parents, teachers, government and society. They are more vulnerable to societal pressure around risk and safety than an individual and it is, therefore, understandable that in some cases this translated to a greater aversion to the risk associated with some activities and amendments have been made to programming as a consequence.

The findings strongly support the effect of the risk discourse prevalent in the outdoor education sector described by several commentators such as Haddock and Sword (2004) and Chisholm and Shaw (2004). Elevated risk aversion in teachers, parents and school managers and a marked increase in demand for documentation were noted by teachers in the wake of the 2007 Mangatepopo tragedy. While this event might have elevated

perceptions of risk in outdoor education, it has not translated into lowered participation to any significant degree. Providers expressed that the immediate cases of reductions in school bookings were isolated, and though anxiety increased in parents, providers stated this spike in anxiety was short lived.

Data relating to programme change over the last five years as perceived by teachers cannot be ascribed any causation but it does provide indicators of interest to this study. While most teachers indicated that there was no change in programme size over that period in their school, some teachers perceived an increase, some perceived a decrease and the balance of these was a 22% increase overall. In recessional times and in the wake of the biggest outdoor education tragedy in New Zealand schooling history this is a surprising trend for outdoor education. In light of Haddock's (2007) Primary schools report on EOTC, which emphasised the value of such experiences to student learning, the 14% of respondents that perceived their programme had decreased may be concerning and further research would be useful to determine why this was.

5.7.3 Settings for Outdoor Education Activities

With regard to where outdoor activities occur, the majority of teachers perceived no difference in the proportion that took place on the school grounds, compared with five years ago. There was a minor net shift toward a greater proportion of activities occurring within schools' ground.

The findings provide empirical support to Jones's (2004/2005) contention that more EOTC was being conducted within the school grounds. The net increase is minimal. But suggests this trend has continued. From interviews Jones concluded more outdoor education was being conducted within the school grounds in response to liability concerns. Zink and Boyes (2006) in their study on the nature and scope of outdoor education in New Zealand found "…respondents said they most frequently took outdoor learning experiences of less than two hours duration, which suggests a lot of outdoor learning experiences occurred at school" (p. 16). The study found the mean percentage of outdoor education conducted on school grounds was 30%. The collective teacher perception suggests that this is slightly more than five years ago. The reasons for this are undetermined.

5.8 Other Discussion

Perception Versus Reality

How accurate is the perception of risk of teachers and parents? Measures of actual risk are either loosely defined (such as using Likert scale descriptors) or measured as incident rate associated with activities. If incidents have been recorded as incidents per 1000 participant days, then a useful comparison between activities exists. From available New Zealand data it is not possible to reach a definitive conclusion about relative activity risk. The Austalian National Accident and Incident Report Form Database (NAIRFD) reported that a young person participating in netball is twice as likely to be injured playing netball as participating in snow sports (Dickson, Chapman, & Hurrell, 2000). The participants in this study rated the risk of netball as low and skiing as moderate, an apparent reversal of the real risk, however the NAIRFD data is based on all harm injuries, not serious harm, highlighting the dangers of trying to compare findings with other research. More research is required to draw definitive conclusions here.

Risk and Water-Based Activities

Clearly articulated in the provider interview data was a view that risk aversion had resulted in less demand for particular activities such as those involving water. In one case the centre itself responded to an incident in a cave by disallowing any future student interaction with any cave environment. These cases show, at least in some schools and centres, a changing of programme content away from using environments with high perceived risks.

Water is a factor in many outdoor education fatalities. Drowning is the cause of 36% of deaths in outdoor education fatalities in Australia (Brookes, 2002) and drowning is the third leading cause of unintentional injury death in New Zealand (Water Safety NZ, 2010). Data show that risk perception around water was elevated in a rational way with paddle-sports in a pool perceived as less risky than on shelter waters, which were perceived as less risky than those on moving water. The river activity was regarded as unacceptably risky for outdoor education by approximately half of the participants (both parents and teachers). Provider statements reported heightened anxiety by parents and schools around water activities emerging as a theme from interviews: Anxiety to the point where some schools have eliminated water activities from their programmes.

Awareness of the risks around water, water confidence and water-sport capability are potential beneficial outcomes of outdoor education programmes. Water Safety New Zealand (WSNZ) state that "drownings can be reduced through a mix of educational initiatives – which provide for improved public awareness of the environment and its potential dangers, skill improvement, and technological advances" (Water safety NZ, 2011). Outdoor education provides schools with the means to present students with authentic opportunities to develop risk awareness around water. New Zealand has a plethora of rivers and considerable coastline for its size. The long-term benefits of water awareness and respect developed at a young age are high to a society such as New Zealand's that lives close to water. Anne Tolley, Minister of Education at the time the Ministry's EOTC guidelines were released stated in the forward that "Students need to learn in a variety of contexts in order to gain the knowledge, skills, attitudes, and values required to enjoy a healthy lifestyle; [and] take responsibility for their own safety" (Ministry of Education, 2009a). Empowering people to be safe in the outdoors is a fundamental outcome of outdoor education and WSNZ has a range of education programmes designed for schools based on activities in a specific aquatic area like Sail Safe, RiverSafe, and BeachEd. Fears about incident potential could reduce education that might reduce potential incidents. Zink and Boyes (2006) found the majority of teachers agreed outdoor education practice had become preoccupied with safety, and paperwork and risk involved in practice were relevant barriers to outdoor education programmes. This study has also shown empirically that risk aversion is a barrier to programming water activities in some schools which could be detrimental to water safety initiatives.

5.9 Summary

Parents do not have an elevated perception of the risks involved in outdoor activities despite common reporting in the popular media and in spite of the risk society thesis. Nor have they responded adversely to media-reported incidents except in isolated cases. Parents recognise significant benefits in outdoor education for their child, and have a healthy degree of acceptance of activities that have inherent risk. The vast majority of teachers too, have not reduced programming in response to outdoor education incidents widely reported in the media.

The elevated risk perception of teachers compared with parents is likely due to their duty of care and the discourse around risk prevalent in outdoor education. Aversion to

water activities in authentic outdoor environments is evident in some schools. This aversion is linked to elevated concerns around water following the 2007 Mangatepopo Gorge tragedy and could pose a barrier to effective water safety programming for young people. The observed elevation in safety concern across all stakeholders in the outdoor education sector contributes further to the prevalent risk discourse in outdoor education identified by other studies.

Within-group variation due to the characteristics of socioeconomic status, island of residence, or whether participants lived in the city or country was largely inconsequential. One notable difference was the lower perceived risk of skiing by South Island parents compared with their North Island counterparts, likely due to the increased familiarity with snow and snow sports of South Islanders.

CHAPTER 6: CONCLUSION

6.1 Introduction

This chapter presents, firstly a summary of the key findings of the study, followed by a consideration of the pedagogical implications for teachers and providers and the implications for school managers and education policy-makers. The limitations of the study are disclosed and critiqued. Recommendations for further research are made based on the findings of this study. The chapter concludes with a summary statement about the findings.

6.2 Summary of Key Findings

This study was the first to determine whether the risk society thesis translated into effects on outdoor education in New Zealand schools. The primary objective of this study was to explore the influence of teacher and parent risk perceptions on participation in outdoor education and recreation activities in schools. This study's focus was specific to pre-teen education in New Zealand. A secondary aim of the study was to examine how risk perception varied across and within teacher and parent groups.

The study used mixed methods to draw data from three groups with greatest influence over participation in outdoor education and recreation activities, and how and where such activities are conducted. Online questionnaires gathered data from EOTC coordinators and parents. Qualitative data were derived from semi-structured interviews with key informants in outdoor provider organisations.

Quantitative analysis revealed a difference in the perception of the risk of serious harm in outdoor activities between the teacher and parent groups. Teachers consistently rated the risk higher than parents did. For the higher risk activities this translated to a difference in the acceptability of the activities with parents being more likely to deem these activities as acceptable for their child. Both these findings were contrary to what was expected after reviewing the literature. The results strongly suggest that the vast majority of parents do not have an elevated perception of the risks involved in outdoor activities. Parents also recognise the benefits in outdoor education for their child and have a healthy degree of acceptance of activities that have inherent risk.

From analysis of the questionnaires limited differences were found within parent and teacher groups when compared between city and country samples, between North and South Islands, and between high and low school deciles; from interview data obtained from outdoor providers comments suggested there was a strong perception that differences existed between city and country perceptions of risk. The findings suggest this perceived difference between country and city parents does not reflect reality nationally. This finding needs to be considered in light of the limitations of the data; designation as a city or country parent was based on the designation of their child's school not on their place of residence.

Outdoor education incidents reported in the media were found to have short and long-term effects on participation. Though data indicate parental anxiety increased after such incidents data also show very few parents respond by preventing their children from participating in outdoor education activities. Schools were shown to be more likely to reduce participation by programme reduction and data show a number of schools have responded to incidents in this way. For the schools at least, the results support the hypothesis that media reporting does impact on participation: in the short-term reducing quantity and in the long-term effecting content.

There is a small trend toward conducting more activities within the school grounds and away from utilising natural outdoor spaces. The reasons for this trend are unclear. This finding supports those of previous studies, which suggests that, although small it is a long-term trend. An aversion to water activities in some schools was a strong finding from provider interview data and this was strongly linked to the Mangatepopo gorging incident in 2007.

Overall, the findings show the effect of the multiple fatalities that occurred in the Mangatepopo Gorge incident has not transferred significantly into reduced outdoor education opportunities for schoolchildren. Teacher perceptions suggest that more opportunity exists in terms of programming. What has changed is: a heightened anxiety around outdoor education, further centring risk as the prevalent discourse in outdoor education; a greater emphasis from school managers on documentation required of teachers, which has been identified in previous studies as a barrier to outdoor education; and changes in the content of programmes, particularly around water activities.

6.3 Implications

The results of the present study have challenged the notion of the paranoid parent in New Zealand, certainly as a widely prevalent characteristic. Parents are more accepting of outdoor activities than is presumed and do not have elevated perceptions of risk. Certainly not when compared with teacher risk perceptions which in this study were somewhat higher than the parents. If schools are making decisions to modify programmes on the basis of parental risk aversion, perhaps this reasoning should be re-evaluated if it is based on conjecture, the comments of one or two parents, or in other ways not well founded.

Educational professionals will be reassured that parents appear to respond to publicised tragedy in the outdoors with a good deal of common sense. There is no doubt that there are isolated cases of parents and, sometimes, whole schools cancelling outdoor education trips for children. Isolated instances of parental overprotection are seized on by the media and presented as documented proof of "wrapping children in cotton wool", "paranoid parenting", and other phenomena that suggest parents or teachers are risk averse to an unhealthy degree. This study shows that the vast majority of parents and teachers do not respond in this way.

Parents of pre-teen children in New Zealand have a healthy respect for the outdoors and are highly supportive of its inclusion as an integral part of their children's school curriculum. They have an awareness of the risks, but accept that risk is an inherent part of outdoor recreation. While they do expect a duty of care from teachers, schools and outdoor education providers, they do not perceive outdoor education programmes as unacceptably risky. They are, however, more cautious about water-based activities.

Teachers, on the other hand, have higher levels of perceived risk. This is likely related to the prevalent discourse in risk and safety in education, and their professional roles and responsibilities for the safety of the children in their school when undertaking outdoor activities. It is important, however, that school managers do not over-react to a vocal minority of parents who are strongly averse or a dramatic and unusual accident or fatality reported in the media.

The majority response of teachers regarding programme size for outdoor education showed an increase in recent times, and no obvious shift away from delivering programmes in natural settings. One of the potential values of outdoor education is raising the awareness of risks associated with various outdoor environments for young people and teaching them how to avoid or manage those risks. Natural environmental hazards are frequently encountered as a part of growing up and living in New Zealand, such as rivers, floods, rips, waves, cliffs, dangerous wildlife, cold, snow, etc. Programs that raise awareness of, knowledge about and provide opportunities to engage with natural environments have the potential to reduce tragedies in these places resulting from ignorance. Reported avoidance of natural water environments by some schools in the wake of drowning incidents will not help young people to identify hazards and

know how to avoid them. This study draws attention to an issue that may be concerning for professionals that advocate for water safety education.

Educational professionals may also be concerned about the increase in anxiety and risk aversion reported for parents, teachers, and school managers that have resulted from media reported outdoor education tragedies. One result of this is the increase in documentation required to organise outdoor education events. Excessive compliance costs are a barrier and may erode enthusiasm for the provision of outdoor education opportunities in the future. What can be overshadowed as a result of a single outdoor education tragedy are the thousands of positive experiences than take place through outdoor education events in New Zealand; seldom are these positive experiences reported in the media.

6.4 Limitations of the Study

The low response rate of this study for the teachers, while comparable to other national surveys in outdoor education leads to circumspection about drawing definitive conclusions from data for this cohort.

Although available information about BoT members showed no reason why this source of parents would not be generally representative it was skewed toward wealthier and well-educated parents responding with regard to children in the upper end of the age range. The latter characteristic may be accounted for by the fact that the focus of the study, outdoor education, is largely associated with older pre-secondary schoolchildren and so more relevant to parents of children of this age range. Both sample groups are somewhat skewed toward higher-decile schools. All schools and all BoTs were expected to have access to computer technology, however the skew toward higher-decile schools may reflect better resourcing and/or more familiarity with the use of computer technology. Though both samples are largely representative of the national profile of New Zealand primary schools the parent sample exhibits some skewing as above and hence the responses may be impacted.

A random representative sampling model was not used in this study and self-selection has possibly biased results. People with strong views either for or against outdoor education in schools are more likely to participate in the study to express those views. This is a limitation of using online questionnaires (Dillman, 2000).

A separate sampling regime was conducted for private schools four weeks after the survey had been closed to others schools. This was not ideal and subsequently comparisons were not made between private and state schools, which is perhaps an area for future investigation.

Some questions were not presented with a 'don't know' option. While in almost all cases this was a justified question structure, in questions 6 and 7 of the teacher questionnaire, section 1, it may have presented a forced response where teachers may have justifiably not have had the information requested. This presents a limitation for the analysis of these two questions (about changes to the outdoor education and recreation opportunities in their school over the previous five-year period). No change was the probable default response for teachers who didn't know, but forcing a response may have promoted inaccurate guessing and the questions lack a potential reliability measure where question understanding may have been deduced from the response rate.

