Taking the Plunge:
Assessing and Managing Risks in Adventure Tourism in Lower North Island New Zealand

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Abstract

This thesis seeks to discover the nature of risks in adventure tourism and how these risks can be managed effectively. There are three major sources of risk i.e. the natural environment, people and equipment. Risk results in consequences. These are usually undesirable events such as drownings. Several incidents have occurred in the recent past prompting negative publicity.

To keep incidents at a minimum, several regulatory measures exist for example codes of practice, insurance, risk management plans, legislation, certification and safety standards. These methods can be administered by government, the industry or by businesses themselves. Currently, a combination of the latter two modes of implementation (i.e. industry driven self-regulation) is preferred.

A Lower North Island case study using three actives (i.e. whitewater rafting, bungy jumping and jetboating) is used to examine the topic. Operator perceptions of risk are examined, management practices identified and a package for risk management developed. An estimation of the riskiness of the three case study activities is also possible. All businesses interviewed have some form of risk management in place. Operators desire a three tier division of responsibility for risk management including themselves, the government and an industry body.

ACKNOWLEDGMENTS

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He didn't get bruised

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Edwards, R (1997)

Adventure

ROTORUA
feel the spirit
Manaakitanga

Chapter 1: Introducing the Issues

1.1 Thesis Aim and Objectives

The issue of risk in adventure tourism does not seem to be well-researched. There appear to be few relevant academic papers, theses or other literature. Frequent accidents, many serious, media coverage and the regulation currently being considered for some aquatic recreation activities makes this a timely topic. In an area characterised by freedom, the prospect of restrictions via regulation raises interesting issues.

This thesis aims to assess the risks present in adventure tourism and to examine methods of management from the perspective of the operators of adventure businesses. These aims are examined within the context of the Lower North Island where three adventure activities are investigated. These activities are whitewater rafting, bungy jumping and jetboating.

The thesis aims are pursued through four broad objectives. These are:

Objective 1: To assess the risks present in adventure tourism in New Zealand

Objective 2: To examine attitudes to risk within the adventure tourism industry

Objective 3: To identify how risks are currently managed within the adventure tourism industry

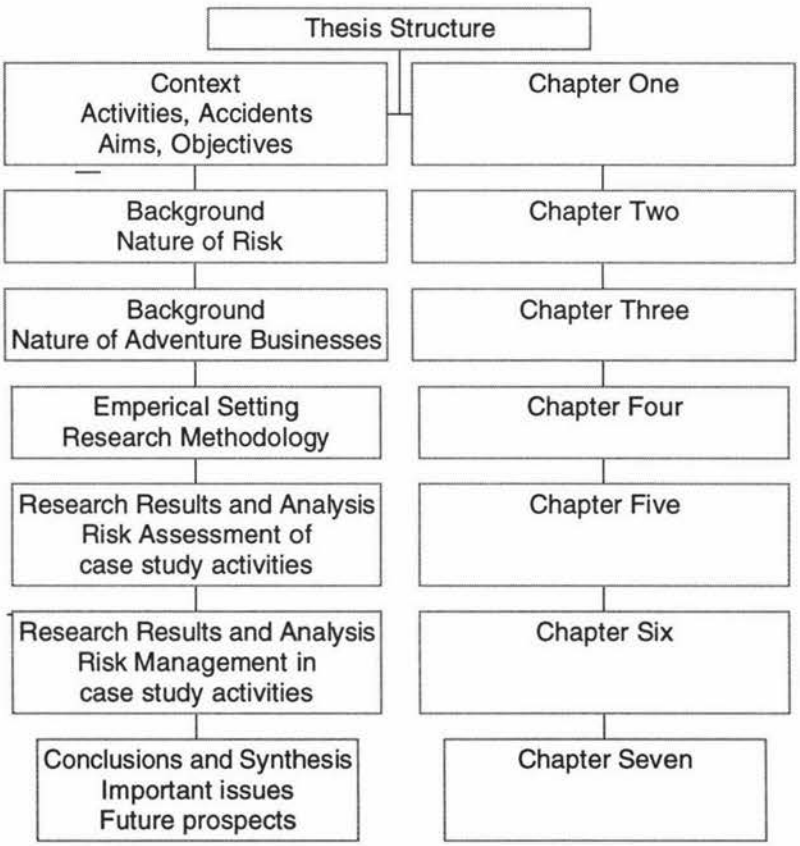
Objective 4: To propose an approach to risk management within the adventure tourism industry in New Zealand

1.2 Thesis Structure

The remainder of *Chapter One* introduces the topic of adventure tourism in the New Zealand context. It considers some key components of adventure tourism including the nature of adventure activities, the image and reputation of the

industry, and concern regarding issues of safety within the industry. The thesis structure is illustrated in Figure 1.1. Following the introduction, the character of risk and uncertainty is explained in *Chapter Two*. *Chapter Three* looks at the business of adventure tourism in New Zealand. The research from the Lower North Island case study is found in the next three chapters. The methodology used to undertake the field study is explained in *Chapter Four*. *Chapter Five* looks at the nature of physical risk in the three case study activities, while their risk management practices, perceptions and preferences are examined in *Chapter Six*. Finally, *Chapter Seven* closes off the thesis with conclusions and suggestions on the future of the adventure tourism industry in New Zealand.

Figure 1.1: Thesis Structure



1.3 Adventurous New Zealand

'Green' or 'alternative tourism' are current buzz words in the tourism industry. Adventure tourism is part of this new wave distinguishing individual adventurers from mass tourism. According to the Ministry of Commerce, "adventure tourism is defined as commercially operated activities involving a combination of adventure

and excitement pursued in an outdoor environment" (Ministry of Commerce, 1996, 1). An estimated 70 per cent of international visitors take part in some form of adventure activity during their holiday in New Zealand (Gabites, 1997, 1). The statistics do not tell it all, however, as there are two different types of adventure tourists. Soft adventure tourists "prefer comfortable accommodation and are therefore more likely to stay in established destination areas where they can respond to marketing and other researchers" (Perkins and Cushman, 1998, 274). Hard adventure tourists prefer to blend into their destination communities and undertake activities in remote locations away from the gaze of researchers.

The adventure tourism market has been growing steadily especially since the 1980s. Campaigns have been developed specifically intending to highlight adventure tourism in New Zealand. On the Australian market, the "New Zealand, A Real Slice Of Heaven" campaign aims to "shift consumer perception of New Zealand as a passive holiday experience to an active replenishing holiday option" (New Zealand Tourism Board, 1996, 19). Likewise, "the New Zealand Tourism Board's Nordic strategy aims to position New Zealand as an active adventure holiday destination" (New Zealand Tourism Board, 1996, 32). Typical adventure tourists are between 20-35 years, with both sexes well represented, and likely to be overseas visitors. New Zealanders normally consider adventure activities too costly, and see them as developed for tourists not locals (Perkins and Cushman, 1998).

1.4 Adventure Activities

Adventure tourism incorporates distinct style of activities. Many are extensions of traditional outdoor pursuits i.e. activities done on air, land or water using mechanised or non-mechanised means of travel (Ford and Blanchard, 1993). These were traditionally used for personal recreation, research, sport or transport and include activities such as ski-touring, parachuting, mountain biking, diving and caving. However, several activities have been developed specifically for their adventure potential, being unusual, sensational and exciting. These include rap-jumping, bungy jumping, and a range of tandem aerial activities such as skydiving, parapenting and hangliding. What differentiates adventure activities from other outdoor activities is the high level of stress or challenge for participants. Advanced

skills, tenacity, courage and stamina are requisites needed to undertake adventure activities successfully (Ford and Blanchard, 1993).

Participation and enthusiasm are increasing within the adventure tourism sector. The current focus is on active tourism as most tourists want to be doing something rather than just seeing things happen around them (Collier and Harraway, 1997). Adventure activities have become one of the more popular ways to achieve this focus. "Part of the attraction of New Zealand as a location is the huge variety of activities available here - a veritable A-Z of Adventure" (Gabites, 1997, 1). Figure 2 is drawn from a variety of sources and gives an idea of the range of adventure activities. Figure 3 shows the location of some of these activities in New Zealand, with some locations renown for particular activities.

1.4 The Adventure Tourism Image

It is not only the adventure activity itself that defines adventure tourism in New Zealand. The adventure tourism image in New Zealand is a mix of obvious and subtle associations. As illustrated in their colourful and exciting brochures, adventure activities are linked to the places in which they are carried out i.e. place association. Place association and promotion are significant to the adventure tourism industry, including being part of the national tourism campaign of doing things 'The New Zealand Way' (Perkins and Cushman, 1998). This campaign seeks to "establish and market a New Zealand personality, with which to attract premium rates for New Zealand goods and services" (ibid., 275). For adventure tourism it conjures up images of things 'young, fresh and experimental' and this has "provided strong cultural as well as economic elements in the growth of adventure tourism" (ibid., 277). There are three significant elements underlying the adventure tourism image in New Zealand namely place, experimentation, thrills (ibid.).

1.5.1 Place

New Zealand is marketed as a clean and green paradise with breath-taking scenery, accommodating adventure activities that do not obviously harm the environment.

Figure 1.2 An A-Z of Adventure Activities in New Zealand

Adventure Activities in New Zealand

* abseiling	* jet sprinting
* aerial flights	* kayaking
* ballooning	* luges
* black water rafting	* mountain biking
* bungy jumping	* mountaineering
* canoeing	* night time bungy
* caving	* parapenting
* cross country skiing	* rap-jumping
* downhill skiing	* river sledging
* flying foxes	* rock climbing
* four wheel drive tours	* ski touring
* glacier walking	* surfing
* gliding	* tandem hangliding
* helicopter bungy	* tandem parachuting
* heli-rafting	* tramping
* heli-skiing	* unimog tours
* horse trekking	* whale watching
* jet skiing	* white water rafting
* jetboating	* zorbing

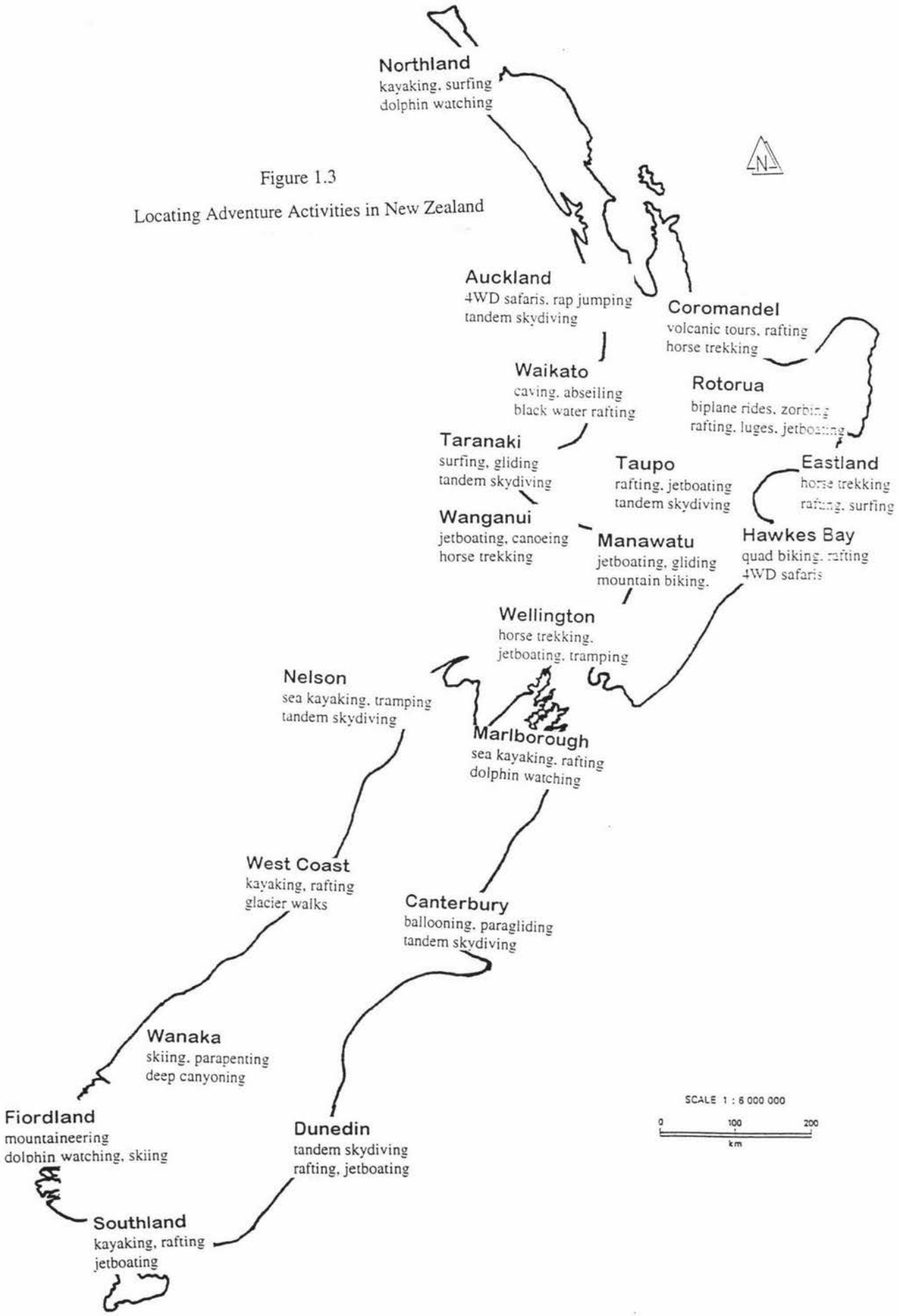
Source: Tourism brochures, 1998

"Spectacular scenery is made even more spectacular by participation in, or watching the participation of others in, adventurous pursuits in places of natural or historic significance" (Perkins and Cushman, 1998, 278).

Hence, adventure activities are remembered both for the activity and the place in which they operate (Figure 1.4). For example, jetboating on the Shotover river

Figure 1.3

Locating Adventure Activities in New Zealand



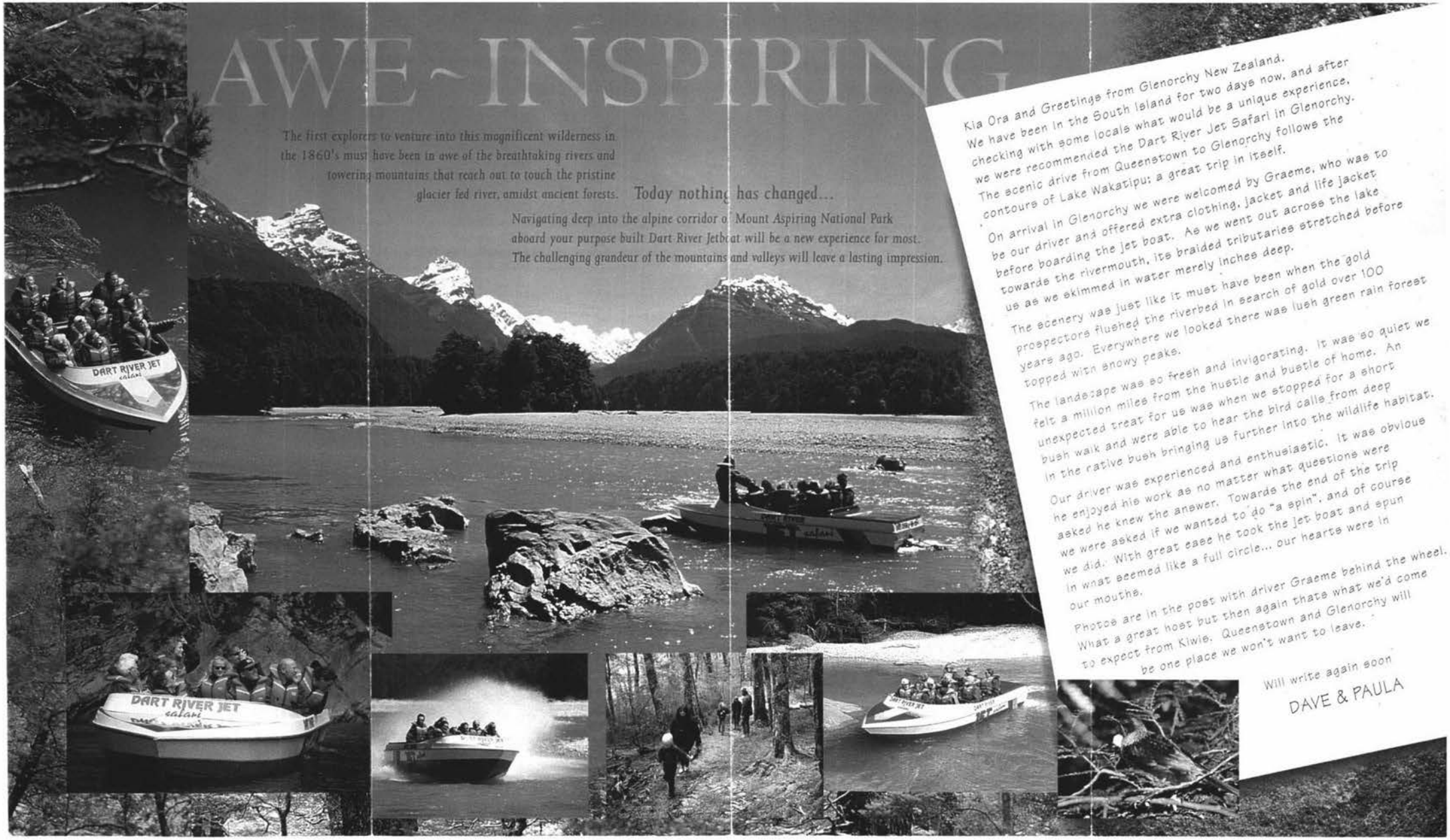


Figure 1.4 The Dart River Jet Trademark

combines an exciting boat ride with rugged canyon scenery and rich gold-mining history. In addition to emphasising the beauty of natural environment, adventure activities convey a sense of overcoming nature's challenges; taming the wild through technology and sheer human will and courage. Yet, this may be an incomplete view of place association. On the other hand, New Zealand weather conditions can make some areas unpleasant and some operators work in less distinctive landscapes (ibid.). Furthermore, place association can be seen to promote the major cultural power and thus adventure tourism is "exclusively the product of the hegemonic white (Pakeha)" (ibid., 280).

1.5.2 Experimentation

Innovation and experimentation are essential for the adventure tourism industry. There is "continual experimentation with bigger, better and more exciting thrills in the outdoors environment" (Perkins and Cushman, 1998, 282). Doing new things or accomplishing old things in a new way is imbedded in the New Zealand psyche and evident in the types and variety of adventure activities on the market. The A. J. Hackett bungy-jumping enterprise grew out of Hackett's desire to perform a safer bungy jump and his development of a safer harness system after watching the Oxford University Dangerous Sports Club jump off the San Francisco Golden Gate Bridge in 1986 (ibid.). Experimentation is supposed to lead to the progressive development of more activities. However, experimentation increases concerns about carrying capacity in sensitive environments. Will more natural areas be impinged upon for the purposes of satisfying visitors? How many people can be taken into these natural areas and what sorts of activities should can be adequately located there? How will operators make these wilder areas suitable for participants? Experimentation is beneficial for the industry, but the control of its consequences is another matter.

1.5.3 Thrills

One of the archetypal images of adventure tourism in New Zealand is screaming participants on an activity, portraying the thrills these activities offer. These thrills challenge human will power, but should be fun at the same time. The language of theme-park rides is used to describe the sensations of an adventure activity i.e.

rollercoaster rides, adrenaline rush, spiralling and exhilaration (Perkins and Cushman, 1998). However, not all activities meet the expectations of participants; the same activity can be considered along the spectrum from unexciting to terrifying by different participants. Moreover, these activities harbour the possibility of accidents and thus the need for safety measures.

"New Zealanders have learned to accept that death or injury is part of outdoor life .....[and] ..... occasionally die when mountaineering, tramping, and hunting .....[but for a tourist to do the same]..... is less easy to accept" (Perkins and Cushman, 1998, 281).

The marketability of adventure tourism depends on its ability to satisfy and thrill within relatively safe circumstances. Unfortunately, this has not always been the case.

1.6 Rising Concerns

Safety concerns came to the fore in the 1980s and continued into the 1990s as a result of a number of serious accidents and fatalities (Figures 1.5-1.7). A range of activities have been affected, including ballooning, whitewater rafting, jetboating, tandem parachuting, kayaking and bungy jumping. Negative publicity is damaging to the industry as a whole and particularly to individual operators.