In one instance there was a disparity in the findings between the quantitative and qualitative aspects of the study and the mixed methods methodology leading to inconclusive findings. Provider support for a city/country difference in perception of risk was high, but quantitative analysis showed a negligible difference between these groups. More clearly determining the residential zone of the city and country groups rather than basing this on the school's zoning would have strengthened any differences between these groups. That is, not only urban families send their children to city schools and not only rural children attend country schools.

A major limiting factor in this study was time and resourcing. A greater timeframe would have enabled stronger procedures to be established and more robust validity measures. Although the test instrument developed for assessing perception of risk has face validity, it has not been independently assessed to give it internal validity. Such an assessment would confer greater confidence to the results. The tests designed for this study (testing risk perception and acceptability) may prove useful in future studies.

6.5 Further Research

This study generalises data associated with very complex phenomena. Risk assessment is influenced by a great many factors. Future research examining specific cases of

withheld consent and cases where schools have decided to reduce programmes in response to risk, real or perceived would illuminate aspects of this complexity.

A number of schools showed a decline in outdoor education programming over the last five years (14%), and a study exploring the reason for these schools reducing outdoor education would help determine the factors responsible, which are likely to be complex.

Identifying cultural differences in attitude toward risk and its management may assist a number of causes, such as the understanding of disparities in mortality statistics between ethnicities, and assisting educators to respond appropriately to cultural differences in confronting risk activities.

A study determining at what child age parents consider various activities are appropriate for children to engage with under various forms of supervision would further the understanding of decision-making and participation.

The conflicting positions adopted by various commentators encountered when reviewing the literature with regard to the value of risk in outdoor education suggests the need for more research in this area. Follow-up studies with robust design and strategies to minimise bias will help to inform practitioners of if, when, and how risk ought to be incorporated into pedagogy.

A formal content analysis of the media's portrayal of outdoor recreation related events in New Zealand would provide empirical data on reporting bias relating to accidents. This was inferred from studies conducted abroad in the absence of studies focusing specifically on New Zealand.

6.6 Conclusion

This was the first study to explore the link between risk perception and participation in outdoor education in New Zealand. Data provided empirical support for a number of findings. The higher perception of risks in outdoor education of teachers compared with parents is likely related to their professional responsibility for the safety of children in their school when they are undertaking outdoor education activities, and the discourse around safety and liability prevalent in outdoor education. The collective teacher perception showed in broad terms that little change has occurred in recent years in terms

of the amount of outdoor education in schools or the amount conducted in natural environments. This is significant in light of the Mangatepopo gorge incident that occurred in 2007. This event, one of New Zealand's worst outdoor education tragedies, increased perceptions of risk in schools and throughout the industry that provides outdoor education to schools. This increase in risk perception and the associated increase in safety scrutiny by school managers did not translate notably to reduced outdoor education and recreation opportunities for children in schools. A finding that warrants further investigation is the apparent aversion by some schools to aquatic environments and associated activities.

The parental response to publicised outdoor education and recreation tragedies in recent times is contrary to fears anecdotally reported. The characteristics that have endured are trust in educators, and a strong belief in the value of outdoor education rather than a pervasive aversion to the risks in outdoor education. Parents have withdrawn consent only in rare and isolated incidents. This study showed that the large majority of parents and schools were able to filter media constructions of critical outdoor incidents and did not respond adversely.

REFERENCES

Alhakami, A. S., & Slovic, P. (1994). A psychological study of the inverse relationship between perceived risk and perceived benefit. *Risk Analysis, 14*(6), 1085-1096.

Anastasi, A., & Urbina, S. (1997). *Psychological testing* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Atherton, J. M. (2007). Philosophy outdoors: First person physical. In M. McNamee (Ed.), *Philosophy, risk and adventure sports*. New York, NY: Routledge.

AUT University. (2010). *Ethics knowledge base*. Retrieved 12 January 2010, from http://www.aut.ac.nz/research/research-ethics/ethics

Bartley, A. (1999). Survey research: mail surveys. In C. Davidson & M. Tolich (Eds.), *Social science research in New Zealand*. Auckland, New Zealand: Pearson Education New Zealand Ltd.

Basit, T. N. (2010). *Constructing research in educational contexts*. London, England: Continuum International Publishing Group.

Bayley, L. (1973). The development of outdoor education in the Wellington Education Board. *New Zealand Journal of Health, Physical Education and Recreation, 6*(3), 40-43.

Beck, U. (1992). *Risk society: Towards a new modernity*. London, England: Sage.

Beedie, P., & Bourne, G. (2005). Media constructions of risk: A case study of the Stainforth Beck incident. *Journal of Risk Research, 8*(4), 331-339.

Bell, J. (2005). *Doing your research project. A guide for first-time researchers in education, health and social sciences* (4th ed.). Birkshire, England: Open University Press.

Bennet, P., & Calman, K. (1999). *Risk communication and public health*. Oxford, England: Oxford Univeristy Press.

Bonner, K. (1997). *A great place to raise kids: Interpretation, science and the urban - rural debate*. Quebec, Canada: McGill - Queens University Press.

Boyes, M. (2000). The place of outdoor education in the health and physical education curriculum. *Journal of Physical Education New Zealand, 33*(2), 75.

Breivik, G. (2007). The quest for excitement in the safe society. In M. McNamee (Ed.), *Philosophy, risk and adventure sports*. New York, NY: Routledge.

Brookes, A. (2002). Outdoor education fatalities in Australia 1960-2002. Part 1: Summary of incidents and introduction to fatality analysis. *Australian Journal of Outdoor Education, 7*(1), 20-36.

Brookes, A. (2003a). A critique of neo-Hahnian outdoor education theory. Part one: Challenges to the concept of 'character building'. *Journal of Adventure Education & Outdoor Learning, 3*(1), 49 - 62.

Brookes, A. (2003b). A critique of neo-Hahnian outdoor education theory. Part two: 'The fundamental attribution error', in contemporary outdoor education discourse. *Journal of Adventure Education & Outdoor Learning, 3*(2), 119-132.

Brown, M., & Fraser, D. (2009). Re-evaluating risk and exploring educational alternatives. *Journal of Adventure Education & Outdoor Learning, 9*(1), 61-77.

Brown, T. (1998). Risk management: Research needs and status report. *The Journal of Experiential Education, 21*(2), 71.

Buck, P. (1966). *The coming of the Maori*. Wellington, New Zealand: Whitcome and Tombs.

Burns, R. B. (1997). *Introduction to research methods* (3rd ed.). Melbourne, Australia: Longman.

Cairns, W. (2009). *How to Live Dangerously: The Hazards of Helmets, the Benefits of Bacteria, and the Risks of Living Too Safe*. NY: St. Martins

Campbell, B. (2007). Prospect of death changes life. *North Shore Times*. Retrieved from http://www.stuff.co.nz/auckland/local-news/22218

Carson, D., & Gillis, H. (1994). A meta-analysis of outdoor adventure programming with adolescents. *Journal of Experiential Education, 17*(1), 40-47.

Carver, A., Timperio, A., & Crawford, D. (2007). Playing it safe: The influence of neighbourhood safety on children's physical activity - A review. *Health & Place* (14), 217-227. doi:10.1007/s11524-009-9402-3

Cessford, G. (2009). *National incident database report 2007 - 2008 outdoor education and recreation*. Wellington, NZ: Mountain Safety Council. Retrieved from http://www.incidentreport.org.nz

Cessford, G. (2010). *National incident database report 2009 outdoor education and recreation*. Wellington, NZ: NZ Mountain Safety Council. Retrieved from http://www.incidentreport.org.nz

Chisholm, H., & Shaw, S. (2004). Prove it! The 'tyranny' of audit and accreditation in the New Zealand outdoors industry. *Leisure Studies, 23*(4), 317-327. doi:10.1080/02614360410001692915

Clements, R. (2004). An investigation of the status of outdoor play. *Contemporary Issues in Early Childhood, 5*(1), 68-80. doi:10.2304/ciec.2004.5.1.10

Cloke, P., & Perkins, H. (2002). Commodification and adventure tourism in New Zealand. *Current Issues in Tourism, 5*(6), 521-549. doi:10.1080/13683500208667939

Collins Pocket English Dictionary. (1981). Glasgow, UK: Collins.

Combs, B., & Slovic, P. (1979). Cause of death: Biased newspaper coverage of biased judgements. *Journalism Quarterly*(56), 837-843, 849.

Confer, J., Wilson, A., Kim, J., & Constintine, M. (2004). Understanding perceived risk and challenge course activities. *Journal of Experiential Education, 26*(3), 198-199.

Crawford, S. (1986). Recreational and sporting values on the fringe of an imperial empire: The reshaping of a British heritage in colonial New Zealand. In Austrailian Society for Sports History (Ed.), *Sport and Colonialism in Nineteenth Century Australasia*. Retrieved from www.la84foundation.org/SportsLibrary/ASSHSSH/ASSHSS01.pdf

Creswell, J. (2003). *Research design: Qualitative, quantitative and mixed methods approaches* (2nd ed.). London, England: Sage.

Crisp, S. (2010, May 20). Learning to take risks is an essential part of growing up. Retrieved from http://www.theage.com.au/

Cutter, S. (1993). *Living with risk: The geography of technological hazards*. London, England: Edward Arnold.

Davidson, C., & Tolich, M. (2003). *Social science research in New Zealand*. Auckland, New Zealand: Pearson.

Davidson, G. (2006). Fact or folklore? Exploring 'myths' about outdoor education accidents: Some evidence from New Zealand. *New Zealand Journal of Outdoor Education, 2*(1), 50-85.

Davidson, G. (2007). The cost of outdoor recreation accidents in New Zealand – Some initial indications from ACC claims. Retrieved from http://www.nzoia.org.nz/

Davidson, L. (2008). Tragedy in the adventure playground: Media representations of mountaineering accidents in New Zealand. *Leisure Studies, 27*(1), 3-19.

Delle Fave, A., Bassi, M., & Massimini, F. (2003). Quality of Experience and Risk Perception in High-Altitude Rock Climbing. *Journal of Applied Sport Psychology, 15*(1), 82-98.

Denscombe, M. (2002). *Foundations for social research*. Philadelphia, PA: Open University Press.

Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods* (2nd ed.). New York, NY: McGraw-Hill.

Department of Conservation. (2006). *Review of camping opportunities in New Zealand*. Retrieved from http://www.doc.govt.nz

Devereux, M. (2005). *A bad day on the Buller River*. Retrieved 31 January 2010, from http://www.nzherald.co.nz/

Devlin, P. J. (1995). Outdoor recreation in New Zealand: some introductory thoughts and beliefs. In P. J. Devlin, R. A. Corbett & C. J. Peebles (Eds.), *Outdoor recreation in New Zealand* (Vol. 1). Wellington, New Zealand: Department of Conservation New Zealand.

Devonport, C. J. (2010). *Coroners report into the deaths of Antony McClean, Natasha Bray, Portia McPhail, Huan Hsu, Anthony Mulder, Floyd Fernandes, and Tara Gregory.* Auckland, New Zealand: Auckland District Court.

Dickson, T. J., Chapman, J., & Hurrell, M. (2000). Risk In outdoor activities: The perception, the appeal, the reality. *Australian Journal of Outdoor Education, 4*(2), 10-17.

Dignan, A., & Cessford, G. (2009). *Outdoor recreation participation and incidents in New Zealand*. Wellington, New Zealand: Mountain Safety Council.

Dillman, D. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). New York, NY: John Wiley & Sons.

Douglas, M. (1992). *Risk and blame: Essays in cultural theory*. London, England: Routledge.

Driver, B. L. (1976). *Toward a better understanding of the social benefits of outdoor recreation participation*. Asheville, NC: U.S. Dept. of Agriculture, Forest Service, Southeastern Forest Experiment Station.

Driver, B., & Brown, P. (Eds.). (1991). *The benefits of leisure*. State College, PA: Venture Publishing.

Driver, B. L., & Burns, D. (1999). Concepts and uses of the Benefits Approach to Leisure. In E. Jackson & E. Burton (Eds.), *Leisure studies: Prospects for the twenty-first century*. State College, PA: Venture Publishing.

Du Fresne, K. (2010, October 26). Magnificent gesture of defiance against tut-tut culture of preciousness. *The Dominion Post*. Retrieved from http://www.stuff.co.nz/

Eames, D. (2008). Kiwis at risk of losing fitness fight. *The New Zealand Herald*. Retrieved from http://proquest.umi.com.

Edginton, C. R., Jordan, D. J., DeGraaf, D. G., & Edginton, S. R. (1995). *Leisure and life satisfaction: Foundational perspectives*. Madison: Brown & Benchmark.

Education centre solves cash flow woes. (2008, Nov 20). *North Harbour News*. Retrieved from http://www.stuff.co.nz.

Elder, J. (2009). World of the cotton wool kids. *Sydney Morning Herald*. Retrieved from http://www.stuff.co.nz/

Ewald, F. (1991). Insurance and risk. In G. Burchell, C. Gordon & P. Millar (Eds.), *The Foucault effect: Studies in governmentaility*. Hemel Hempstead, UK: Harvester Wheatsheaf.

Ewert, A. (1989). *Outdoor adventure pursuits: Foundations, models and theories*. Columbus, OH: Publishing Horizons.

Fenech, K. (2010). Parental fear breeds ‘cotton-wool kids’ - study. Retrieved from http://www.stuff.co.nz/

Finucane, M. L., Slovic, P., Mertz, C. K., Flynn, J., & Satterfield, T. A. (2000). Gender, race, and perceived risk: The ‘white male’ effect. *Health, Risk & Society, 2*(2), 159-172. doi:10.1080/13698570050077390

Fischhoff, B., Slovic, P., Lichtenstein, S., Read, S., & Combs, B. (1978). How safe is safe enough? A psychometric study of attitudes towards technological risks and benefits. *Policy Science, 9*(2), 127-152.

Fox, M., & Gadd, D. (2009). Every parent’s secret dread. *The Press*. Retrieved from http://www.stuff.co.nz/the-press/news/2976382/Every-parents-secret-dread

Frankfort-Nachmias, C., & Nachmias, D. (1997). *Research in the social sciences* (5th ed.). New York, NY: St Martin’s Press.