Concern is as much directed towards recklessness as unexpected circumstances. Both have a high chance of ruining an outing, leading to accidents of varying degrees of seriousness. Most concern is understandably directed at cases which have involved death. Their causes and circumstances have been different, but in a number of cases may have been preventable if appropriate measures had been taken to assess and manage the risks.

Three case studies of serious accidents illustrate the potential risks, suggested causal factors and harms possible during adventure activity outings. Jointly these cases illustrate a range of things that can go wrong during an outing and that neither

Figure 1.5 Rafting Incident on the Shotover River (1994)

Activity: Whitewater rafting

Location: Shotover River, Queenstown

Date: February 1994

The outing: A group taken down the Shotover river includes seven female American travel agents, David Vietmeyer (a Valuation New Zealand manager) and others. The river was high and claimed one life less than a fortnight before on the same stretch when rafting. None of the participants were told either fact before the trip. During the trip the women were thrown from the raft on the Mother rapid and some held under water momentarily by the water pressure. One of the women broke her wrist during the incident. They were scared for the remainder of the trip. After the outing the guides joked about the trip and said it was a good one. There was no group therapy given. The travel agents crossed Queenstown off their list of recommended places for their 5000 plus clientele citing that rafting standards were not good enough.

Aftermath: A meeting took place with the Queenstown Lakes District Council, the Maritime Safety Authority and the rafting operators. The meeting's attitude was that the women were pathetic and should not have gone rafting. The letter from 42 year old Mr Vietmeyer, an active sportsman, who was also scared during the outing was not mentioned at the meeting.

Risk factors: The women who participated were in their late 20s and well travelled. Most of them were healthy and strong. Ideally they were the type of people targeted by the adventure tourism industry. Therefore, they had every reason to participate in the activity as opposed to the views of the operators. One woman was overweight and refused to go, but was encouraged by the guides. One guide admitted to a passenger that he was doing two trips per day, seven days a week and was burnt out. Moreover, the location was unsafe as the river was too high for safely manoeuvring the rafts.

Source: Mark McLauchlan, North and South Magazine, Dec. 1995, 80

Figure 1.6 Mountaineering Incident on Mt. Ruapehu (1997)

Activity: Alpine mountaineering

Location: Mt. Ruapehu

Date: July 1997

The outing: The outing was held by the Auckland University Rock and Alpine Club (URAC) as a mountain skills course. The course had five instructors and 20 students in attendance. On the third day of the outing, the weather on the mountain was poor enough to keep them indoors for the morning. In the afternoon they went outside to undertake group activities as the weather had not worsened. One group of seven went to climb the Pinnacle Ridge. An avalanche hit as three of them reached the top (four turned back after having problems with fogging glasses). Hamish Coulter and Steven Court, the president and secretary respectively of AURAC died in the avalanche. The third climber, David Hall, survived with a broken ankle.

Aftermath: The case was brought before the Taumaruni Coroner Court. The Corner found that the weather conditions were poor, but not extremely bad. Therefore it was reasonable for the group to climb Pinnacle Ridge, especially since the instructors present had a good knowledge of possible avalanche danger and had discussed it beforehand. In hindsight, the signs of avalanche danger were present e.g. new snow over an ice layer, but they were overlooked by the group. Better risk and crisis management was suggested as well as more training (e.g. avalanche awareness courses, better monitoring of weather conditions and use of proper equipment such as avalanche receivers which none of the group carried).

Risk factors: Inadequate risk and crisis management, a lack clear leadership, failure to check a weather forecast and potential avalanche hazards, failure to wear avalanche transceivers and the fact that none of the instructors had attended an avalanche field day.

Source: Sally Woodfield, New Zealand Wilderness, Jan. 1998, 14-15.

Figure 1.7 Rafting Fatality on the Shotover River (1994)

Activity: Whitewater rafting

Location: Shotover River, Queenstown

Date: Nov. 28, 1994

The outing: Three of the four Queenstown rafting companies cancelled expeditions due to high river flow. Kawaru rafts sent two rafts down the river in the afternoon. The rate of the river increased as expected from 109 cubic metres (cumecs) per second at midday to 134 cumecs after 4 p.m. The rafts hit the Jaws rapid and several fell out including Sean Farrell. Others made it to shore below the rapid. Farrell instead got tossed about by the rapids and was washed ashore a kilometre later. He had dry-drowned i.e. asphyxiated when his throat spasmed shut after water splashed on his larynx.

Aftermath: The first legal case was taken against the rafting industry. Kawaru Rafts, the two rafting guides and the company director were charged with 24 counts of negligent or reckless operation of a vessel and endangering the lives of passengers. Charges were brought by the Maritime Safety Authority (MSA) against the men under the Shipping and Seamen Act. The charges concern only with recklessness causing danger to people and not with the death of Farrell. Farrell's death is only significant in that it brought the guides' behaviour to the attention of the MSA.

Risk factors: The Shotover River was running high and expected to rise quickly in the afternoon. Snow was melting rapidly in the hills in the warm sunshine and heavy rain was expected.

Source: Mark McLauchlan, North and South Magazine, Dec. 1995, 74

the experienced nor uninitiated is exempt from these situations. Adventure activities, though a worthwhile means of enjoyment, can have potentially harmful consequences given the circumstances.

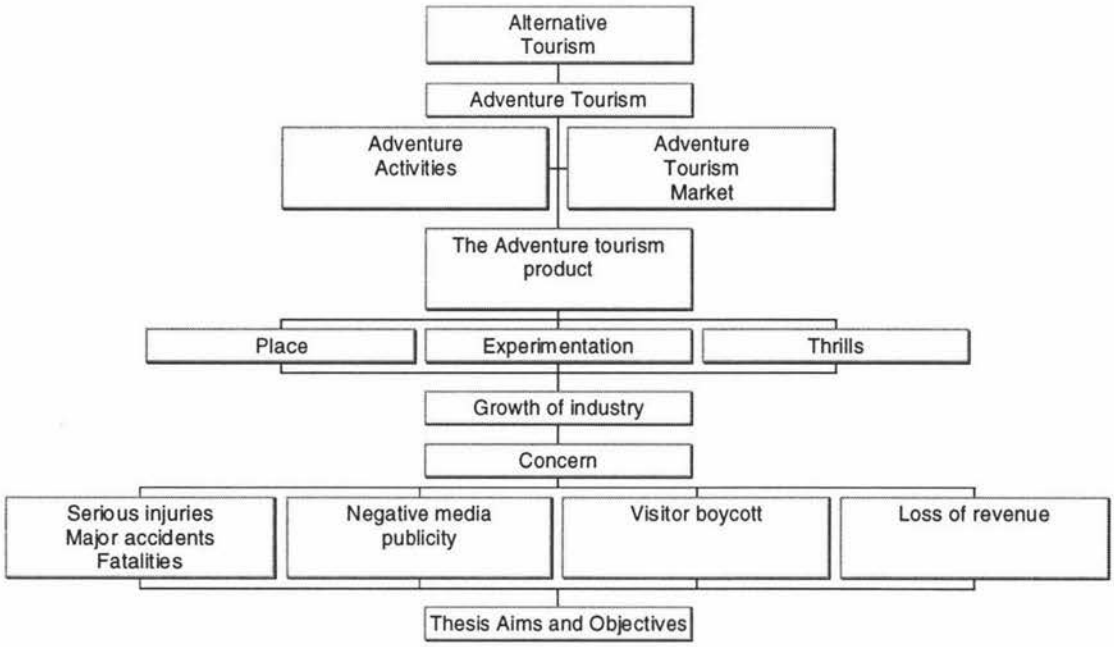
Concern over accidents is increasing within the industry (Appendix 1). Minor accidents are precursors to serious incidents. These need to be examined, but are rarely reported. Serious accidents involving injury and death are more obvious and are especially detrimental to the future of the industry. Managing the risks which give rise to these accidents can be difficult. Some may be unavoidable when working with the forces of nature. Others are more controllable and should be managed to ensure safety, but at the same time deliver the expected thrills. Risk management instruments may be useful and whether or not they should be used is no longer an issue given continuing incidents and negative publicity. However, what may be needed is the right mix of instruments for a given type of activity in a particular location.

1.7 Setting the Stage

The investigation into the intricate relationship between risk and outdoor recreation has begun in Chapter One (Figure 1.8). A product of this relationship is the adventure activity. Adventure activities have been developed for possibly every media (i.e. land, air, water). Collectively, these activities form the basis of the adventure tourism industry. Currently, adventure tourism is an important part of the New Zealand tourism scene, and steadily growing. Its growth has helped both to develop its image, as well as to further encourage participation. The adventure tourism image has three components i.e. an activity done in a natural setting, extensive experimentation to innovate activities and a high thrill quota. A certain mix of skills and attitude is needed to successfully undertake an adventure activity. Success can be measured as satisfaction and safe completion of an activity. Sometimes, the latter does not happen. Serious incidents including fatalities have occurred in the past and continue. There is growing concern about incidents, especially those involving overseas visitors.

However, should the concern be targeted to the risks in adventure activities or the management of these activities? With regards to risk, the nature of this elusive concept will be examined in Chapter Two.

Figure 1.8 Linking Risk and Adventure Tourism



Chapter 2: The Character of Risk and Uncertainty

2.1 Introduction

Risks are an inevitable part of life. Dealing with risk is neither straight-forward nor comfortable. In general, humans desire safety to conduct their affairs. The degree of safety desired is another matter. "There is no such thing as absolute safety....: virtually every human activity involves some risk of physical harm" (Spear, R. 1980, 57). However, risk has different connotations depending on whom is asked. Risk perception is based on value judgements. Risks are more noticeable in activities which visibly push the limits as in adventure activities. Such activities challenge the realm of human comfort and thus the 'norm'. The challenge is for operators of adventure businesses to assess and manage risk appropriately.

2.2 The Nature of Risk

Risk is a far-reaching, if ambiguous concept. There is "no technically defined concept of risk [that] can ever capture all of the richness of the ordinary concept" (Norton, 1996, 155). A variety of types of risk can be present in any given situation (Table 1). Risk can be conceived as the potential to lose something of value either

Table 1: Pyle and Gough's Risk Typology

Type of Risk	Significance
Real	determined by future circumstances and that cannot be measured
Predicted	measured by systems models using historical data
Perceived	seen intuitively by individuals or societal groups
Statistical	measured statistically using currently available data
Accepted	judged by society to be acceptable
Acceptable	apparently accept by society e.g. driving a car
Actual	scientifically calculated or experienced (statistical or predicted risk)

Source: Pyle and Gough, 1991

physical, mental, social or financial (New Zealand Mountain Safety Council Inc., 1993). This potential creates an uncertainty in the outcome of pursuing a particular

activity. Uncertainty relates to the "lack of knowledge arising from changes that are difficult to predict or events whose likelihood cannot be accurately predicted" (Pyle and Gough, 1991, 7). This is true in particular with adventure activities. The outcome expected is a peak experience, the pleasurable feelings people experience when they are performing to their physical and sensory potential (New Zealand Mountain Safety Council Inc., 1993). However, an outcome of injury or death is also a possibility if conditions become unstable.

Risk comprises three basic elements. Pyle and Gough (1991, 5) describes these as follows:

(a) a choice of action (including remaining with the status quo)
(b) events that have a probability of occurrence
(c) events associated with outcomes which are often expressed like 'magnitude', 'consequence', 'severity', or 'significance'.

The difficulty in ascertaining the correct conditions surrounding the probability and magnitude of an outcome relate to the character of uncertainty. Uncertainty occurs under four circumstances explained to Pyle and Gough (1991,6):

(a) there is a problem in 'defining the issues',
(b) the probability of an outcome occurring is unknown,
(c) the set of outcomes is unknown; or
(d) the magnitudes of the outcomes are unknown (e.g. how 'significant' is an outcome)

Risk concerns the probability of a particular outcome and the magnitude of that outcome. This becomes identified as a hazard. In the case of outdoor recreation, environmental hazards form an especially significant risk (Table 2).

Table 2: Environmental Hazards in Outdoor Recreation

Hazard Events	Consequences
Weather conditions	Rapid changes in weather, lightning, whiteouts, hail, very high winds.
Temperature-related trauma	Hypothermia, frostbite and other cold injuries, heat exhaustion, heat-stroke.
Sun related trauma	Sunburn, sun blindness, allergic reactions to sunlight
Snow and ice hazards	Deep snow, avalanches, cornices, snow bridges, crevasses, snow and ice falling from trees, thin ice on lakes and streams
Dangerous terrain	Steep slopes, rockfall, falling limbs and snags, brush and vegetation
Water hazards	Floods, high tides, swollen streams, cold water
Altitude	Acute mountain sickness, cerebral edema, high altitude pulmonary edema
Nightfall	Unexpected darkness, inability to negotiate terrain, navigational difficulties
Wildlife	Large predatory, toxic or allergic reactions to bites by rodents and birds, poisonous snakes, spiders, scorpions, and insects
Poisonous plants	Contact irritants and ingestion of poisonous plants

Source: Ford and Blanchard, 1993, 98

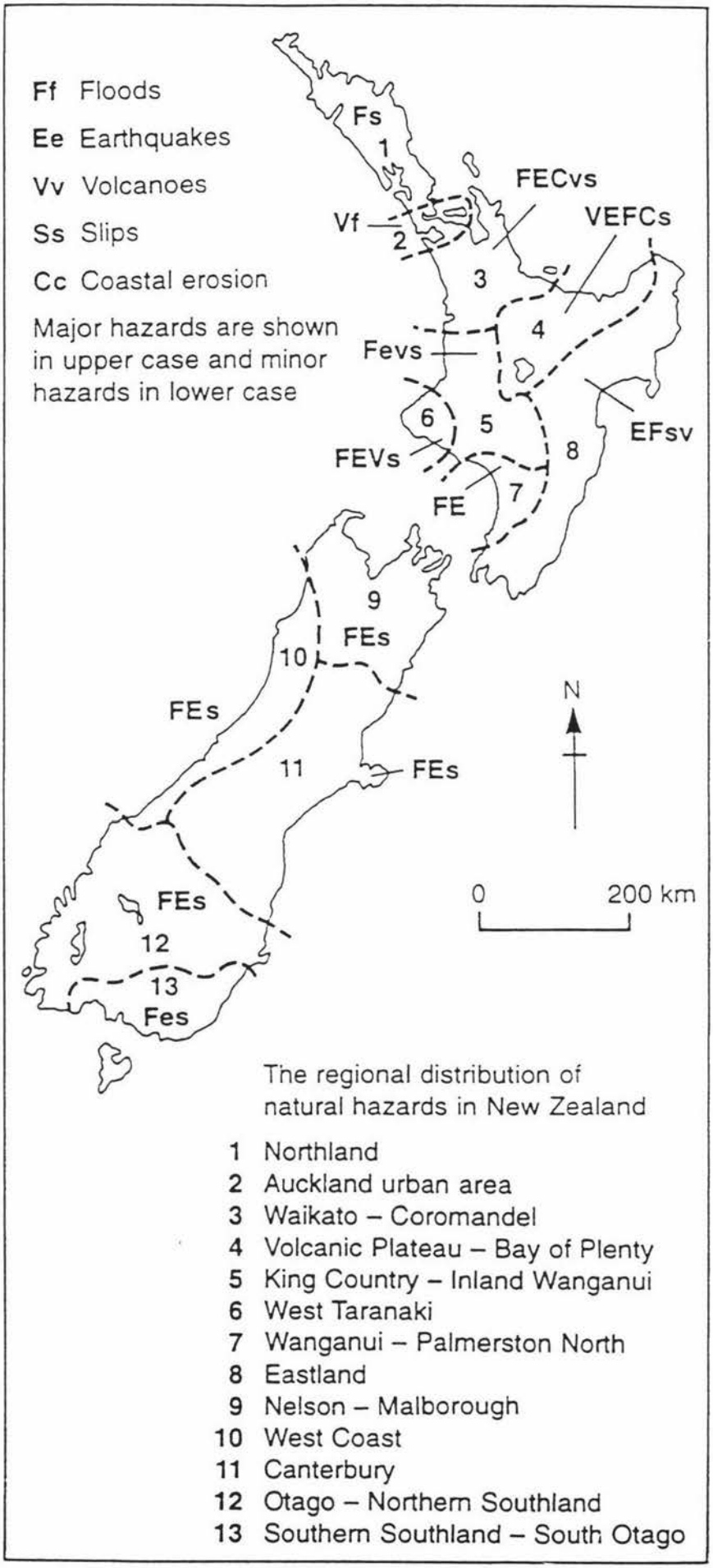
2.3 Physical risks in New Zealand

2.3.1 The Broad Picture

New Zealand is considered to have a high level of physical risk (Figure 2.1). This section draws heavily on the work of Frampton, Chaffey, Hardwick and McNaught (1996). They give the following overview of New Zealand's physical risk:

> "New Zealand is classified as a high risk country in terms of natural hazards. It is slightly larger than the UK with an area of 270,000 km^2 and a population of 3.5 million. The country stretches from 48^0 south to the fringes of the area affected by cyclonic storms at latitude 34^0 south. A

Figure 2.1 New Zealand as a Hazardous Landscape



> broken snow-topped ridge of collision for two tectonic plates, New Zealand is subject to frequent earthquakes and occasional volcanic eruptions. Its eastern coats look across 10,000km^2 of open ocean to Chile and Peru, whose vicinity tectonic activity may at any time trigger fast travelling tsunamis. Landslips are also common in the steep geologically youthful New Zealand landscape. Mount Cook, New Zealand's highest peak, lost 15m from its summit in the 1991 rock avalanche." (Frampton, Chaffey, Hardwick and McNaught, 1996, 111).

2.3.2 Major threats

The three major hazards present in New Zealand are flooding, earthquakes and volcanic eruptions (Table 3). A New Zealand government report finds,

> "floods the most common [hazard], earthquakes potentially the most dangerous and volcanic eruptions the most under-rated natural hazard" (Frampton, Chaffey, Hardwick and McNaught, 1996, 111).

The threat of each hazard is carried through differently. Flooding is usually the result of heavy rainfall. There are four factors which greatly influences rainfall in New Zealand namely,

1. Airflow moisture content
2. Wind speeds
3. Vertical motion as this causes cooling and consequent precipitation
4. Topography which enhances vertical motion

Volcanic activity arises from the tectonic nature of New Zealand. The Pacific ring of fire extends to New Zealand as it is located on the Pacific and Australian crustal plates (Frampton, Chaffey, Hardwick and McNaught, 1996).

Table 3 : Major Natural Hazards in New Zealand

Parameters	Flooding	Earthquakes	Volcanic Activity
Source of threat	Heavy rainfall	Faults in earth's crust	Eruptions, ash, lava, pyroclastic flow
Regularity	Recurrent	Sporadic	Rare
Level of human exposure	About 2.4 million	About 1.8 million	Over 2 million
Area of human exposure	Most inhabited areas	Central zone	Central North Island
Frequency	Over 50 in last 5 years	over 200 per year; on the Richter scale, over half exceed scale 4; 10-20 exceed scale 5; 1 exceeds scale 6; and 1 scale 7 expected every decade	8 fatal events since 1840
Human fatality	On average one life claimed per annum in the last 150 years	289 deaths since 1840	382 deaths since 1840
Usual Effects	building damage; fallen trees; loss of animals; damaged transport network; water pollution;	Infrastructure damage	Respiratory distress; collapsed trees; collapsed buildings; crop destruction; water pollution;
Actual cases and effects	Cyclone Bola (1988) - mass movement; 5 deaths, US$22 million in insurance costs, 5000 made homeless	Hawkes Bay (1931) - magnitude 7.8, 256 deaths, 11,000 evacuated	Mount Tarawera (1886) - Okataina volcanic centre, 153 deaths, 7500km covered by 10cm of ash, collapsed infrastructure, crop destruction, power blackouts

Frampton, Chaffey, Hardwick and McNaught 1996

Earthquakes are also the result of crustal activity. Crustal plates move relative to one another in an effort to release strain built up in the rocks over time. This motion comes from deep within the earth's crust and is measured as magnitude (Richter Scale) and intensity (Mercalli Scale). "New Zealand is very prone to earthquakes with the level of seismic activity similar to California but slightly less than Japan." (Frampton, Chaffey, Hardwick and McNaught, 1996, 114).