Freeman, C., Quigg, R., Vass, E., & Broad, M. (2007). *The changing geographies of children’s lives: A study of how children in Dunedin use their environment*. Dunedin, New Zealand: Department of Geography, University of Otago.

Freeman-Greene, S. (2010, November 20). Home, home on the free range, where my dears are at play. *The Sydney Morning Herald*. Retrieved from http://www.smh.com.au/

Furedi, F. (2001). *Paranoid parenting: Abandon your anxieties and be a good parent.* London, England: Penguin.

Furedi, F. (2002). *Culture of fear: Risk taking and the morality of low expectation*. London, England: Continuum.

Furedi, F. (2002, March 15). Epidemic of fear: We were scared to death long before 11 September.

Furedi, F. (2006). *Culture of fear revisited*. London, England: Continuum.

Gair, N. (1997). *Outdoor education theory and practice*. London, England: Cassell.

George, G. (2008, February 7). Tackle them young and attack the primary cause. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz

Giddens, A. (1999). "Risk and responsibility". *Modern Law Review, 62*(1), 1-10. doi:10.1111/1468-2230.00188

Gill, T. (2007). *No Fear: Growing up in a risk averse society*. London, UK: Calouste Gulbenkian Foundation.

Gill, T. (2010). If you go down to the woods today. Retrieved from http://www.rethinkingchildhood.com/

Godbey, G. (1999). *Leisure in your life (5th ed.)*. State College, PA: Venture.

Goodall, S. (2009, August 10). Those overprotective parents... *The Press*. Retrieved from http://www.stuff.co.nz

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, 255-274. doi:10.3102/01623737011003255

Guldberg, H. (2000). Child protection and the precautionary principle. In J. Morris (Ed.), *Rethinking risk and the precautionary principle* (pp. 127-139). Woburn, MA: Butterworth-Heinemann.

Haddock, C. (1993). *Outdoor safety: Managing risks for outdoor leaders.* Wellington, New Zealand: NZ Mountain Safety Council.

Haddock, C. (2007). *Education outside the classroom (EOTC) survey: primary schools report*: Ministry of Education. Retrieved from http://eotc.tki.org.nz/

Haddock, C., & Sword, M. (2004). From liability to student safety in education outside the classroom. *New Zealand Journal of Outdoor Education, 1*(4), 26-52.

Haddock, C., Thevenard, L., Reddish, P., & Phillips, K. (2009). *EOTC leader training and qualification needs*. Wellington, New Zealand: Ministry of Education.

Hanna, G. (1991). *Outdoor pursuits programming: legal liability and risk management*. Edmondton, BC: The University of Alberta Press.

Hans, T. A. (1997). *A meta-analysis of the effects of adventure programming on locus of control*. Georgia College, Milledgeville, GA.

Hattie, J., Marsh, W., Neil, J., & Richards, E. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research, 67*(1), 43-87. doi:10.3102/00346543067001043

Helms, M. (1984). Factors affecting evaluations of risks and hazards in mountaineering. *Journal of Experiential Education, 7*(3), 22-24.

Hersey, P. (2008). *Where the mountains throw their dice: An insight into the Kiwi climbing psyche*. Auckland, New Zealand: New Holland.

Hesse-Biber, S. (2010). *Mixed methods research: merging theory with practice*. Retrieved from http://books.google.co.nz/

Hillary Commission. (1998). *More people, more active, more often. Recommendations from the Physical Activity Taskforce commisioned by the Minister of Sport, Fitness and Leisure*. Wellington, New Zealand.

Hillman, M., Adams, J., & Whiteleg, J. (1990). *One false move ... A study of children's independent mobility*. London, UK: Policy Studies Institute.

Hirsch, J. (1999). Developmental adventure programs. In J. Miles & S. Priest (Eds.), *Adventure programming* (pp. 13-27). State College, PA: Ventura.

Hogan, R. (2002). The crux of risk management In outdoor programs - minimising the possibility of death and disabling injury. *Australian Journal of Outdoor Education, 6*(2), 71-76.

Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis, or, dogmas die hard. *Educational Researcher, 17*(8), 10-16.

Hubbard, C. (2003, November 27). Risk fears sees colleges cut outdoor activities. *The Marlborough Express*. Retrieved from http://www.stuff.co.nz/

Huff, C., Widmer, M. A., McCoy, K. J., & Hill, B. J. (2003). The influence of challenging outdoor recreation on parent - adolescent communication. *Therapeutic Recreation Journal, 37*(1), 18-37.

Hughs, B. (1990). Children's play- a forgotten right. *Environmental Urbanization, 2*(2), 58-64. doi:10.1177/095624789000200207

Humberstone, B., & Stan, I. (2009). Well-being and outdoor pedagogies in primary schooling: The nexus of well-being and safety. *Australian Journal of Outdoor Education, 13*(2), 24-32.

Hume, M. (2003, May 14). Who wants to live under a system of organised paranoia. Retrieved from http://www.spiked-online.com/articles/00000006DDA5.htm

Isaac, A. (1997). The Cave Creek incident: A reasoned explanation. *The Australasian Journal of Disaster and Trauma Studies*(3). Retrieved from http://www.massey.ac.nz.ezproxy.aut.ac.nz/~trauma/issues/1997-3/isaac1.htm

Jackson, J. (2009). SCIRA: A risk management tool. Retrieved from www.riskmanagementconsulting.ca

Jackson, E., & Burton, E. (Eds.). (1999). *Leisure Studies: Prospects for the twenty-first century*. State College, PA: Venture Publishing.

Jackson, S., & Scott, S. (1999). Risk anxiety and the social construction of childhood. In D. lupton (Ed.), *Risk and sociocultural theory: New directions and perspectives*. Cambridge, UK: Cambridge University Press.

Jennings, G. (2001). *Tourism Research*. Stafford, Australia: John Wiley & Sons Australia Ltd.

Jensen, C. R. (1995). *Outdoor recreation in America (5th ed.)*. Champaign, IL: Human Kinetics.

Jillings, A., Furlong, L., LaRhette, M., & Ryan, B. (1995). *Project Adventure 20 year safety study*. Unpublished manuscript: Project Adventure.

Johnson, B. R., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26.

Jones, M. (2004/2005). Disconnections between outdoor programs and education principles. *Out and About*(13), 29-32.

Kane, M. (2008). *New Zealand's adventure culture: In Hillary's steps*. Otago University, Dunedin, New Zealand.

Kane, M., & Tucker, H. (2007). Sustaining adventure in New Zealand outdoor education: Perspectives from renowned New Zealand outdoor adventurers on the contested cultural understanding of adventure. *Australian Journal of Outdoor Education, 11*(2), 29-40.

Kasperson, J. X., Kasperson, R. E., Pidgeon, N., & Slovic, P. (2003). The social amplification of risk: Assessing fifteen years of research and theory. In N. Pidgeon, R. E. Kasperson & P. Slovic (Eds.), *The social amplification of risk* (pp. 13-46). Cambridge, UK: Cambridge University Press.

Kasperson, R. E., & Kasperson, J. X. (1996). The social amplification and attenuation of risk. *The Annals of the American Academy of Political and Social Science*(545), 95-105.

Kasperson, R. E., Renn, O., & Slovic, P. (1988). The social amplification of risk: A conceptual framework. *Risk Analysis, 8*, 177-187.

Kelly, J. R. (1982). *Leisure*. Englewod Cliffs, NJ: Prentice Hall.

Kenworthy, A. (2010). Free-range kids, happy parents. *Good*(15), 48-54. Retrieved from http://good.net.nz/magazine/fifteen

King, M. (2003). *The Penguin history of New Zealand*. Auckland, New Zealand: Penguin Books.

Kittleson, M. (1997). Determining effective follow-up of e-mail surveys. *American Journal of Health Behaviour, 21*(3), 193-196.

Krein, K. (2007). Nature and risk in adventure sports. In M. McNamee (Ed.), *Philosophy, risk and adventure sports*. New York, NY: Routledge.

Kristiansen, M. (1983). Newspaper coverage of diseases and actual mortality statistics. *European Journal of Social Psychology, 13*(2), 193-194. doi:10.1002/ejsp.2420130208

Liddle, J. (1998). Risk management: Walking the tightrope. *The Journal of Experiential Education, 21*(2), 61-62.

LimeSurvey. (2011). Retrieved 1 Feb 2011, from http://www.limesurvey.org/

Lupton, D. (Ed.). (1999). *Risk and sociocultural theory: New directions and perspectives*. Cambridge, UK: Cambridge University Press.

Lupton, D., & Tullock, J. (2002). `Risk is part of your life': Risk epistemologies among a group of Australians. *Sociology, 36*(2), 317-334. doi:10.1177/0038038502036002005

Lynch, K. (2009, September 11). Canterbury mountains claim another life. *The Press*. Retrieved from http://www.stuff.co.nz/the-press/

Lynch, P. (1998). A romp through the past- One hundred and fifty years of New Zealand Outdoor Education Symposium conducted at the meeting of the Ara Matauranga: Pathway to learning. Third national outdoor education confernece., Auckland College of Education, New Zealand.

Lynch, P. (1999). *Enterprise, self-help and cooperation: A history of outdoor education In New Zealand schools to 1989* (Dr. Phil.). University of Canterbury, Christchurch, New Zealand. Retrieved from http://hdl.handle.net/10092/810

Lynch, P. (2006). *Camping in the curriculum: A history of outdoor education in New Zealand schools*. Lincoln, New Zealand: PML Publishing.

Lynch, P., Massam, R., & Peebles, C. J. (1994). Outdoor education in Aotearoa/New Zealand: An annotated bibliography. Retrieved from www.researcharchive.lincoln.ac.nz

Mager, D. (2000). Dead boy could not swim. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=118374

Managing the risk on camp. (2004). *New Zealand Education Gazette, Tukutuku Korero*. Retrieved from http://www.edgazette.govt.nz/

Mann, L., Harmoni, R., & Power, C. (1989). Adolescent decision-making: The development of competence. *Journal of Adolescence, 12*, 265-278.

Maritime New Zealand. (2001). *Accident report Lynne Cee: Canoe flipped and wrapped resulting in 2 fatalities on the Clarence River on 26 October 2001*. Retrieved from http://www.maritimenz.govt.nz/

Maritime New Zealand. (2004). *Wairarapa OPC fatality: Waiohine River on 4 March 2004*. Retrieved from http://www.maritimenz.govt.nz/

McDonald, G. (2010). Guilty verdict. *Dominion Post*. Retrieved from http://www.stuff.co.nz/

McNamee, M. (2007). Adventurous activity, prudent planners and risk. In M. McNamee (Ed.), *Philosophy, risk and adventure sports* (pp. 197). New York, NY: Routledge.

Miller, G. (2009, March 20). Identity of bridge swing death accused revealed. *Manawatu Standard*. Retrieved from http://stuff.co.nz

Milne, S. (2005). The economic significance of the southern lakes ski areas - 2005 winter season. Retrieved from http://www.nztri.org/

Ministry of Education. (1999). *Health and physical education in the New Zealand curriculum*. Wellington, New Zealand: Learning Media.

Ministry of Education. (2002). *Safety and EOTC: A good practice guide for New Zealand schools*. Wellington, New Zealand: Ministry of Education.

Ministry of Education. (2007). *The New Zealand curriculum: For English-medium teaching and learning in years 1-13*. Wellington, New Zealand: Learning Media. Retrieved from http://nzcurriculum.tki.org.nz/

Ministry of Education. (2009a). *EOTC Guidelines*. Wellington, New Zealand: Learning Media.

Ministry of Education. (2009b). *The New Zealand Curriculum*. Wellington, New Zealand: Learning Media.

Ministry of Education. (2010a). *Education outside the classroom EOTC*. Retrieved 4 April 2010, from http://eotc.tki.org.nz/EOTC-home/Research-and-presentations/Articles/

Ministry of Education. (2010b). *Educational counts*. Retrieved 12 June 2010, from http://www.educationcounts.govt.nz/

Ministry of Education. (2010c). *Educational institutions and their contact details*. Retrieved 12 June 2010, from http://www.educationcounts.govt.nz/statistics/schooling/directories/27436

Ministry of Education. (2011). *Decile ratings*. Retrieved 13 Jan 2011, from http://www.minedu.govt.nz/

Ministry of Transport. (2008). *Raising the profile of walking and cycling in New Zealand: A guide for decision makers*. Retrieved from http://www.transport.govt.nz/

Møller, V. (2007). Walking the edge. In M. McNamee (Ed.), *Philosophy, risk and adventure sports*. New York, NY: Routledge.

Monasterio, E. (2006). Adventure sports in New Zealand: Dangerous and costly recklessness or valuable health -promoting activity? Be careful to judge. *The New Zealand Medical Journal, 119*(1247).

Moore, C. (2006). *Take a kid outdoors*. Auckland, New Zealand: New Holland.

Morris, N. (2003). Health, well-being and open space. Literature review. *Open Spaces Research Centre*. Retrieved from www.openspace.eca.ac.uk/pdf/HealthWellbeing.pdf

Mortlock, C. (1983). *The adventure alternative*. Cumbria, U.K.: Cicerone.

Mortlock, C. (2001). *Beyond adventure*. Cumbria, UK: Cicerone.

Nansen, F. (1926). *'Adventure', in F. Nansen, Adventure and other papers*. London: L. & V. Wolfe.

Neil, J. T., & Richards, G. E. (1998). Does outdoor education really work? A summary of recent meta- analyses. *Austrailian Journal of Outdoor Education, 3*(1), 1-9.

Nelson, K. (2010, July 29). Intensive style of parenting exhausting. *The Press*. Retrieved from http://www.stuff.co.nz/

New Zealand Government. (2010). *Statistics New Zealand*. Retrieved 10 Sept 2010, from http://www.stats.govt.nz/

Norusis, M. (2003). *SPSS 12.0 statistical procedures companion*. Upper Saddle River, NJ: Pentice Hall.

Oppenheim, A. N. (2004). *Questionnaire design, interviewing and attitude measurement*. New York, NY: Continuum.