2.3.3 Other Threats

A variety of other threats are present in the New Zealand physical environment. These include wind, fire, land instability, fog and temperature extremes.

- Temperature extremes occur at some time in every country. "Extended periods of elevated air temperature (heatwaves) result in great discomfort to most people .... and death to some." (Chapman, 1994, 75). Low temperatures also cause damage to humans. This is usually due to

  "hypothermia or sub-normal body temperature [which] occurs when the core body temperature falls more than about 2^0C below the normal level of 37^0C"..... A person caught in wet clothes.... can develop potentially fatal hypothermia at temperatures above freezing point, especially if there is a high wind velocity [wind chill]" (Chapman, 1994, 75).

- Wind hazards develop as a function of speed, suction pressure and turbulence. Strong wind can result in damaged or collapsed infrastructure. However, most deaths and damage result from flying debris.

  "By international standards, New Zealand is a windy country [with] 11 major civil defence emergencies related to [wind] over 160km/hr in the last 30 years." (Frampton, Chaffey, Hardwick and McNaught, 1996, 112).

- Uncontrolled fire (wildfire) poses a threat, particularly during summer. "Nature [provides] the fuel and fire weather, but deliberate, unintentional, or unthinking misuse of fire by people is the principal factor" (Chapman, 1994, 29).

- Land instability is also a function of nature and human interference. Large volumes of surface materials (rock, ice, snow, water) move at high velocity down slopes resulting in rockfalls, avalanches or landslides. The initial trigger for these movements are either seismic activity, weather events such as heavy rainfall or human activity. (Frampton, Chaffey, Hardwick and McNaught, 1996).

- Fog formation is a natural process resulting from the cooling of warm air moisture as it moves over a cold land surface. Condensation is produced which can thicken from light mist to fog. "Fog presents a serious hazard to all types of visual navigation" (Chapman, 1994, 77). Visibility can be reduced to one meter or less during heavy fog.

2.3.4 Vulnerability

A hazard is only significant as long as it affects a human population, which in New Zealand is composed of residents and overseas visitors. Though New Zealand possesses a hazardous landscape, the number of people affected as the result of an event is minimal.

> "New Zealand averaged three deaths per year from natural hazards this century. Annual losses due to flooding are over US$360 million and earthquake damage averages US$30 million. Yet it is widely recognised as a nation which has extensive hazard management legislation to reduce disaster reduction, effective disaster planning at both local and national levels, and well-funded natural hazard research projects" (Frampton, Chaffey, Hardwick and McNaught, 1996, 111).

People should be warned of impending dangers, but their ability to comprehend and respond will depend on the care taken in delivering the message. Print, audio and visual media disseminate the most information, which should be effective, as for example, "95 per cent of all households have at least one TV and at least as many have a radio" (Frampton, Chaffey, Hardwick and McNaught, 1996, 116). However, the heterogeneity of the population raises concerns. "In 1987 all disaster preparatory material was in English" (Frampton Chaffey, Hardwick and McNaught,

1996, 116). While the non-English speaking populace of New Zealand is small, their need for information is no different.

> "Likewise, there are several groups with disabilities to whom disaster information needs to be conveyed, [with] an estimated 352,000 New Zealanders [in 1991 suffering] from sight, hearing, mobility, verbal, cognitive, or medical functional challenge (Frampton, Chaffey, Hardwick and McNaught, 1996, 116).

Only one-third of New Zealand's population is considered prepared for the occurrence of a natural disaster (Frampton, Chaffey, Hardwick and McNaught, 1996).

2.3.5 Mitigation and Management

A variety of measures are in place to deal with hazards and disasters should they arise (Figure 2.2). The theory which underlies these measures is found in the risk assessment-risk management paradigm.

2.4 The Risk Assessment - Risk Management Paradigm

The risk assessment - risk management paradigm provides a framework for looking at analysing risk for decision-making purposes. It was proposed by the United States National Academy of Sciences in 1983 (Baker, 1996). The paradigm gives risk assessment and risk management equal and sequential status in decision making. It is necessary to identify and assess risks, then determine strategies to manage them. The link between risk assessment and risk management is the risk characterisation process. Here, the problem is identified using the available facts, figures and evidence (i.e. assessment techniques) and then solutions to deal with the problems (i.e. management techniques) are developed. The paradigm does not avoid subjectivity to produce totally objective results. Instead, the paradigm expects that inherent value judgements will occur, but attempts to limit them from overwhelming either risk assessment or risk management processes and hence influencing outcomes (Baker, 1996).

Figure 2.2: Managing Risks in New Zealand

Mitigation and Management Methods

Legislation
- Local Government Act (1974)
- Fire Services Act (1975)
- Civil Defence Act (1983)
- Building Act (1991)
- Resource Management Act (1991)
- Health and Safety in Employment Act (1992)
- Earthquake Commission Act (1993)

Mitigation Plans
- Catchment works
- Revised building codes for Central Business Districts and households
- Seismic stations

Research Projects
- Lifelines projects
- Volcanic studies

Civil Defence
- Up-to-date civil defence plans
- Regional and local civil defence responses through regional and local government
- National civil defence e.g. Red Cross, Salvation Army, military

Information Dissemination
- Print material from civil defence organisations i.e. brochures, posters
- Earthquake business plans
- Natural hazards part of school curriculum

Operational Projects
- Egmont Volcanic field Seismic Station Project
- Emergency Services radio band
- Computerised register of residents who need special help in an emergency, in collaboration with Disabled Persons' Assembly and local community group
- Meteorological Service weather radar at strategic points to improve accuracy of forecasting

Frampton Chaffey, Hardwick and McNaught, 1996

2.5 Risk Assessment

2.5.1 An Objective Process?

Risk assessment is envisioned as an objective process providing "information for decision makers to make informed choices on management options"(Pyle and Gough, 1991, 10). It is supposed to make limited use of value judgements and be based to the maximum extent possible on hard science, not speculation (Brown, 1996). However, this is not possible as uncertainty presides over all decision making. As a result, values are brought into the risk assessment process. The presence of values in the risk assessment process is unavoidable:

> "Risk assessment, as a scientific methodology, expresses either implicitly or explicitly its normative commitments in the following ways: most fundamentally, the concept of harm presupposed by risk assessment is itself evaluative. It requires us to identify the things that we value as good and disvalue as bad - those things that we care about securing and avoiding.....Value commitments inform every level or risk assessment from assumptions about who is harmed and what counts as harm to assumptions about the relevant temporal and spatial extent of harm's probability and magnitude.....I would argue that acknowledging the values that inform views about what constitutes harm, about who or what is harmed, about comparative harms and countervailing benefits is not a defect, but rather, is a representation of the reality of human concerns". (Sharpe, 1996, 268-269)

2.5.2 The Risk Assessment Process

Pyle and Gough (1991) suggest three major parts to the risk assessment process. These are:

(a) Risk Identification

(b) Risk Estimation

(c) Risk Evaluation

(a) Risk Identification

Risks are inherent in all activities, being obvious in some, less so in others. Identifying the risk in a particular circumstance is the first stage of risk assessment. Thought must be given to the causes or origins of that risk. The major causal agents of risk related to outdoor activities are people, equipment or resources and the environment (New Zealand Mountain Safety Council Inc., 1993). Separately, the causal factors generate relatively little risk, but when combined in an activity there is greatest potential for mishap.

The conditions under which the hazard occurs should also be known. The role of judgement in identifying risks both before and during the activity is crucial. "Judgement involves experience, skill and knowledge of the activity, people, environment and equipment involved" (New Zealand Mountain Safety Council Inc., 1993, 24).

(b) Risk Estimation

Once the risks have been identified, it is inevitable that people will want answers to certain questions, such as the size of the risk, their chances for safety or survival, the timing of the hazard, and so on. For most types of risk, answers to these questions are uncertain and can only be given as estimates. Risks are estimated in terms of probability and magnitude after they have been identified. This can be either a qualitative or quantitative process. Probabilities are decided after making assumptions about the possible outcomes of a situation. Magnitude, however, is usually derived by technical analyses. The end product, the risk estimate, is a combination of probability and magnitude references (Pyle and Gough, 1991). It is, in theory, the best possible interpretation of the risk.

(c) Risk Evaluation

Risk evaluation places questions of risk, uncertainty and safety in the realm of the general public. "The risk evaluation process is used to relate risk estimates to society's expectations and values"(Pyle and Gough, 1991, 13). Society either accepts or rejects certain risks. The thrill-seeking nature of adventure tourism depends on a favourable evaluation of its risks in order to be successful. Risks need

to be high enough to thrill, but low enough to minimise serious bodily harm. Risk evaluation can change over time. What may have been acceptable in the past may no longer be acceptable at present and vice versa. The acceptability of risk will depend on factors such as the affected parties, the nature of the risk and its duration. Other than being acceptable, risks may also be tolerated i.e. they are allowed to occur, but with reservation. In general, "people are prepared to accept a higher level of risk over a short time than they would accept over a longer period"(Pyle and Gough, 1991, 14).

2.6 Risk Management

Risk management is concerned with the monitoring and control of hazards in order to reduce the potential loss from risks (Gardenier and Keey, 1992; New Zealand Mountain Safety Council Inc., 1993).

> "It is based on the premise that people should be able to pursue their natural inclinations toward activities involving risk; however, the possibility of accidents resulting from such activities should be minimised through plans to control them" (Ford and Blanchard, 1993, 245).

In addition, participants have the right to fail without incurring serious consequences whether emotional, physical and mental, and also to try again (ibid.). Thus, managing risks in adventure activities can be a delicate matter. It is a revolving circle. The excitement of risk involved in these activities provides the incentive to participate. However, risks need to be controlled to ensure safety. If serious accidents continually occur, participation may eventually decline. Thus, risk management needs to tread a fine line between excitement and security.

Risk management is the major decision making portion of the risk assessment - risk management paradigm. It uses the information generated from the risk assessment process. There are several methods to manage risks depending on what is appropriate for a particular circumstance. A range of useful tools are available such as risk management plans, safety standards and codes of practice. Effectively, once risks are identified, estimated and evaluated they can be managed. Four types of

management decisions are possible, namely "reduction, avoidance, transference or retention of the risk" (New Zealand Mountain Safety Council Inc., 1993, 25).

To undertake risk management effectively, it is vital to understand its dimensions. Firstly, risk can occur as either individual risk or group risk. Both types of risk usually have different probabilities and should be managed accordingly. Secondly, how people perceive risks will reflect directly into how risks are to be managed. Perception is influenced by a number of factors. In the case of outdoor recreation, the New Zealand Mountain Safety Council Inc. (1993) identified the following factors as essential to how people perceive their circumstances:

* confidence level
* equipment (familiarity)
* venue
* leader
* experience level
* degree of tiredness
* mood
* awareness of own limitation
* knowledge of the situation
* fear of the unknown

Thirdly, risks should be disclosed, but risk disclosure is a delicate topic. Evidence has been given to justify disclosing as well as not disclosing certain risks. However, both paths can lead to hysteria or apathy, which are undesirable (Cohn, 1996). The best chance of success in a risk management process is to make all facts, assumptions and uncertainties public as well as candidly reporting the strengths and weaknesses of the information (ibid.). Ideally, this should inform the public and increase alertness regarding any situation. Furthermore, two types of risk management can be distinguished i.e. source oriented and effect oriented risk management (Gardenier and Keey, 1991). The former "tackles the heart of the matter" while the latter applies "where the source is not accessible or is difficult to control" (Gardenier and Keey, 1991, 13).

2.7 The Nature of the Accident

Risks are sometimes associated with accidents. Accidents are usually unwelcome events which generate harmful effects either physically, emotionally, financially or socially. An accident has a dual character; it relates to "something which was

unplanned/unpredictable *and* had negatively-valued consequences (involved harm or loss)" (Dowie and Pym, 1980, 15). An event can be classed as an 'accident' if it shows a set of seven characteristics (Table 4).

Table 4: The Seven Characteristics of an 'Accident'

Parameters	Prescriptions for an 'accident'
Degree of expectedness	the less the event could be anticipated
Degree of avoidability	the less the event could have been avoided
Degree of intention	the less the event resulted from deliberate action
Degree of warning	the less the warning
Degree of occurrence	the more quickly the event happens
Degree of negligence	the less recklessness or carelessness associated with the event
Degree of misjudgement	the less mistakes in judgement associated with the event

Source: Dowie and Pym, 1980, 15-16

In general, accidents are unexpected and unavoidable events. However, the extent of what is avoidable and expected is another matter, depending on societal judgement. "To the extent that the society views the event as unpredictable or the damage as serious, it is likely to call the event an accident" (Dowie and Pym, 1980, 16). How this relates to adventure activities is telling. Many consider adventure activities disasters waiting to happen. Adventure businesses, on the other hand, maintain that the level of accidents is low and insignificant, and furthermore that accidents are a natural part of adventure tourism. According to Ford and Blanchard (1993, 245) when dealing with 'accidents, injuries and fatalities', three facts are known:

1. *There is no evidence that outdoor recreational activities are inherently dangerous.* The activity does not cause accidents; people cause the accidents. People in the wrong place, at the wrong time, with the wrong equipment, and/or making the wrong decisions cause accidents.

2. *People are risk takers.* Individuals desire to test their new skills, try new challenges and have new adventures. There is probably less risk in terms of mental health in a whitewater trip than in accepting a new job.

3. *In an outdoor pursuit program, as in any other situation, the leaders are never guarantors or ensurers of safety.* Unforeseen conditions, improper decisions, and/or improper behaviors on the part of the participants preclude guaranteed safety."

In many cases, these facts are either ignored or forgotten by operators and participants. The continued success of adventure businesses depends on the responsibility of both participants and operators to ensure that appropriate decisions are made regarding the risks encountered in adventure activities.

2.8 Case Study Activities

Three activities will be investigated in detail to illustrate the nature of physical risks within adventure tourism. Each is significant as a desired form of visitor recreation. In addition to their tourism value, these activities incorporate particular risks and hazards. Accidents of varying degrees have occurred on all three types of activities throughout New Zealand. The activities in question are whitewater rafting, jetboating and bungy jumping.

2.8.1 Whitewater Rafting

(a) Description

First used for communication purposes, rafting is an extremely popular adventure activity. Outings vary, lasting a few hours, an entire day or through multi-day trips. Rafting is done in inflatable watercraft, which are simple yet stable, but they lack the manoeuvrability of other solid - hulled watercraft such as canoes and kayaks (Ford and Blanchard, 1993). Moving a raft is accomplished either by paddles (the method most used in New Zealand) or oars. Paddle rafting involves using the entire crew to steer and propel the raft, guided by a 'raft captain'. The rafts are usually manoeuvred through white water conditions on a stretch of river. These conditions

are graded according to the difficulty of navigating the river. The international scale of river is as follows (Ford and Blanchard, 1993, 19):

> Class I: Moving water with a few riffles and small waves. Few or no obstructions.
>
> Class II: Easy rapids with waves up to three feet and wide clear channels. Most are obvious without scouting. Some manoeuvring is required.
>
> Class III: Rapids with high irregular waves often capable of swamping an open canoe. Narrow passages often require complex manoeuvring. Many require scouting.
>
> Class IV: long difficult rapids with constricted passages most often requiring precise manoeuvring in very turbulent waters. Scouting often necessary and conditions make rescue difficult. Generally not possible for open canoes.
>
> Class V: Extremely difficult long and very violent rapids with highly congested routes which nearly always must be scouted. Rescue conditions difficult and significant hazard to life in even of mishap.
>
> Class VI: Difficulties re carried to extreme of navigability. Nearly impossible and very dangerous. for experts only, after close study and all precautions taken
>
> Note: if the water is below 50°F(10°C) or if the trip is extended in wilderness areas, the rapids on the river should be considered one class more difficult than usual.

Ford and Blanchard (1993, 403-403) sum up the rafting scale as follows:

> "For rafters, Class I and Class II rapids and usually considered "easy", Class III "moderate". and Class IV "difficult". Class V rapids are so tough that "difficult" is probably an inadequate term. These are for experienced experts only. Class V waters are usually considered negotiable only with supernatural aid".

(b) Risks and Hazards

Generally, rafting is an activity that can be undertaken by anyone regardless of fitness, but there are some risks.

> "The precise level of risk is dependent upon the nature of the body of water, the kind of activity, the type and condition of the craft, and the extent to which the participants employ common sense and adhere to safety rules and procedures" (Ford and Blanchard, 1993, 402).

The stability of the craft is the main risk factor. Rafts are relatively stable. Nonetheless, they are susceptible to rollovers sending participants overboard and swamping because of their resistance to turning and movement. "Getting tossed overboard is a common event in all but the mildest of whitewater, and it is often impossible to manoeuvre the craft to facilitate a quick retrieval" (Ford and Blanchard, 1993, 402).

The hazards encountered in whitewater rafting as a result of these risks are common. Participants can become entangled in lines and any gear being carried if the rafts overturns or flips (Ford and Blanchard, 1993). Immersion in water may lead to hypothermia, especially if the water temperature is below about 15°C. Hypothermia is also possible without immersion if a constant body temperature cannot be maintained because of the constant flow of water over participants when paddling. Falling overboard presents other problems including injury from rocks, brain damage from extended immersion and drowning. The potential for injury during whitewater rafting appears high, but if proper safety procedures and protective gear are administered to participants and checked beforehand, this potential can be minimised.

(c) Tourism Value

Whitewater rafting is a popular tourist activity. There are over 40 companies operating in New Zealand, and a variety of types and grades of rafting trips available on the market (Collier and Harraway, 1997). In the North Island, popular river sites include the Wairoa, Motu and Rangitiki, and those for the South Island include the Kawarau, Shotover and Landsbourough. Participation in rafting is high and increasing. Between 1992 and 1993, approximately 70,000 international visitors (six per cent of the total) went rafting in New Zealand during their visit (New Zealand Tourism Board, 1994). Between April 1995 and March 1996 there was a seven per cent increase which in total numbers is around 1000,000 international visitors (Collier and Harraway, 1997).

The continued marketability of New Zealand whitewater rafting is of concern to the tourism industry. Serious accidents have occurred in the recent past, sending negative signals to overseas markets, especially in Asia. Regulation of the activity has become an inevitability.

> "Due to a number of safety concerns, particularly in the Queenstown area, the Maritime Safety Authority has initiatives underway regarding safety standards and the licensing of operators within the commercial whitewater rafting industry" (Collier and Harraway, 1997, 75).

It is not expected that incorporating more regulation will diminish the attraction of rafting, and may by offering reassurance actually increase its popularity.

2.8.2 Jetboating

(a) Description

The jetboat was invented in 1957 by New Zealander William Hamilton and has been used for recreational activity ever since (Collier and Harraway, 1997, 75). Jetboats are usually small mechanised watercraft which travel at high speeds and are capable of travelling "on shallow and difficult waterways through narrow gorges" (Collier and Harraway, 1997, 75). They are manoeuvred by a driver. They are able to turn

at a moment's notice and can complete several types of spins, especially the highly popular 360 degree spin which whips the craft out of the water in a complete circle. Jetboats are usually used in relatively calm waterways. All that passengers are required to do is hold on to the rails, especially during spins.

(b) Risks and Hazards

Jetboating appears a relatively safe activity. Participants are not required to be physically involved in the activity. However, jetboats do present risks and these hinge on equipment (i.e. the jetboat itself) and the abilities of the guide. Jetboats are manoeuvred at high speed, criss-crossing rock outcrops and other jetboats with hairbreadth space before turning. This is a highlight of outings. Equipment malfunction or guide miscalculation is a serious risk, the consequences of which include close scrapes, collisions and the possibility of physical injury or death to passengers and guide, plus damage to the equipment. Environmental risks also play a part. Sudden adverse weather changes, for example heavy rainfall, can diminish visibility which adds to the risks already generated by the possibility of human error and equipment malfunction. Jetboat to jetboat collisions are rare, but possible unless proper navigational instructions are followed by guides and nothing goes mechanically wrong with the jetboat.

Participants are not totally free of initiating risk. They are required to wear proper gear and hold on to rails. Without holding on, they risk being thrown overboard on a spin with the consequent possibility of hypothermia and injury such as a concussion from the fall or jarring by an object such as the jetboat or a rock outcrop. Hypothermia is possible if participants do not wear warm clothing as constant splashing and cold streams of wind at high speed lower body temperature, especially during winter. In essence, jetboating is an exhilarating experience but care needs to be taken.