Orams, M. B., & Page, S. J. (2000). Designing self-reply questionnaires to survey tourists: Issues and guidelines for researchers. *Anatolia – International Journal of Tourism and Hospitality Research, 11*(2), 125-140.

Outdoors New Zealand. (2010). *Outdoors New Zealand*. Retrieved 7 January 2010, from http://www.outdoorsnz.org.nz

Outward Bound New Zealand. (2010). *About OB*. Retrieved 26 December, 2010, from http://www.outwardbound.co.nz/about-ob/

Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Peter Blake centre faces closure. (2008, July 23). *North Shore Times*. Retrieved from http://www.stuff.co.nz/

Pidgeon, N., Kasperson, R. E., & Slovic, P. (Eds.). (2003). *The social amplification of risk*. Cambridge, UK: Cambridge University Press.

Plummer, R. (2009). *Outdoor Recreation: An introduction*. New York, NY: Routledge.

Powell, C. (2007). The perception of risk and risk taking behavior: Implications for incident prevention strategies. *Wilderness & Environmental Medicine, 18*(1), 10-15.

Prezza, M., Alparone, F. R., Cristallo, C., & Luigi, S. (2005). Parental perception of social risk and of positive potentiality of outdoor autonomy for children: The development of two instruments. *Journal of Environmental Psychology, 25*(4), 437-453.

Priest, S. (1990). The semantics of adventure education. In J. C. Miles & S. Priest (Eds.), *Adventure education* (pp. 113-117). State College, PA: Venture Publishing Inc.

Priest, S. (1996). Employing the accident frequency-severity chart. *Far-Out Practical and Informative Adventure Education, 1*(1), 22-24.
Priest, S. (1999a). The adventure experience paradigm. In J. Miles & S. Priest (Eds.), *Adventure programming* (pp. 159-162). State College, PA: Ventura.
Priest, S. (1999b). Research in adventure programming. In J. Miles & S. Priest (Eds.), *Adventure programming* (pp. 159-162). State College, PA: Ventura.
Priest, S., & Baillie, R. (1987). Justifying the risk to others: The real razors edge. *The Journal of Experiential Education, 10*(1), 16-22.
Priest, S., & Dixon, T. (1990). *Safety practices in adventure programming*. Bolder, CO: Simon Priest and the Association for Experiential Education.
Priest, S., & Gass, M. A. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.
Renn, O. (1998). Three decades of risk research. *Journal of Risk Research, 1*, 48-71.
Rettner, R. (2010). 'Helicopter' parents have neurotic kids. Retrieved from http://www.msnbc.msn.com/
Robson, C. (1993). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed.). Oxford, UK: Blackwell.
Rosa, E. A. (2003). The logical structure of the social amplification of risk (SARF): Metatheoretical foundations and policy implications. In N. Pidgeon, R. E. Kasperson & P. Slovic (Eds.), *The social amplification of risk*. Cambridge, UK: Cambridge University Press.
Ross, J. (2000). Contemporary patterns and trends in physical activity in New Zealand children and adolescents. *Journal of Physical Education New Zealand, 33*(2), 99-109.
Rothman, A., & Salovey, P. (1997). Shaping perceptions to motivate health behaviour: The role of message framing. *Psychology Bulletin, 324*, 827-830.
Sanchez, M. E. (1992). Effects of questionnaire design on the quality of survey data. *Public Opinion Quarterly, 56*(2), 206-217.
Sandseter, E. (2009). Affordances for risky play in preschool: The importance of features in the play environment. *Early Childhood Education Journal, 36*(5), 439-446.
Scouts New Zealand. (2010). *Our history*. Retrieved 26 Dec 2010, from http://www.scouts.org.nz/
Sexton, R. (2009, July 26). 'Risk illiteracy' the curse of the young and the reckless. *Sunday Age,* p. 5.
Slovic, P. (1987). Perception of risk. *Science, 236*(4799), 280-285. Retrieved from http://socsci2.ucsd.edu
Slovic, P. (1993). Perceptions of environmental hazards: Psychological perspectives. In T. Garling & R. G. Golledge (Eds.), *Behaviour and Environment* (pp. 233-248). Amsterdam: Elsevier Science Publishers.
Slovic, P. (2000). *The perception of risk*. London, England: Earth Scan.
Slovic, P. (2002. *Perceptions of risk posed by extreme events*. Paper presented at the meeting of the Risk Management Strategies in an Uncertain World, Palisades, NY.
Slovic, P., Fischhoff, B., & Lichtenstein, S. (2000). Rating risks. In P. Slovic (Ed.), *The perception of risk* (pp. 104-120). London, England: Earth Scan.
Slovic, P., Kunreuther, H., & White, G. (2000). Decision processes, rationality and adjustment to natural hazards. In P. Slovic (Ed.), *The perception of risk* (pp. 1-31). London, England: Earthscan.
Smith, J. W., Carlson, R. E., Masters, H. B., & Donaldson, G. W. (1972). *Outdoor education* (2nd ed.). Englewoods Cliffs, NJ: Prentice Hall.

SPARC. (2007). *It's all about children and young people: Implementing a child/young person centred philosophy in sport and recreation.* Retrieved from http://www.sparc.org.nz/

SPARC. (2008a). Creating a healthy state for outdoor recreation in New Zealand discussion document. Retrieved from http://www.sparc.org.nz

SPARC. (2008b). *Outdoor recreation review initial findings*: SPARC. Retrieved from www.sparc.org.nz/

SPARC. (2009). *Active NZ survey*. Wellington, New Zealand: Sport and Recreation New Zealand.

SPARC. (2010). *SPARC strategic plan 2009-2015*. Retrieved 1 May 2010, from http://www.sparc.org.nz/

SPARC. (2011). *Hillary expedition*. Retrieved Jan 22, from http://www.sparc.org.nz/

Stark, P. (2001). *Last breath: Cautionary tales from the limits of human endurance*. New York, NY: Ballantine.

Statistics New Zealand. (2006). *New Zealand census of population and dwellings*. Wellington, New Zealand. Retrieved from www.stats.census.govt.nz

Stothart, B. (2000). Pegs in the ground: Landmarks in the history of New Zealand physical education. *Journal of Physical Education New Zealand, 33*(2), 5.

Sullivan, R. (2006). The dangers of safety in outdoor education. *New Zealand Journal of Outdoor Education, 2*(1), 5-17.

Sutton, B. (2004). How worried should we be? *Education Today*(1), 11.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. London: Sage.

Tashakkori, A., & Teddlie, C. (2002). *Handbook of mixed methods*. London: Sage.

The Royal Society. (1982). *Risk: Analysis, perceptions and management*. London, England: The Royal Society.

Trist, A. (1982, 21-24 August). Safety, a destroyer of adventure. In P. Toynbee & L. Blake (Chair), *NZCRS & NZOTAB.* Symposium conducted at the meeting of the National outdoor education conference, Wellington, New Zealand.

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5*, 207-232.

Ungar, M. (2008, October 24). Raising kids: The peril paradox. *Sunday Star Times*. Retrieved from http://www.stuff.co.nz/

United Nations. (2010). *Declaration of the rights of the child (1959)*. Retrieved 19 Dec 2010, from http://www.cirp.org/library/ethics/UN-declaration/

US Department of Health and Human Services. (1996). *Physical activity and health: A report of the Surgeon General*: Department of Health and Human Services, Centres for Disease Control and Prevention, National Centre for Chronic Disease Prevention and Health Promotion, USA.

Van Loon, J. (2002). *Risk and technological culture*. London, England: Routledge.

Vandelanotte, C., Sugiyama, T., Gardiner, P., & Owen, N. (2009). Associations of Leisure-Time Internet and Computer Use With Overweight and Obesity, Physical Activity and Sedentary Behaviors: Cross-Sectional Study. *Medical Internet Research, 11*(3). doi:10.2196/jmir.1084

Vass, B. (2009, March 29). Canyoning deaths 'could have been avoided'. *The New Zealand Herald*. Retrieved from http://www.nzherald.co.nz

Walker, S., Ross, J., & Gray, A. (1999). Participation in sport and active leisure by New Zealand school children and adolescents. *Journal of Physical Education New Zealand, 32*(1), 4-8.

Wane, J. (2004). Smother love: Have we become too protective in the way we're raising our kids? *Sunday Star Times*. Retrieved from http://www.readersdigest.ca/mag/2004/10/smother_love.html

Water Safety NZ. (2010). *Research and statistics*. Retrieved Jan 10, from http://www.watersafety.org.nz/

Water safety NZ. (2011). *Water safety education*. Retrieved February 13, 2011, from http://www.watersafety.org.nz/

Weinstein, D. (1980). Unrealistic optimism about future events. *Journal of Personality and Social Psycology, 39*, 806-820.

Whitehead, A. N. (1933). *Adventures of ideas*. NY: The Macmillan company.

Wildavsky, A. (1988). *Searching for safety*. New Brunswick, NJ: Transaction Publishers.

Wilkinson, I. (2001). Social theories of risk perception: At once indispensable and insufficient. *Current Sociology, 49*(1), 1-22. doi:10.1177/0011392101049001002

Williams, D. (2009, April 29). Tourist killed in riverboarding accident named. *The Press*. Retrieved from http://www.press.co.nz

Wong, G. (2005). The cottonwool kids. *Metro, February,* 24-33.

Wurdinger, S. (1997). *Philosophical issues in outdoor education* (3rd ed.). Dubuque, IA: Kendall Hunt.

Yammarino, F. J., Skinner, S. J., & Childers, T. L. (1991). Understanding mail survey response behavior. *Public Opinion Quarterly, 55*(4), 613-639.

Zink, R., & Boyes, M. (2006). The nature and scope of outdoor education in New Zealand schools. *Australian Journal of Outdoor Education, 10*(1), 11-21.

Zink, R. (2003). Abseiling at 5, rafting at 10, what do we do with them when they are 15? Why pursuits might seem like an obvious choice for outdoor education? *New Zealand Journal of Outdoor Education, 1*(2), 56-62.

Zink, R. (2004). The shifting sands of challenge-by-choice: Does it have a place in safety management in EOTC? *Journal of Physical Education New Zealand, 37*(1), 6-11.

Zink, R., & Leberman, S. (2001). Risking a debate - redefining risk and risk management: A New Zealand case study. *The Journal of Experiential Education, 24*(1), 50-57.

Zuckerman, M. (1994). *Behavioural expressions and biosocial bases of sensation seeking*. Cambridge, UK: Cambridge University Press.

APPENDICES

Appendix 1: Ethics Approval

MEMORANDUM

Auckland University of Technology Ethics Committee

(AUTEC)

To:Mark Orams

From:**Madeline Banda** Executive Secretary, AUTEC

Date:18 February 2010

Subject: Ethics Application Number 10/12 **The influence of risk perception on preteen participation in outdoor education activities.**

Dear Mark

I am pleased to advise that the Auckland University of Technology Ethics Committee (AUTEC) approved your ethics application at their meeting on 8 February 2010, subject to the following conditions:

1. clarification of how private schools will be involved in the research as indicated in the response to section C.4.1 of the application;
2. clarification of how issues specific to particular cultures, e.g. Maori, Pasifika, etc., will be identified and included;
3. clarification of why special needs schools will be excluded;
4. consideration of specifically inviting Kura Kaupapa schools to participate in the research;
5. provision of the standard memo of support from AUT Counselling and inclusion of a brief statement about the availability of this in the Information Sheet.

AUTEC recommends that the researchers reconsider their recruitment methods for parents as studies indicate that many lower-decile schools do not have PTA committees.

From the desk of ...
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Student Services Group

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I request that you provide the Ethics Coordinator with a written response to the points raised in these conditions at your earliest convenience, indicating either how you have satisfied these points or proposing an alternative approach. AUTEC also requires written evidence of any altered documents, such as Information Sheets, surveys etc. Once this response and its supporting written evidence has been received and confirmed as satisfying the Committee's points, you will be notified of the full approval of your ethics application.

When approval has been given subject to conditions, full approval is not effective until *all* the concerns expressed in the conditions have been met to the satisfaction of the Committee. Data collection may not commence until full approval has been confirmed. Should these conditions not be satisfactorily met within six months, your application may be closed and you will need to submit a new application should you wish to continue with this research project.

When communicating with us about this application, we ask that you use the application number and study title to enable us to provide you with prompt service. Should you have any further enquiries regarding this matter, you are welcome to contact Charles Grinter, Ethics Coordinator, by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 8860.

Yours sincerely

Madeline Banda

Executive Secretary

Auckland University of Technology Ethics Committee

Cc:Mark Jones mark.jones@aut.ac.nz

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AUT UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

To:**Madeline Banda** Executive Secretary, AUTEC

From:**Mark Orams**

Date:12 March 2010

Subject: Ethics Application Number 10/12 **The influence of risk perception on preteen participation in outdoor education activities.**

Dear Madeline,

Please convey my thanks to the Ethics Committee (AUTEC) for conditionally approving my ethics application 8 February 2010. After considering your suggestions and queries we have made the following changes and added clarifications as follows:

1. Clarification of how private schools will be involved in the research as indicated in the response to section C.4.1 of the application;

These will be included in the study and treated in the same manner as public schools. The Association of Independent Schools with be contacted for data on these schools and contact details.

2. Clarification of how issues specific to particular cultures, e.g. Maori, Pasifika, etc., will be identified and included;

A specific open-ended question has been added around decision making re cultural issues to the school survey form.

"Please comment on any issues of culture that alter the risk in your opinion and state what effect this has on participtionin outdoor education or decisions made."

And a specific question has been added around decision making re cultural issues to the parent's survey form:

"Please comment on any issues of culture particular to your child that you feel elevates the risk to them in outdoor education?

3. Clarification of why special needs schools will be excluded;

The intent of this study is to draw conclusions relevant to the general populous. A study comparing what takes place in special needs schools would make a fine future research

topic, building on this research. However it is beyond the scope of this study to resource the surveying of specialist schools.