(c) Tourism Value

Jetboating is an extremely popular activity. On the survey of activities undertaken by international visitors, jetboating ranks fourth in importance. Approximately 19 per cent of all international visitors to New Zealand went jetboating between April

1995 and March 1996 (Collier and Harraway, 1997). This is an increase of about one per cent over the period 1992 - 1993 (New Zealand Tourism Board, 1994). The Shotover Jet in Queenstown alone attracts in excess of 60,000 participants per annum (Collier and Harraway, 1997). In addition, it

> "received international publicity, being described as 'the most exhilarating boat trip in the world' and in 1993 was judged the Best Visitor Attraction and winner of the Supreme Award at the New Zealand Tourism Awards" (Collier and Harraway, 1997, 75).

Several rivers are used for jetboating other than the Shotover. In the North Island, these include the Whanganui, Rangitiki, and Waikato Rivers, and for the South Island, Dart, Karawau, Waimakariri, Rakaia and Buller Rivers. The risk potential of jetboating has so far elicited no major concerns, but continuous performance assessment is necessary to avoid mishaps.

2.8.3 Bungy Jumping

(a) Description

Bungy jumping is closely linked with New Zealand adventure tourism. Bungy jumping is making the transition from fad to almost routine among adventure activities. There are a number of jump sites in New Zealand, many handled by the A. J. Hackett establishment. Jumps are usually carried out off rigged structures. These can be located in the outdoor environment or within built-up areas. A platform is set up on an elevated structure which may be an existing fabrication like a bridge (for example the 71m drop from the Skippers Canyon Bridge), or on an installed frame such as a crane (for example the 43m drop from the Ledge located at the top of the Queenstown gondola, 400 feet above Queenstown). A pulley is attached to the platform carrying the rubber cords used in the operation. Participants are weighed before jumping to ensure that the proper resistance is matched on the cords. The cords are harnessed to either the ankles or waist of the jumpers. Jumpers are then positioned at the end of the platform and jump on command. Afterwards, jumpers are lowered to handlers waiting at the bottom of

the jump site. A jump may last no more than a few seconds, but the adrenaline rush may last from hours to days afterwards. With bungy jumping becoming routine, attempts have been made to renew the thrills. The result has resulted in the introduction of night-time as well as helicopter bungy jumping, though the latter has been currently disallowed in New Zealand by the Civil Aviation Authority.

(b) Risks and Hazards

Risk taking is high on the agenda of bungy jumpers. Throwing oneself off an elevated structure takes much courage as well as faith in the strength of the cords. The possibility exists that the rubber cords can snap under excess strain. Cord safety should be checked from initial purchase, though storage, usage and everyday wear and tear. In addition, correct weight measurements and resistance setting minimise possible danger. The bungy jump carries with it a pull-back effect after the initial plunge. This rebound is potentially harmful in two respects. Firstly, there is the physical jerking of the body if the rebound is too hard. Secondly, if the rebound comes with a swing effect, a participant might be hurled against a nearby structure such as a cliff face or bridge panels. The consequence of both actions is serious bodily harm to participants. Currently, the reputation of bungy jumping is satisfactory and standards are in place.

(c) Tourism Value

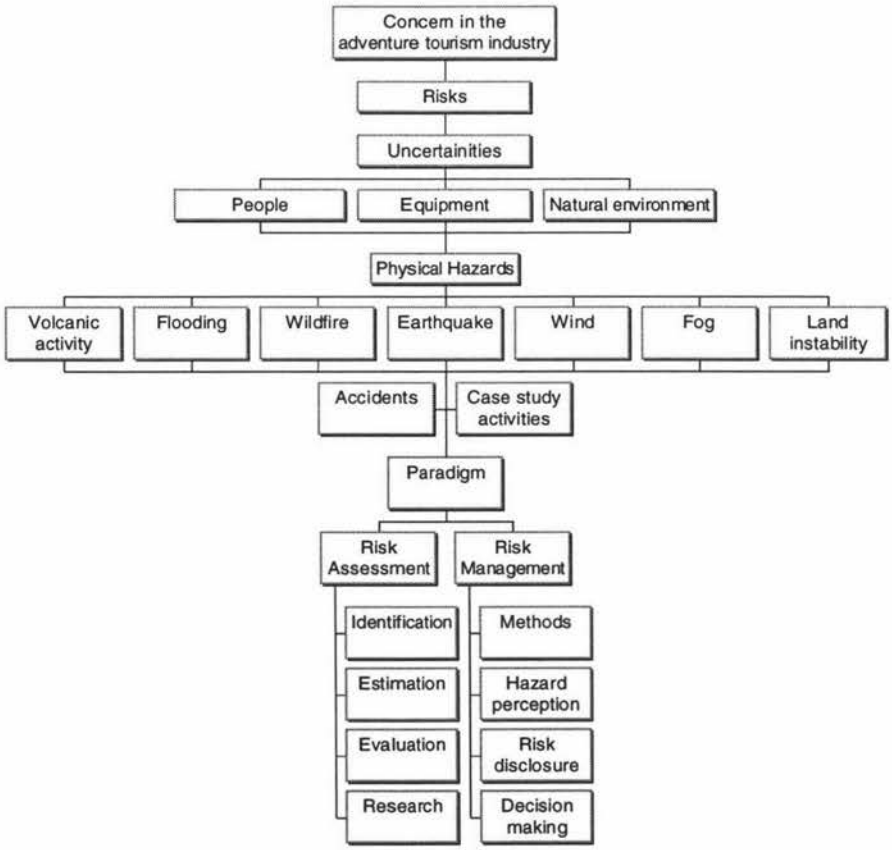
A highlight of many visits to New Zealand, the bungy jump is now an established part of the tourism market. It was started by in 1988 with the opening of A. J. Hackett Bungy Queenstown Ltd., the first commercial operation for New Zealand and the world (Collier and Harraway, 1997). The price of bungy jumping is moderately expensive, but this has not discouraged participation. In fact, participation doubled over three years (1992-1993). About 51,000 (four per cent of the total) international visitors took the plunge (New Zealand Tourism Board, 1994). This rose to seven per cent, or more than 100,000 international visitors 1995-1996 (Collier and Harraway, 1997). The growth potential for bungy jumping is high, as is its quality rating. "In 1990 [A. J. Hackett Bungy Queenstown Ltd.] received the New Zealand Tourism Award of Excellence" (Collier and Harraway,

1997, 74). The high perceived risks associated with bungy jumping constitute its drawcard.

2.9 Establishing relationships; Risk, Activities and Decision-making

Chapter Two elaborated on the nature of risk (Figure 2.3). Risk is an ambiguous concept with several meanings. This thesis considers physical risk for the most part. Regardless of the source of risk, risk has two composite parts i.e. uncertainty and consequence. Consequences can be either positive or negative. However, a human population needs to be present for an effect to be registered at all. In the case of natural hazards, the consequences are usually negative. New Zealand has a particularly hazardous landscape, susceptible to various sources of physical risk. The three major physical threats are flooding, earthquakes and volcanic activity.

Figure 2.3: A Framework for Assessing and Managing Risk



Several mitigation and management methods abound to handle hazardous activity. The underlying framework of these methods lies in the risk assessment - risk management paradigm. Risk assessment, which comprises three research segments, identification, estimation and evaluation, is usually carried out first as objectively as possible. The major decision-making component is in risk management. This looks at the monitoring and control of hazards, which can be done in various ways (i.e. transference, reduction, avoidance, retention), provided a lot of information is received such as the nature of risk, perception studies, the nature of the population affected and so on. Managing risks can be one way to diminish the case of incidents. Incidents may or may not be true 'accidents'. The three activities (i.e. whitewater rafting, jetboating and bungy jumping) chosen for further study have all been affected by incidents. For each activity, a description, suggestion of risks and hazards and indication of their tourism value has been provided. How these activities function as adventure businesses is the subject for Chapter Three.

Chapter 3: The Business of Adventure Tourism

3.1 Introduction

Outdoor recreation is a long-standing part of the New Zealand lifestyle. Adventure tourism grew out of outdoor recreation, but with the extra attraction of adventure and risk. Understanding the nature and consequences of risk is paramount to the adventure tourism industry, especially to adventure businesses.

3.2 Outdoor Recreation in New Zealand History

Outdoor pursuits evolved from activities done out of necessity to those done mainly for recreation. From the earliest Pakeha colonisation of New Zealand to about the middle of the nineteenth century, traditional outdoor activities such as tramping, diving, skiing, horse-riding and mountaineering were done for purposes of survival and exploration (Devlin, 1995).

> "Managing the priorities in their lives left little time for early settlers to consider leisure in terms of using the outdoors for fun. The outdoor environment was to be respected or even feared. The mountains and rivers were unforgiving". (Devlin 1995, 8)

The environment in which early settlers found themselves was very different from the one they left behind.

> "For those arriving from the United Kingdom, 'natural environments' were green pastures, hedgerows and woodlots, with an accompanying fauna of familiar animal species''(Devlin, 1995, 7).

The New Zealand landscape with its multitude of natural features - lakes, rivers, swamps, mountains, valleys, hills, forests, volcanoes - appeared hostile and in need of human management. Outdoor recreation developed slowly. Exploration and surveying in the nineteenth century conferred some secondary benefits. According to Devlin (1995), from the second half of the nineteenth century, changing relationship was taking place between settlers and the New Zealand environment.

Three scenarios emerged almost simultaneously. Firstly, outdoor recreation became a pastime, though mainly for the upper class. However, it was not widespread and could not outdo rugby or cricket in popularity. Secondly, outdoor recreation was seen as useful for practical purposes, such as building the strength and endurance necessary to fight in a war or in building character. Thirdly, mountains were being climbed by adventurous men and women for the fact that they were there or for the climbers to be the first to climb them. Participation in outdoor recreation was steadily increasing.

Tourism and outdoor recreation joined forces as the latter matured in the late nineteenth century and the relationship has continued to the present day. Destinations such as Milford Sound, the Pink and White Terraces, Whakarewarewa thermal area, and the Waitomo Caves were attracting tourists from the nineteenth century (Devlin, 1995). Outdoor recreation continued to grow after particular events in the twentieth century. After World War One, there was a proliferation of clubs such as the Federated Mountain clubs and youth groups that used outdoor activities within their organisations. The post World War Two economic and social boom popularised activities with a mobile and young population. The development of national parks made places available for outdoor recreation for locals and tourists alike.