4. Consideration of specifically inviting Kura Kaupapa schools to participate in the research;

Again while I think this would be very worthy research it is beyond the scope of this study. Kura Kaupapa are specialist schools. They require a different set of skills to survey approriately which is beyond the resourcing of this study. Furthermore the questions in the survey are related to the general populous. Kura Kaupapa engage with the outdoors in unique ways and survey questions unique to Kura Kaupapa would need to be generated for the survey to be relevant to them. The study as it stands is a considerable undertaking for a Masters project and it is thought best to focus its resources on the general population.

5. Provision of the standard memo of support from AUT Counselling and inclusion of a brief statement about the availability of this in the Information Sheet.

This has been sought and approved by AUT Health and Counseling and included both as a link and as as a statement in the participant information sheets for both survey groups. It will also be included in the interview information sheet for the "outdoor education provider" group.

> AUTEC recommends that the researchers reconsider their recruitment methods for parents as studies indicate that many lower-decile schools do not have PTA committees.

This has been changed after seeking advice and further consideration. The initial contact will be made with the school principal, asking for inclusion in the school newsletter of an invitation for parents to participate in the study with a link to the information sheet and online survey. This was suggested by several school principals as the best and fairest way to reach parents.

With the resulting self selection of this survey there exists the potential for skewed responses, such as a large number of survey responses from a single school as a result of an accident they may have had on an outdoor education fieldtrip. To determine if this has happened it will be important to request the name of the school in the questionnaire. Their questionnaire responses will be confidential and not distributed to anyone other

than the principal researcher and thesis supervisor. The results will only be presented in aggregate form and no individual will be identified in any of the publications relating to this research.

In view of feedback the questionnaires have also undergone some formatting changes.

Thank you for your comments and suggestions.

Kind regards

Mark Orams

MEMORANDUM

To Charles Grinter

CC Professor Mark Orams, Professor Patria Hume

FROM Mark Jones

SUBJECT Ethics Application 10/12

DATE 14 April 2010

Charles,

Please find attached with this memo the information sheets and questionnaires reflecting the changes we discussed on the phone yesterday.

1. The email approach has been reworded to be less persuasive.
2. The "How do I agree to participate in this research?" paragraph has been clarified, including a statement to the effect that they are indicating their consent by completing the online survey.
3. The "How will my privacy be protected?" paragraph includes a statement clarifying that the particpant cannot be connected to the survey data.
4. The "How was I chosen for this research?" paragraph has been expanded for the parent/caregiver participation sheet administered to BOT's and clarifies that they are eligible because they are a parent of a child at the school and their governance role is irrelevant to the study.
5. The question asking for the school's name has been removed from both surveys.
6. Wording has been added to the end of the survey inviting the participant to enter into the draw.
7. Changed "caregiver" to "legal guadian".

I would also like to make clear that the approach to some of the Boards of Trustees will be made through the NZSTA via an electronic newsletter and the "email" introduction to the study will be inserted into this as worded. The approach to schools for the principal/teacher survey will be via email.

I hope these changes meet your approval and thank you for your assistance.

Kind regards

Mark

AUT UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

MEMORANDUM

Auckland University of Technology Ethics Committee

(AUTEC)

To:Mark Orams

From:**Madeline Banda** Executive Secretary, AUTEC

Date:28 April 2010

Subject: Ethics Application Number 10/12 **The influence of risk perception on preteen participation in outdoor education activities.**

Dear Mark

Thank you for providing written evidence as requested. I am pleased to advise that it satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC) at their meeting on 8 February 2010 and that I have approved your ethics application. This delegated approval is made in accordance with section 5.3.2.3 of AUTEC's *Applying for Ethics Approval: Guidelines and Procedures* and is subject to endorsement at AUTEC's meeting on 10 May 2010.

Your ethics application is approved for a period of three years until 28 April 2013.

I advise that as part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through *http://www.aut.ac.nz/research/research-ethics*. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 28 April 2013;
- A brief report on the status of the project using form EA3, which is available online through *http://www.aut.ac.nz/research/research-ethics*. This report is to be submitted either when the approval expires on 28 April 2013 or on completion of the project, whichever comes sooner;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are reminded that, as applicant, you are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

Please note that AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to make the arrangements necessary to obtain this. Also, if your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply within that jurisdiction.

From the desk of ...
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When communicating with us about this application, we ask that you use the application number and study title to enable us to provide you with prompt service. Should you have any further enquiries regarding this matter, you are welcome to contact Charles Grinter, Ethics Coordinator, by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 8860.

On behalf of the AUTEC and myself, I wish you success with your research and look forward to reading about it in your reports.

Yours sincerely

Madeline Banda

Executive Secretary

Auckland University of Technology Ethics Committee

Cc:Mark Jones mark.jones@aut.ac.nz

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Appendix 2: Participant Information Sheets, Consent, and Model Questions

Principal/EOTC Coordinator Information Sheet

Participant Information Sheet

Project Title: <u>The influence of risk perception on participation in outdoor education and recreation activities in primary and intermediate schools</u>

Date Information Sheet Produced: 13 April 2010

An Invitation

Your school is invited to participate in this research project being conducted by Mark Jones and the New Zealand Tourism Research Institute at AUT University. This research is formally approved by the AUT University Ethics Committee.

Participation in this research is entirely voluntary and you will in no way be disadvantaged should you choose not to take part. If you are willing to participate I invite you to follow the link below to an online questionnaire, which should take you no longer than 10-15 minutes to complete. The online questionnaire link is http://www.

Thank you for your willingness to consider this invitation.

Kind regards

Mark Jones
AUT University, Auckland, New Zealand

What is the purpose of this research?

This research is being conducted in order to get a better understanding of the ways in which risk perception influences decision making with regard to participation by preteen students in outdoor education and recreation activities. This study will result in a report to SPARC, a

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Masters qualification and several conference presentations over the course of the next two years.

How was I chosen for this invitation?

You have been identified as an appropriate person within the school to give an opinion on outdoor education and recreation matters at the school. All Primary and Intermediate schools have been invited to respond.

What will happen in this research?

This study involves three phases of research: 1) Online questionnaires which are administered to Primary and Intermediate schools; 2) A similar online questionnaire administered to parents/ legal guardians from the school's Board of Trustees; and 3) interviews with key providers of outdoor education programmes for preteen school pupils.

We invite you to participate in Phase 1 and to complete the online questionnaire. This questionnaire focuses on your experiences, perceptions, and opinions.

Your contribution to this study is valuable as it will provide a perspective on risk from someone making decisions about outdoor education and recreation in a school and will allow me to make comparisons with the parents/ legal guardians and providers.

What are the discomforts and risks?

You may feel uncomfortable sharing your private views. You may be concerned that you or your school may be able to be identified as a result of the research. If you have experienced or have been affected by accidents or near accidents in outdoor recreation settings you may feel psychologically or emotionally upset by recalling these experiences. You could feel embarrassed if your school has not been able to afford to provide your students with outdoor education activities.

How will these discomforts and risks be alleviated?

Participation in this study is voluntary, if you feel upset or embarrassed by the subject of the study or by any question you may decline to participate or withdraw from the study at any stage. All questions are optional, and you may choose not to answer some or any questions. The results will be collated and reported in general terms and individual teachers, programmes, schools, parents/ legal guardians or children will not be identified. Your responses are confidential and stored anonymously in a database. This database is kept confidential and is kept secure in my office at AUT University.

Should you require it AUT offers free counselling by professional counsellors. It must be in relation to issues arising from participation in this research project and is for a maximum of **three** sessions. If you elect to take this offer up:

- You will need to contact one of our centres at WB219 or AS104 or phone **09 921 9992 City Campus** or **09 921 9998 North Shore campus** to make an appointment
- You will need to let the receptionist know that you are a research participant
- You will need to provide the contact details below to confirm this

From the desk of ...
Madeline Banda
Academic Services
Student Services Group

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E-mail: madeline.banda@aut.ac.nz

Tel: 64 9 917 9999
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- You can find out more information about our counsellors and the option of online counselling on our website:

- **http://www.aut.ac.nz/students/student_services/health_counselling_and_wellbeing**

What are the benefits?

The research will help provide a clearer picture of the trends and changes in outdoor education and specifically issues around perceived risk. It will also contribute to a better understanding of how perceived risk relates to participation. The findings will be presented in a written report which will be available online at www.nztri.org by 31 December 2010.

How will my privacy be protected?

Your questionnaire responses will be anonymous and the researcher will not be able to connect the survey to the participant. The individual responses are confidential and not distributed to anyone other than me as the principal researcher and my thesis supervisors, Professor Mark Orams and Professor Patria Hume. The results will only be presented in aggregate form and no individual will be identified in any of the publications relating to this research.

What are the costs of participating in this research?

There is no cost to participate in the research apart from approximately 10-15 minutes of your time.

How do I agree to participate in this research?

By completing the online questionnaire you are indicating your consent to participate in this research. To do so simply click on this link http://www and answer the questions. This should take you no longer than 15 minutes to complete.

If the link does not load automatically, select the link and copy and paste it to your web browser. Please be sure to complete this questionnaire between now and June 30, 2010.

Will I receive feedback on the results of this research?

The results of this research will be published in a written report that will be made available online at www.nztri.org by 31 December 2010. Highlights from this research may also be presented in local media.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to me, the Principal Researcher; Mark Jones, mark.jones@aut.ac.nz phone +64 9 921 9999 ext 7272 or to my principal supervisor Professor Mark Orams, mark.orams@aut.ac.nz phone +64 9 921 9999 ext 6410.

From the desk of ...
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Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, madeline.banda@aut.ac.nz +64 9 921 9999 ext 8044.

Who do I contact for further information about this research?

Researcher Contact Details: Mark Jones. mark.jones@aut.ac.nz 09 921 9999 ext.7272

Project Supervisor Contact Details: Professor Mark Orams. mark.orams@aut.ac.nz 09 921 9999 ext.6410

Approved by the Auckland University of Technology Ethics Committee on 18 April 2010, AUTEC Reference number 10/12.

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Parent/Legal Guardian Information Sheet

Participant Information Sheet

Project Title: The influence of risk perception on participation in outdoor education and recreation activities in primary and intermediate schools

Date Information Sheet Produced: 13 April 2010

An Invitation

You are invited to participate in research being conducted by Mark Jones and the New Zealand Tourism Research Institute at AUT University. This research is formally approved by the AUT University Ethics Committee.

Participation in this research is entirely voluntary and you will in no way be disadvantaged should you choose not to take part. If you are willing to participate I invited you to follow the link below to an online questionnaire, which should take you no longer than 10-15 minutes to complete. The online questionnaire link is http://www.

Thank you for your willingness to consider this invitation.

Kind regards

Mark Jones

AUT University, Auckland, New Zealand

What is the purpose of this research?

This research is being conducted in order to get a better understanding of the ways in which risk perception influences decision making with regard to participation by preteen students in outdoor education and recreation activities. This study will result in a report to SPARC, a Masters qualification and several conference presentations over the course of the next two years.

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How was I chosen for this invitation?

You have been chosen because you are a parent or legal guardian of a child at this primary/intermediate school. All primary and intermediate school BOT's have been approached through the NZSTA, but the questionnaire is not concerned with your governance role, only your perspective as a parent. Anyone on your board who has a child or is a legal guardian of a child attending the school is an appropriate respondent.

What will happen in this research?

This study involves three phases of research: 1) Online questionnaires which are administered to Primary and Intermediate schools; 2) A similar online questionnaire administered to parents/ legal guardians from the school's Board of Trustees 3) interviews with key providers of outdoor education programmes for preteen school pupils.

We invite you to participate in Phase 2 and to complete the online questionnaire. This questionnaire focuses on your experiences, perceptions, and opinions.

Your contribution to this study is valuable as it will help give a parent/ legal guardian's perspective on risk and will allow me to make comparisons with the schools and providers.

What are the discomforts and risks?

You may feel uncomfortable sharing your private views. You may be concerned that you or your school may be able to be identified as a result of the research. If you have experienced or have been affected by accidents or near accidents in outdoor recreation settings you may feel psychologically or emotionally upset by recalling these experiences. You could feel embarrassed if you have not been able to afford to send your child or children on outdoor education activities.

How will these discomforts and risks be alleviated?

Participation in this study is voluntary, if you feel upset or embarrassed by the subject of the study or by any question you may decline to participate or withdraw from the study at any stage. All questions are optional, and you may choose not to answer some or any questions. The results will be collated and reported in general terms and individual teachers, programmes, schools, parents/ legal guardians or BOT members or branches will not be identified. Your responses are confidential and stored anonymously in a database. This database is kept confidential and is kept secure in my office at AUT University.

Should you require it AUT offers free counselling by professional counsellors. It must be in relation to issues arising from participation in this research project and is for a maximum of **three** sessions. If you elect to take this offer up:

- You will need to contact one of our centres at WB219 or AS104 or phone **09 921 9992 City Campus** or **09 921 9998 North Shore campus** to make an appointment
- You will need to let the receptionist know that you are a research participant
- You will need to provide the contact details below to confirm this

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- You can find out more information about our counsellors and the option of online counselling on our website:

  http://www.aut.ac.nz/students/student_services/health_counselling_and_wellbeing

What are the benefits?

The research will help provide a clearer picture of the trends and changes in outdoor education and specifically issues around perceived risk. It will also contribute to a better understanding of how perceived risk relates to participation. The findings will be presented in a written report which will be available online at www.nztri.org by 31 December 2010.

How will my privacy be protected?

Your questionnaire responses will be anonymous and the researcher will not be able to connect the survey to the participant. The individual responses are confidential and not distributed to anyone other than me as the principal researcher and my thesis supervisors, Professor Mark Orams and Professor Patria Hume. The results will only be presented in aggregate form and no individual will be identified in any of the publications relating to this research.

Your questionnaire response will be confidential and not distributed to anyone other than me as the principal researcher and my supervisor. The results will only be presented in aggregate form and no individual will be identified in any of the publications relating to this research.

What are the costs of participating in this research?

There is no cost to participate in the research apart from approximately 10-15 minutes of your time.

How do I agree to participate in this research?

By completing the online questionnaire you are indicating your consent to participate in this research. To do so simply click on this link http://www. and answer the questions. This should take you no longer than 15 minutes to complete.

If the link does not load automatically, select the link and copy and paste it to your web browser. Please be sure to complete this questionnaire between now and 14 May, 2010.

Will I receive feedback on the results of this research?

The results of this research will be published in a written report that will be made available online at www.nztri.org by 31 December 2010. Highlights from this research may also be presented in local media.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to me, the Principal Researcher; Mark Jones*, mark.jones@aut.ac.nz,* phone +64 9 921 9999

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ext 7272 or to my principal supervisor Professor Mark Orams; mark.orams@aut.ac.nz, phone +64 9 921 9999 ext 6410.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, *madeline.banda@aut.ac.nz* +64 9 921 9999 ext 8044.

Who do I contact for further information about this research?

Researcher Contact Details: Mark Jones. mark.jones@aut.ac.nz . 09 921 9999 ext.7272

Primary Project Supervisor Contact Details: Professor Mark Orams. mark.orams@aut.ac.nz 09 921 9999 ext.6410

Approved by the Auckland University of Technology Ethics Committee on 18 April 2010, AUTEC Reference number 10/12.

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Outdoor Provider Information Sheet

Participant Information Sheet

Date Information Sheet Produced: 25 May 2010

Project Title

The influence of risk perception on participation in outdoor education and recreation activities in primary and intermediate schools.

What is the purpose of this research?

This research is being conducted in order to gain a better understanding of the ways in which risk perception influences participation by primary and intermediate school students in outdoor education and recreation activities. This study will result in a report to SPARC, a Masters qualification and several conference presentations over the course of the next two years.

How was I chosen for this invitation?

You are invited to participate on the basis of your role within your workplace and the role your workplace has as an outdoor education provider for primary and intermediate aged children.

What will happen in this research?

This study involves three phases of research: 1) Online questionnaires which are administered to Primary and Intermediate schools; 2) A similar online questionnaire administered to parents; and 3) Phone interviews with key providers of outdoor education programmes for preteen school pupils.

You are invited to participate in phases three of the study. If you are willing to participate I invited you to return the electronic consent below this information sheet and I will endeavour to find a time convenient to you to interview you by telephone. In order to allow me to accurately analyse your responses I will, with your consent, record this interview.

Your contribution to this study is valuable as it will help give a perspective on risk from someone in industry and will allow me to make comparisons with parents and schools.

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What are the discomforts and risks?

You may feel uncomfortable sharing your private views. You may be concerned that you or your place of work may be able to be identified as a result of the research. You may feel uncomfortable telling me about problems or challenges you have faced. If you or your organisation have experienced or have been affected by accidents or near accidents in your operations you may feel psychologically or emotionally upset by recalling these experiences.

How will these discomforts and risks be alleviated?

Participation in this study is voluntary, if you feel upset or embarrassed by the subject of the study or by any question you may decline to participate or withdraw from the study at any stage, without disadvantage. All questions are optional, and you may choose not to answer some or any questions. The results will be collated and reported in general terms and individuals and organisations will not be identified. Your responses are confidential and stored anonymously in a database. This database is kept confidential and is kept secure in my office at AUT University.

Should you require it AUT offers free counselling by professional counsellors. It must be in relation to issues arising from participation in this research project and is for a maximum of **three** sessions. If you elect to take this offer up:

- You will need to contact one of our centres at WB219 or AS104 or phone **09 921 9992 City Campus** or **09 921 9998 North Shore campus** to make an appointment
- You will need to let the receptionist know that you are a research participant
- You will need to provide the contact details below to confirm this
- You can find out more information about our counsellors and the option of online counselling on our website:
- **http://www.aut.ac.nz/students/student_services/health_counselling_and_wellbeing**

What are the benefits?

The research will help provide a clearer picture of the trends and changes in outdoor education and specifically issues around perceived risk. It will also contribute to a better understanding of how perceived risk relates to participation. The findings will be presented in a written report which will be available online at www.nztri.org.

How will my privacy be protected?

Your interview responses will be confidential and not distributed to anyone other than me as the principal researcher and my supervisor. No individual will be identified in any of the publications relating to this research.

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What are the costs of participating in this research?

There is no cost to participate in the research apart from approximately 30 minutes of your time.

How do I agree to participate in this research?

To participate in this research complete the attached consent below and return it to me.

Please respond before 4 June, 2010.

Will I receive feedback on the results of this research?

The results of this research will be published in a written report that will be made available online at www.nztri.org by 31 December 2010. Highlights from this research may also be presented in local media.

What do I do if I have concerns about this research or want more information?

Any concerns regarding the nature of this project should be notified in the first instance to me, the Principal Researcher; Mark Jones*, mark.jones@aut.ac.nz,* phone +64 9 921 9999 ext 7272 or to my principal supervisor Professor Mark Orams. mark.orams@aut.ac.nz 09 921 9999 ext.6410

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, *madeline.banda@aut.ac.nz* +64 9 921 9999 ext 8044.

Approved by the Auckland University of Technology Ethics Committee on 18 April 2010, AUTEC Reference number 10/12.

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Outdoor Provider Consent Form

Interview Consent Form

Project title:The influence of risk perception on participation in outdoor education and recreation activities in primary and intermediate schools

Project supervisor: *Professor Mark Orams. mark.orams@aut.ac.nz 09 921 9999*
Researcher: *Mark Jones. mark.jones@aut.ac.nz 09 921 9999 ext.7272*

- ○ I have read and understood the Participant Information Sheet dated 25 May 2010.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that the interview will be audio taped and may be transcribed.
- ○ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data analysis, without being disadvantaged in any way.
- ○ If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- ○ I agree to take part in this research.
- ○ I wish to receive a copy of the report from the research (please confirm choice):

Yes○ No○

Participant's signature:

.....……

Participant's name:

.....……

Participant's phone contact details (to arrange a time for an interview) :

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on 18 April 2010, AUTEC Reference number 10/12.

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Outdoor Provider Interview Questions

How does perceived risk influence decision making for participation in outdoor recreation activities in New Zealand Primary and Intermediate schools.

INDICATIVE QUESTIONS FOR OUTDOOR RECREATION PROVIDERS INTERVIEWS

1. How important are safety concerns for parents/schools when deciding whether to send a child to your centre/programme?

2. Do you get many questions and enquiries around supervision, risks, staff quality, etc.?

3. Do they ask questions relating to the risk associated with programmes or activities?
4. Are any fears expressed by parents and schools?
5. Do you think that, in general, schools have a correct perception of the risk in the outdoor recreation activities that you offer?
6. Do you think that, in general, parents have a correct perception of the risk in the outdoor recreation activities that you offer?
7. There have been some high profile outdoor recreation and education fatalities in recent years. Have you observed any increase in parental concern as a result? School concern?
8. What advice is given to parents of schools who express concern about the risk to their children?
9. How else is information shared about the real risk associated with programmes and activities?
10. How much residual risk (real risk) is there for participants taking part in your programmes?
11. Are the positive aspects of risk articulated to parents and schools in any way?
12. Do you think that, in general, children have a correct perception of the risk in the outdoor recreation activities that you offer?
13. Has this changed over time in your perception. That is, are children generally better or worse at assessing the real risk involved in an activity?

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14. What health and safety compliance paperwork is requested from schools/parents before fieldtrips take place?
15. Do you have any suggestions for ensuring parents and schools have a realistic perception of the real risk in your programmes/activities and understanding the "potential for gain" from that "potential for loss"?
16. Has your centre had any bad accidents?
17. What effect did these have on perception of risk, or parental concern?
18. Did the Mangatepopo tragedy have any influence that you noticed on parental perception of the riskiness of Outdoor Education?
19. Are there any other comments you wish to make in regards to this research?

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Appendix 3: Online Questionnaires

Section 1: Please answer those questions relevant to your school and indicate your answer my clickin

Important note
For the purpose of this survey:
Outdoor education and recreation is defined as the use of outdoor natural environments, or activities traditionally associated with the outdoors done indoors (such as artificial wall climbing and pool canoe sports), for the purpose of teaching and learning or physical recreation in the outdoors.

1. Did your school have an outdoor education programme in 2009?

Choose one of the following answers

- ○ Yes
- ○ No

2. Did your school offer extra curricular outdoor recreation opportunities (such as might be offered by a school outdoor club) in 2009?

Choose one of the following answers

- ○ Yes
- ○ No

3. If you answered yes to question 1, approximately what percentage of the activities took place inside the school grounds?

Choose one of the following answers

- ○ 0%
- ○ 10%
- ○ 20%
- ○ 30%
- ○ 40%
- ○ 50%
- ○ 60%
- ○ 70%
- ○ 80%
- ○ 90%
- ○ 100%
- ○ Don't know

4. If you answered yes to question 1 approximately what percentage of your outdoor education and recreation experiences are provided to your students by an outside provider?

Choose one of the following answers

- ○ 0%
- ○ 10%
- ○ 20%
- ○ 30%
- ○ 40%
- ○ 50%
- ○ 60%
- ○ 70%
- ○ 80%
- ○ 90%
- ○ 100%
- ○ Don't know

5. What statement best describes your school's outdoor education programme over the last 5 years in terms of the number of programmed days?

Choose one of the following answers

- ○ significantly reduced from what it was 5 years ago
- ○ reduced from what it was 5 years ago
- ○ the same size
- ○ increased from what it was 5 years ago
- ○ significantly increased from what it was 5 years ago

6. Comparing your school's outdoor education programme today to what existed 5 years ago, the proportion of content delivered on the school's grounds is:

Choose one of the following answers

- ○ much greater than 5 years ago
- ○ greater than 5 years ago
- ○ the same as 5 years ago
- ○ less than 5 years ago
- ○ much less than 5 years ago

7. What statement best describes your school's extra curricular outdoor recreation activities (such as might take place through a school outdoor club) over the last 5 years?

Choose one of the following answers

- ○ significantly reduced from what it was 5 years ago
- ○ reduced from what it was 5 years ago
- ○ the same size
- ○ increased from what it was 5 years ago
- ○ significantly increased from what it was 5 years ago

8.1 For each of the activities below choose a level of risk that equates most closely with your perception of the risk of serious harm for students doing the activity under qualified supervision.
Serious harm = requiring hospitalisation for broken bones, or concussion, or hypothermia, etc.

	No risk	Very low	Low	Moderate	High	Very high risk	Not sure
Day hike	○	○	○	○	○	○	○
Residential school camp	○	○	○	○	○	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○	○	○	○	○	○
Overnight tenting on a trip	○	○	○	○	○	○	○
Canoeing/kayaking in a pool	○	○	○	○	○	○	○
Canoeing/kayaking in sheltered waters	○	○	○	○	○	○	○
Canoeing/kayaking on a river	○	○	○	○	○	○	○
Science field trip to the bush or natural water feature	○	○	○	○	○	○	○
Artificial wall climbing or abseiling	○	○	○	○	○	○	○
Rock climbing or abseiling on a natural cliff-face	○	○	○	○	○	○	○
Cooking with an open fire	○	○	○	○	○	○	○
Activity involving cookers	○	○	○	○	○	○	○
Skiing	○	○	○	○	○	○	○
Ropes course activities	○	○	○	○	○	○	○
Rugby	○	○	○	○	○	○	○
Netball	○	○	○	○	○	○	○

8.2 Which of the activities below do your students participate in through school.

	Yes	No
Day hike	○	○
Residential school camp	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○
Overnight tenting on a trip	○	○
Canoeing/kayaking in a pool	○	○
Canoeing/kayaking in sheltered waters	○	○
Canoeing/kayaking on a river	○	○
Science field trip to the bush or natural water feature	○	○
Artificial wall climbing or abseiling	○	○
Rock climbing or abseiling on a natural cliff-face	○	○
Cooking with an open fire	○	○
Activity involving cookers	○	○
Skiing	○	○
Ropes course activities	○	○
Rugby	○	○
Netball	○	○

8.3 Please indicate which activities you think your school would be prepared to offer students in terms of your perception of the risk being "acceptable" or "unacceptable".

	The risk is acceptable	The risk is unacceptable	Not sure
Day hike	○	○	○
Residential school camp	○	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○	○
Overnight tenting on a trip	○	○	○
Canoeing/kayaking in a pool	○	○	○
Canoeing/kayaking in sheltered waters	○	○	○
Canoeing/kayaking on a river	○	○	○
Science field trip to the bush or natural water feature	○	○	○
Artificial wall climbing or abseiling	○	○	○
Rock climbing or abseiling on a natural cliff-face	○	○	○
Cooking with an open fire	○	○	○
Activity involving cookers	○	○	○
Skiing	○	○	○
Ropes course activities	○	○	○
Rugby	○	○	○
Netball	○	○	○

9. Have injuries in your school associated with outdoor education and recreation resulted in less outdoor education and recreation through reduced programming?

Choose one of the following answers

- ○ Yes
- ○ No
- ○ Don't know

10. Have reported outdoor education incidents in recent years (such as the Mangatepopo canyoning tragedy) been responsible for reduced outdoor education/recreation programming in your school?

Choose one of the following answers

- ○ Yes
- ○ No
- ○ Don't know

11. If you answered yes, please explain the school's reasons?

12. Please comment on any issues relating to the cultural and ethnic backgrounds of your students and school community that, in your opinion, may affect the perception of risk and its effect on participation in outdoor education activities.

Section 2: This section asks for information about the school. Please indicate your response by clic

1. What categories does your school fall into from the options below?

Choose one of the following answers

- ○ Primary
- ○ Intermediate
- ○ Middle
- ○ Area school

Choose one of the following answers

- ○ Private
- ○ Integrated
- ○ Public

2. What decile rating is your school?

Choose one of the following answers

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

3. How would you categories your school? Choose one category only.

Choose one of the following answers

○ Inner city ○ Suburban ○ Small town ○ Rural ○ Other

4. Which Island is your school in?

Choose one of the following answers

○ North Island ○ South Island

5. How many pupils does your school have?

Choose one of the following answers

○ <100 ○ 101-200 ○ 201-300 ○ 301-400 ○ 401-500 ○ 501-600 ○ 601-700 ○ 700+

6. What is the approximate ethnic makeup of your school (Total=100%)?

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
New Zealand European	○	○	○	○	○	○	○	○	○	○
Maori	○	○	○	○	○	○	○	○	○	○
Asian	○	○	○	○	○	○	○	○	○	○
Pacifica	○	○	○	○	○	○	○	○	○	○
European	○	○	○	○	○	○	○	○	○	○
Other	○	○	○	○	○	○	○	○	○	○

Section 1: This section asks you about information about your child's school

1. What categories does your school fall into from the options below?

Choose one of the following answers

- Primary
- Intermediate
- Middle
- Area school

Choose one of the following answers

- Private
- Integrated
- Public

2. What decile rating has your school been given?

Choose one of the following answers

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- Don't know

3. How would you categorise your school?

Choose one of the following answers

- Inner city
- Suburban
- Small town
- Rural
- Other

4. Which Island is your school in?

Choose one of the following answers

- North Island
- South Island

5. How many pupils does your school have?

Choose one of the following answers

- <100
- 101-200
- 201-300
- 301-400
- 401-500
- 501-600
- 601-700
- 700+
- Don't know

SECTION_TWO:_

2. Did your child participate in extracurricular outdoor recreation activities through his/her school (such as through a school outdoor club) in 2009? Omit this question if they were not enrolled in 2009.
Choose one of the following answers

○ Yes ○ No ○ Don't know

3. Please indicate for each outdoor activity below if your child did this activity through their school during 2009? Omit this question if they were not enrolled in 2009.

	My child did this	My child did not do this	Not sure
Day hike	○	○	○
Residential school camp	○	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○	○
Overnight tenting on a trip	○	○	○
Canoeing/kayaking in a pool	○	○	○
Canoeing/kayaking in sheltered waters	○	○	○
Canoeing/kayaking on a river	○	○	○
Science field trip to the bush or natural water feature	○	○	○
Artificial wall climbing or abseiling	○	○	○
Rock climbing or abseiling on a natural cliff-face	○	○	○
Cooking with an open fire	○	○	○
Activity involving cookers	○	○	○
Skiing	○	○	○
Ropes course activities	○	○	○

4. What outdoor activities would you be willing for your child to take part through his/her school in 2010 from an "acceptable risk or unacceptable risk" point of view?

	The risk is acceptable	The risk is unacceptable	not sure
Day hike	○	○	○
Residential school camp	○	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○	○
Overnight tenting on a trip	○	○	○
Canoeing/kayaking in a pool	○	○	○
Canoeing/kayaking in sheltered waters	○	○	○
Canoeing/kayaking on a river	○	○	○
Science field trip to the bush or natural water feature	○	○	○
Artificial wall climbing or abseiling	○	○	○
Rock climbing or abseiling on a natural cliff-face	○	○	○
Cooking with an open fire	○	○	○
Activity involving cookers	○	○	○
Skiing	○	○	○
Ropes course activities	○	○	○

5. For each of the activities below choose a level of risk that equates most closely with risk of serious harm in your perception for students doing the activity under qualified supervision.
Serious harm = Requiring hospitalisation due to broken bones, or concussion, or hypothermia, etc.

	No risk	Very low	Low	Moderate	High	Very high risk	Not sure
Day hike	○	○	○	○	○	○	○
Residential school camp	○	○	○	○	○	○	○
Trips to remote places (2+ hours walk to vehicle access)	○	○	○	○	○	○	○
Overnight tenting on a trip	○	○	○	○	○	○	○
Canoeing/kayaking in a pool	○	○	○	○	○	○	○
Canoeing/kayaking in sheltered waters	○	○	○	○	○	○	○
Canoeing/kayaking on a river	○	○	○	○	○	○	○
Science field trip to the bush or natural water feature	○	○	○	○	○	○	○
Artificial wall climbing or abseiling	○	○	○	○	○	○	○
Rock climbing or abseiling on a natural cliff-face	○	○	○	○	○	○	○
Cooking with an open fire	○	○	○	○	○	○	○
Activity involving cookers	○	○	○	○	○	○	○
Skiing	○	○	○	○	○	○	○
Ropes course activities	○	○	○	○	○	○	○
Rugby	○	○	○	○	○	○	○
Netball	○	○	○	○	○	○	○

6. I think my child's school has an attitude toward safety in outdoor education/recreation that is?

Choose one of the following answers

- ○ **Much more safe than I think is necessary**
- ○ **More safe than I think is necessary**
- ○ **About right**
- ○ **Less safe than I think is necessary**
- ○ **Much less safe than I think is necessary**
- ○ **Not sure**

7. Have you ever withheld consent for your child to participate in an outdoor education activity because of the risk of harm?

Choose one of the following answers

○ **Yes** ○ **No**

8. If you answered Yes please explain the circumstances and your reasons.

9. Have you ever not given consent for your child to participate in an outdoor education activity as a result of outdoor education incidents in recent years (such as the Mangatepopo canyoning tragedy) as reported in the media?

Choose one of the following answers

○ **Yes** ○ **No** ○ **Don't know**

10. How important do you think outdoor education/recreation experiences are for the learning and development of your child at this time?

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ Don't know

11. If you value outdoor education/recreation experiences what do you consider to be the key benefit for your child?

12. Please comment on any issues relating to the cultural/ethnic background of your family that you feel influences their potential involvement in outdoor education?

13. Group questions:

Please indicate the importance of the factors below in terms of deciding whether to allow or not allow your child to participate or not participate in an outdoor education camp/fieldtrip.

Cost of the fieldtrip

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Concerns about physical harm to your child

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Concerns about emotional harm to your child

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Knowledge of the individual/s who will be supervising your child

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Knowledge of the nature of the activities

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

What your child will gain from the experience

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Being informed of the safety provisions arranged for the fieldtrip

Choose one of the following answers

- ○ not important
- ○ slightly important
- ○ quite important
- ○ greatly important
- ○ don't know

Section 3: This section asks you about information about yourself and your children.

1. Please indicate whether you are male or female.

Choose one of the following answers

○ Male ○ Female

2. Please indicate the sex of your child.
Choose one of the following answers

○ Male ○ Female

3. Please indicate the age of your child.
Choose one of the following answers

○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○ 13+

4. Please indicate your age group.

Choose one of the following answers

○ 20-29 yrs ○ 30-39 yrs ○ 40-49 yrs ○ 50-59 yrs ○ 60 & older

5. Please indicate the highest educational qualification that you have obtained:

Choose one of the following answers

- ○ High school
- ○ Post school certificate/diploma
- ○ University undergraduate degree
- ○ University postgraduate qualification
- ○ Other post high school qualification
- ○ Other (please specify):

6. Please indicate your ethnicity

Choose one of the following answers

- ○ New Zealand European
- ○ Maori
- ○ Asian
- ○ Pacifica
- ○ European
- ○ Other (please state):

7. Do you do outdoor recreation activities in your leisure time?

Choose one of the following answers

- ○ Yes
- ○ No

8. Please indicate your household income before tax (gross income).
Choose one of the following answers

- ○ $1 - $20,000
- ○ $20,001 - $40,000
- ○ $40,001 - $60,000
- ○ $60,001 - $80,000
- ○ $80,001 - $100,000
- ○ $100,001 - $120,000
- ○ $120,001 - $140,000
- ○ $120,000 +

Appendix 4: Supporting Tables and Figures

Sample Characteristics and Representativeness

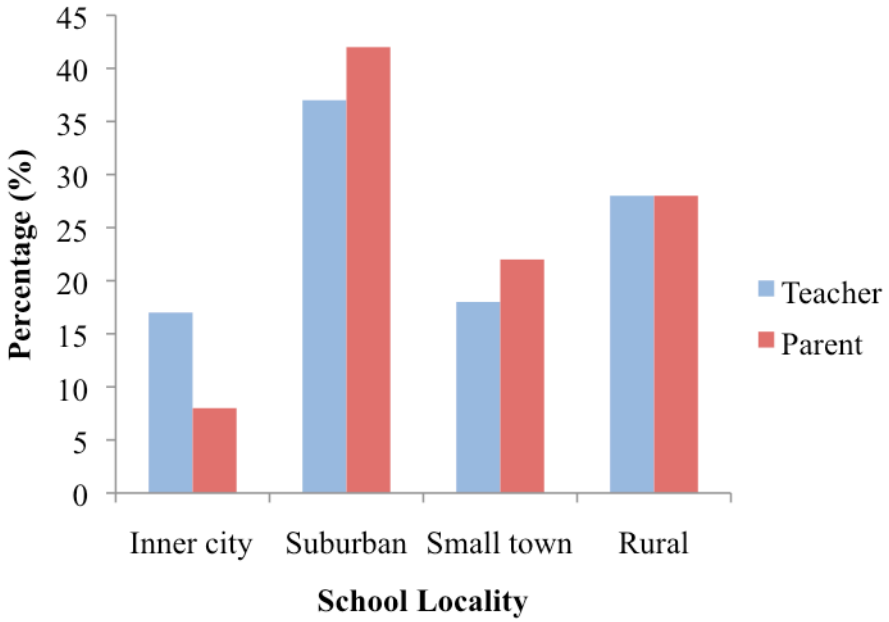

Figure A *Distribution Comparison of Samples by School Locality.*

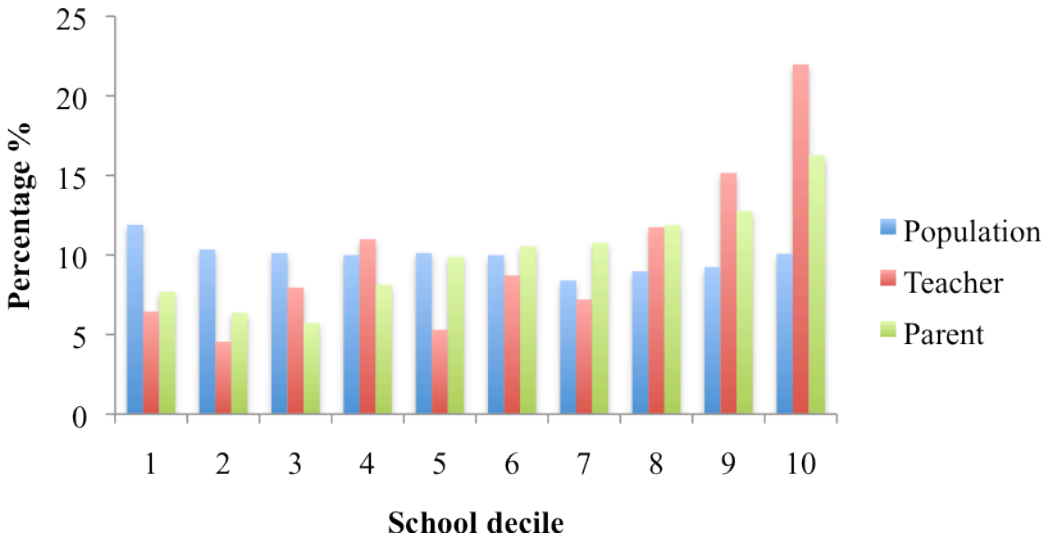

Figure B *Representativeness of Samples by Decile Rating.*

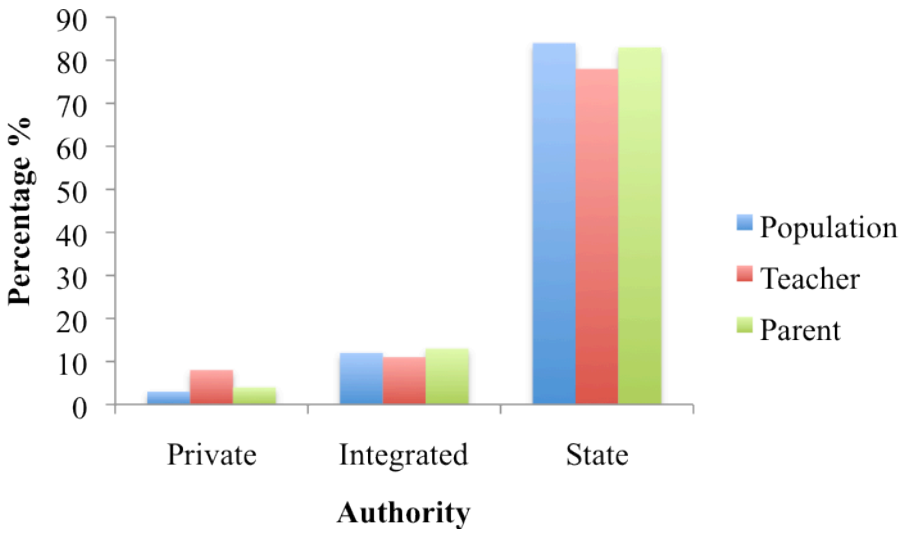

Figure C *Representativeness of Samples by School Authority.*

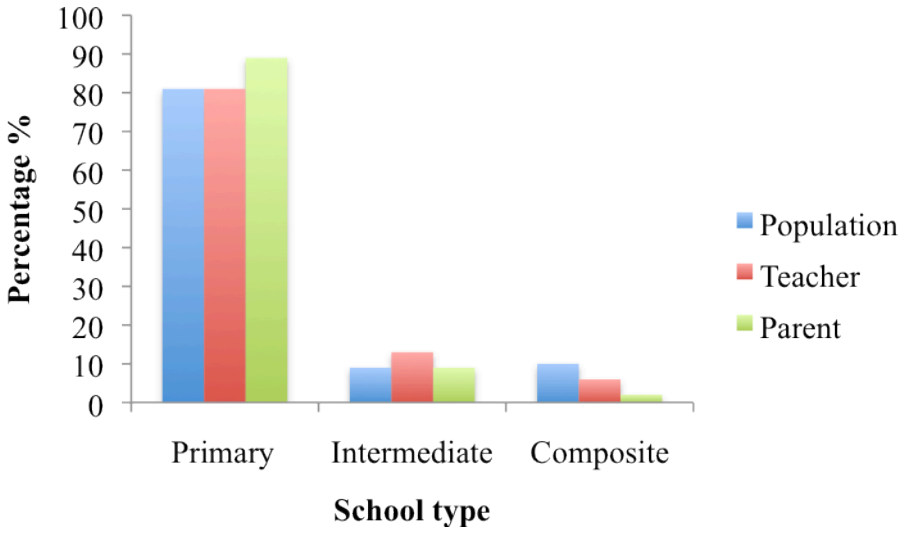

Figure D *Representativeness of Samples by School Type.*

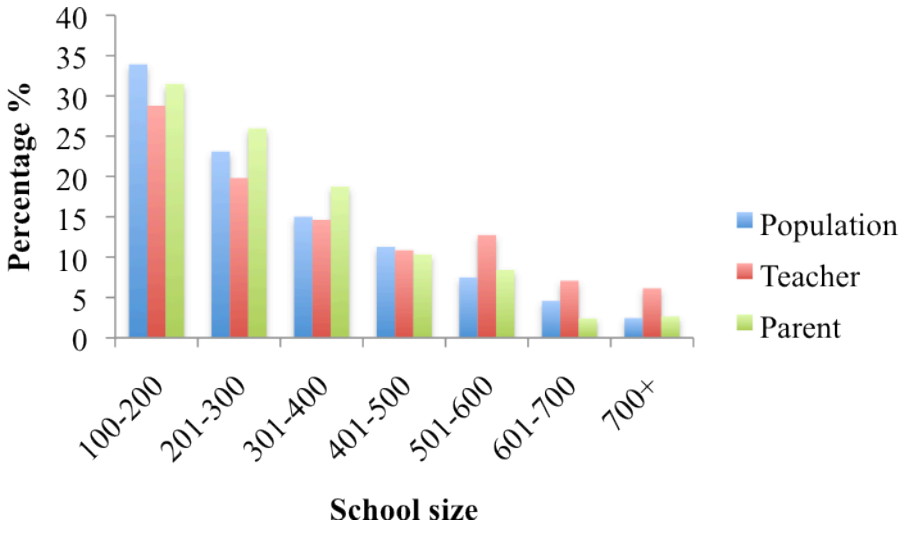

Figure E *Distribution Comparison of Samples by School Size.*

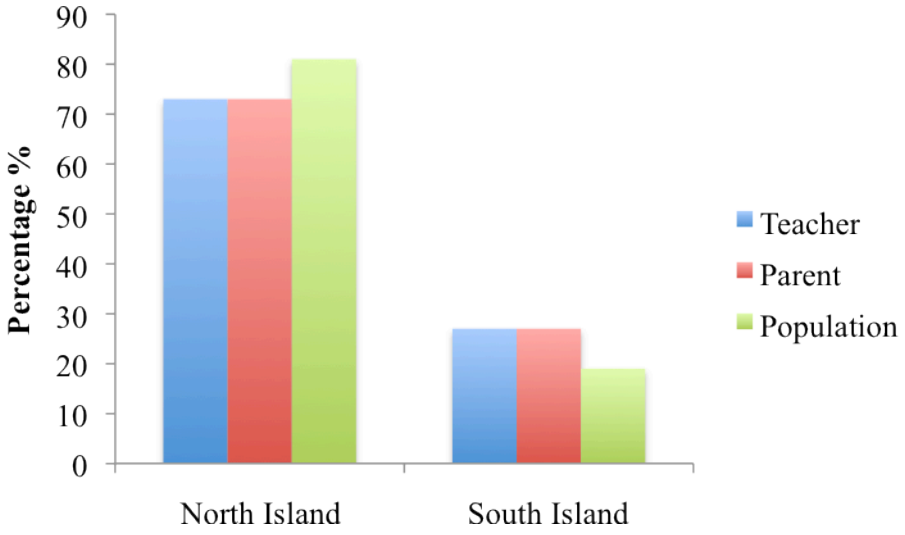

Figure F *Representativeness of Samples by Island.*

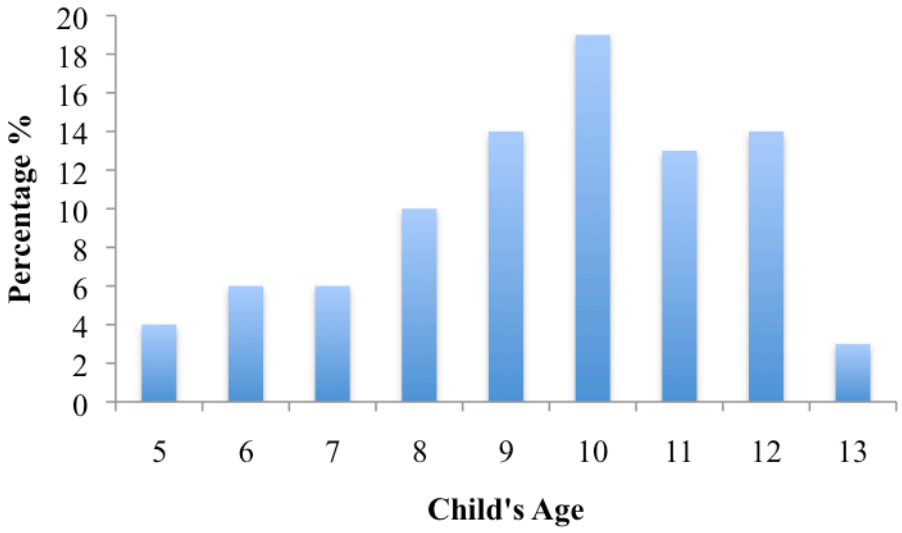

Figure G *Distribution of Sample by Child Age.*

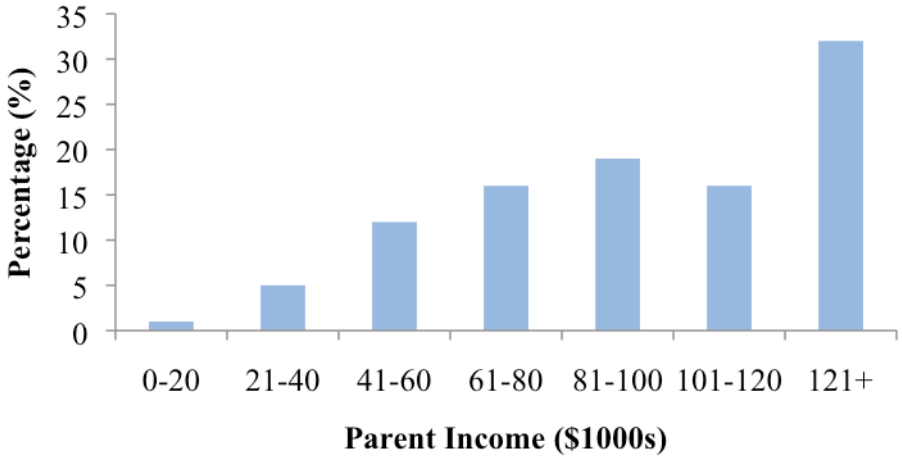

Figure H *Distribution of Sample by Parent Income.*

Additional Tables and Figures Supporting Statistical Analysis

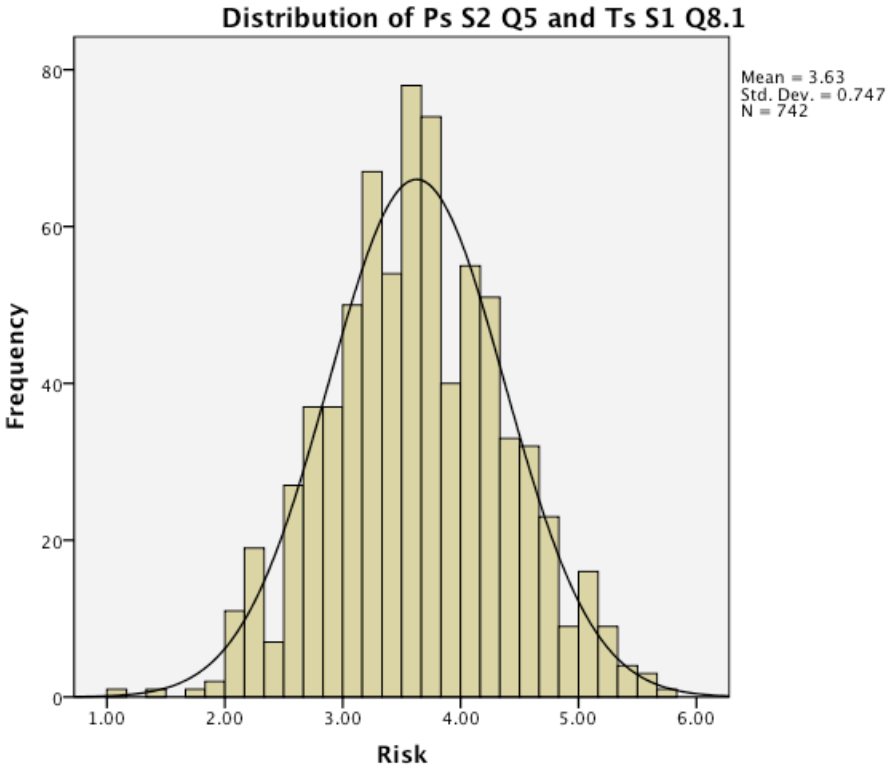

Figure I *Histogram Showing Distribution of Responses to Pq S2 Q5 and Tq S1 Q8.1.*

Table A *Mann-Whitney U Test for Low Decile Teacher and High Decile Teacher Risk Rating of Outdoor Activities.*

	Teacher group	n	Mean rank	z	Sig.
Day hike	Low	49	84	-0.693	0.488
	High	127	90		
Residential school camp	Low	47	83	-0.493	0.622
	High	124	87		
Trips to remote places (2+ hours walk to vehicle access)	Low	50	90	-0.568	0.862
	High	127	89		
Overnight tenting on a trip	Low	49	93	-0.813	0.416
	High	127	87		
Canoeing/kayaking in a pool	Low	49	89	-0.322	0.748
	High	125	87		
Canoeing/kayaking in sheltered waters	Low	48	93	-0.732	0.464
	High	128	87		
Canoeing/kayaking on a river	Low	46	84	-0.504	0.614
	High	126	88		
Science field trip to the bush or natural water feature	Low	49	92	-0.530	0.596
	High	128	88		
Artificial wall climbing or abseiling	Low	48	85	-0.488	0.625
	High	127	89		
Rock climbing or abseiling on a natural cliff-face	Low	47	92	-0.850	0.395
	High	126	85		
Cooking with an open fire	Low	50	90	-0.301	0.763
	High	125	87		
Activity involving cookers	Low	50	92	-0.826	0.409
	High	124	86		
Skiing	Low	47	85	-0.070	0.945
	High	122	85		
Ropes course activities	Low	48	82	-0.959	0.338
	High	127	90		
Rugby	Low	50	85	-0.792	0.428
	High	128	91		
Netball	Low	50	86	-0.491	0.623
	High	127	90		

Table B *Mean Ranks for Low Decile Teacher and High Decile Teacher Aggregated ''Acceptable'' Responses.*

	Low and high decile	n	Mean rank
Overall	Low	49	78
	High	129	93
	Total	178	

Table C *Mann-Whitney U Test for Low Decile Teacher and High Decile Teacher Aggregated ''Acceptable'' Responses.*

	Overall
Mann-Whitney U	2621
z	-1.785
Sig.	0.074

Table D *Mann-Whitney U Test for North Is. Teacher and South Is. Teacher Risk Rating of Outdoor Activities.*

	Teacher group	n	Mean rank	z	Sig.
Day hike	North Is	186	129	-0.284	0.777
	South Is	70	126		
Residential school camp	North Is	186	130	-0.900	0.368
	South Is	68	121		
Trips to remote places (2+ hours to vehicle access)	North Is	188	134	-1.554	0.120
	South Is	70	118		
Overnight tenting on a trip	North Is	188	132	-0.828	0.408
	South Is	70	124		
Canoeing/kayaking in a pool	North Is	186	127	-0.419	0.675
	South Is	69	131		
Canoeing/kayaking in sheltered waters	North Is	188	130	-0.335	0.738
	South Is	70	127		
Canoeing/kayaking on a river	North Is	187	124	-0.823	0.411
	South Is	65	132		
Science field trip to the bush or natural water feature	North Is	191	132	-0.452	0.651
	South Is	71	128		
Artificial wall climbing or abseiling	North Is	188	124	-1.800	0.072
	South Is	68	141		
Rock climbing or abseiling on a natural cliff-face	North Is	185	126	-0.201	0.841
	South Is	68	128		
Cooking with an open fire	North Is	188	128	-0.110	0.913
	South Is	68	129		
Activity involving cookers	North Is	188	126	-0.915	0.360
	South Is	68	135		
Skiing	North Is	181	128	-0.984	0.325
	South Is	68	118		
Ropes course activities	North Is	187	128	-0.182	0.856
	South Is	69	130		
Rugby	North Is	192	127	-1.751	0.080
	South Is	71	145		
Netball	North Is	192	127	-1.554	0.120
	South Is	70	143		

Table E *Mann-Whitney U Test for North Is. Parent and South Is. Parent Risk Rating of Outdoor Activities.*

	Parent group	n	Mean rank	z	Sig.
Day hike	North Is	331	127	-0.055	0.956
	South Is	122	128		
Residential school camp	North Is	133	128	-0.352	0.725
	South Is	121	123		
Trips to remote places (2+ hours walk to vehicle access)	North Is	337	231	-0.075	0.940
	South Is	124	232		
Overnight tenting on a trip	North Is	338	233	-0.321	0.749
	South Is	124	228		
Canoeing/kayaking in a pool	North Is	336	227	-0.800	0.423
	South Is	123	238		
Canoeing/kayaking in sheltered waters	North Is	336	225	-1.401	0.161
	South Is	122	243		
Canoeing/kayaking on a river	North Is	336	225	-1.427	0.154
	South Is	124	244		
Science field trip to the bush or natural water feature	North Is	337	236	-1.407	0.159
	South Is	124	217		
Artificial wall climbing or abseiling	North Is	334	228	-0.002	0.998
	South Is	122	229		
Rock climbing or abseiling on a natural cliff-face	North Is	335	229	-0.153	0.878
	South Is	123	231		
Cooking with an open fire	North Is	335	232	-0.737	0.461
	South Is	122	122		
Activity involving cookers	North Is	335	232	-0.673	0.501
	South Is	123	223		
Skiing	North Is	334	239	-3.132	0.002
	South Is	121	198		
Ropes course activities	North Is	333	225	-0.795	0.427
	South Is	122	236		
Rugby	North Is	333	229	-0.419	0.675
	South Is	122	223		
Netball	North Is	335	227	-0.275	0.784
	South Is	120	231		