The mixture of outdoor recreation and tourism has been an explosive combination for New Zealand. Its importance has increased exponentially as

> "... outdoor recreation has moved in the late twentieth century from being a set of relatively simple pursuits and pastimes to become a primary focus of our tourism industry, an alleged panacea for our problems in earning overseas currencies, a multi-million dollar local industry and, at the individual level, has been targeted as a vehicle or pathway for the achievement of much needed personal, physical, psychological and intellectual growth". (Devlin 1995, 3)

It is at this individual level that the adventure business was born out of traditional outdoor recreation activities. However, regulation in the tourism sector has not kept pace with this growth.

3.3 Regulation in the Tourism Sector

There are three major sources of formal regulation for tourism in New Zealand.

Regulating safety within adventure tourism.

The political climate in New Zealand emphasises minimal government intervention. Adventure activities in New Zealand developed without any formal regulation regarding safety, standards, training, equipment operation, business formation or penalties for misconduct or accidents. The lack of regulation has led to high innovation and creativity in the industry.

Regulating use of the Conservation Estate.

Most adventure activities take place in the Conservation Estate. This area is managed by the Department of Conservation (DoC) and comprises significant areas i.e.

> "world heritage areas, national parks, forests and many hundreds of reserves of various kinds, ... marginal strips that border lakes and rivers,..... and much otherwise remote country" (Hall, 1997, 52).

The Department of Conservation is governed by the Conservation Act (1987) through which it has the responsibility to manage and conserve protected areas while at the same time providing for recreation and tourism (ibid.). Ideally activities should not degrade protected areas. Thus, it is inevitable that some conflict will occur.

Regulation through the Resource Management Act (RMA) 1991.

The RMA is a comprehensive legislation for sustainable resource management. Guidelines have been developed to encourage sustainable tourism practices, but nonetheless, there have been conflicts between tourism developments and RMA

tenets. (Ministry for the Environment et. al. 1996). Outside of these three sources, there is limited government intervention. The New Zealand Tourism Board markets New Zealand, some local authorities and regional councils prepare strategies for tourism in their area and operators get on with business.

3.4 The Nature of Adventure Businesses

Adventure businesses function for the most part as small businesses operating in a tough market. They need to perform to a high standard to attract customers as well as to represent the best of New Zealand tourism. Many began as lifestyle option occupations with limited bureaucracy and planning (Gabites, 1997). They have relatively low start-up costs and in many instances ignore the business management side of a start-up. According to a Deloitte Touche Tohmatsu survey conducted on small businesses in the New Zealand tourism industry in 1994, 50 per cent of businesses started without analysing their business potential and financial risks. Moreover, 70 per cent of businesses had no previous tourism experience before start-up. This is unfortunate as there are five issues which need to be handled in the planning stage (Deloitte Touche Tohmatsu, 1994, 6).

* Management skills - many operators are involved in the delivery of the product or service to the visitor in addition to managing the operation. Tasks such as developing a strategic marketing plan can be pushed to one side when things are busy. The importance of developing this kind of plan should not be overlooked as it is likely to influence the long-term viability of the business.

* Industry experience - there is a significant a number of operators with little or no previous experience in the tourism industry. This lack of experience may make it difficult for them to understand the complexities of distributing and marketing.

* Market research - it is necessary to understand who uses a particular operation in order to determine the most appropriate product to offer, and then make effective use of the marketing budget.

* Business planning - many operators give low priority to business planning at the start-up stage and when in operation. A better understanding of the business planning process, along with having a well-defined plan in place, can greatly assist long-term profitability.

* Training - tourism is a service industry. An understanding of the service ethic and how it can improve the profitability of the business and provide a competitive advantage is a key requirement for operators. Because tourism businesses employ part-time and seasonal staff, the need for ongoing customer service training is paramount.

The market for adventure businesses is expanding, but still difficulties exist. Their ability to differentiate their products and services in a variety of ways has allowed them to grow.

> "Many.....activities are directly related to specific regions, climate or physical features. This helps regions to develop certain activities which others cannot, thus providing a competitive advantage". (Deloitte Touche Tohmatsu, 1994, 9).

Furthermore, changes to existing activities and the development of new ones occur in adventure tourism on a regular basis, providing an attractive spectrum of activities for visitors. In 1995, there were 500 operators in business with another 100-150 potential start-ups (New Zealand Tourism Industry Association, 1995).

Starting-up is the easy part, it is more difficult to stay in business. What needs to be achieved from the initial start-up is "service quality, product development, innovative marketing and fair pricing" (Deloitte Touche Tohmatsu, 1994, 8). However, vulnerability to competition, inability to re-invest in the business, lack of preparation before start-up, high staff turnover, inadequate funding, and inability to break-even are serious problems faced by many adventure operators. According to Geoff Gabites, former executive officer of the New Zealand Tourism Industry Association:

> "There were a lot [of outdoor adventure operators] coming into the industry...50 per cent had joined since 1989/90...but it takes 3 years to reach break-even. This meant a large number of operators actively losing money. That's different to not making money. The typical operator has been in business 3 years and is losing money. At the same time they are reaching break-even they don't have money for reinvestment. Profitability is an issue the whole industry will have to face" (New Zealand Tourism Industry Association, 1995, 4)

In the midst of these pressures, operators need to be concerned about the safety element of their operations. Both assessing and managing risk are part and parcel of business management practices for adventure tourism, but they can be neglected. Their importance was not mentioned in the Deloitte Touche Tohmatsu survey. Adventure operators are obliged to address safety issues. This obligation takes many forms, but constitutes an overall attempt to protect both participants and operators against unexpected circumstances.

3.5 Responses to Risk Management

Managing risk can be a difficult, but it is perhaps a necessary task. Accidents damage the reputation of the industry and leave the public wondering what went wrong and how the 'people in charge' could allow a tragedy to occur. The 'people in charge' are a mix of individuals, companies, associations, and statutory bodies with different agendas and modus operandii. They respond to risk in different ways and have different reasons for their need to manage risk. For the most part, responsibilities, obligations and duties have not been established among the different entities. Bureaucratic regulation has been avoided by adventure tourism until now, but it probably can no longer operate at this level with if growth is not to be prejudiced by accidents.

3.5.1 Statutory Responses

Tourism is a major income earner for New Zealand. No-one wants the industry to be affected by negative publicity generated by publicised accidents. Both the

Tourism Policy Group within the Ministry of Commerce and the New Zealand Tourism Industry Association deal with industry policy and promotion issues.

"The Ministry of Commerce's primary concern is whether there is the potential for long term damage to occur to the tourism industry if New Zealand is perceived by overseas travellers as unsafe" (Ministry of Commerce, 1996, 1).

The adventure tourism sector is treated in an open and unrestricted manner, with relatively few entry requirements for new businesses, either voluntary or compulsory. This is:

> "in line with the Government's strategic objectives to minimise compliance costs and promote economic growth and competition, [so that] as far as safety standards are concerned, there are few barriers restricting entry to the adventure tourism sector" (Ministry of Commerce, 1996, 2-3).

If the potential for mishaps does not decline, then it might be necessary for the government to intervene with stronger measures to protect their earnings and visitors.

3.5.2 Industry Responses

Adventure tourism has carved out a niche for itself in the broader tourism industry. With the abundance of adventure activities available for visitors to New Zealand, it is not hard to see how the sector is large enough to be an industry in itself. "The [adventure tourism] industry is predominately comprised of small, specialised owner/operations" (Ministry of Commerce, 1996, 2). These operators require the continued success of adventure tourism to maintain their business and lifestyle. However, their usually limited financial capability may encourage them to under-manage their operations by having no risk management plans for example. In addition to the small operators, there are larger operators which sell not only adventure activities, but other tourism products such as accommodation and travel. For some activities, for example white water rafting, bungy jumping and kayaking, associations exist to monitor the performance of the operators, among other things.

An Adventure Tourism Council has been established which is actively promoting industry driven regulation of activities. The industry is aware of the accidents. The choice of many within the industry is the implementation of an industry owned system as opposed to statutory requirements. It is hoped that this will encourage more participation from operators, permit the industry to retain control of its operations, and to regain its credibility.

3.5.3 Individual Responses

Risk management is generally carried out at the level of the individual adventure business. Each operator is interested in making a profit and offering a quality experience to participants. Safety concerns are not, the majority of the time, ignored out of negligence, but because of added costs, apathy or disbelief that anything could go out of control. The notion of risk management may raise the prospect of restrictions, high costs, bureaucracy, law suits and tests to the operator, whether or not this is true or not. There are a number of options, both compulsory and voluntary, from which individual businesses might have preferences for their particular needs.

3.6 Methods

There are two important starting points for handling risk. Firstly, it may be necessary to obtain a consensus from operators on the various approaches to safety and risk. Developing and enforcing methods to assess and manage risk may be inoperable if operators refuse to comply with them or see no necessity for their implementation. Forcing operators to comply can create tension resulting in operator clashes, price wars, closures and 'cowboy attitudes'. A few press reports of accidents already portray adventure operators as "thrill seeking cowboys, neglectful of safety standards and only in business for a quick buck", according to Janine Holland of the New Zealand Tourism Board (http://www.languagetravel.com/janews4.htm, 1997). Secondly, it may be necessary to manage entry requirements to adventure tourism. Adventure businesses currently have relatively low entry requirements. There is no necessity to follow safety standards, to join an industry or activity association, to comply with

a particular code of practice and so on (Ministry of Commerce, 1996). A set of entry requirements could encapsulate many of the approaches to be discussed.

Several approaches are available to assess and manage risk levels in adventure businesses. Some of these approaches are operated through statutory provisions, others can be dealt with by the industry as a whole, and yet others can be initiated and implemented by individual businesses. In most approaches a mix mode or implementation. The major approaches are:

* codes of practice
* legislation
* safety standards
* entry requirements
* insurance
* risk management plans

3.6.1 Legislative Change

Currently there is no legislation dealing with adventure tourism, but a number of statutory requirements have application to adventure businesses. Because specificity is low, legal redress is a difficult and time-consuming process. Nonetheless, the presence of some form of legislation is one method of getting operations to understand their obligations. The legislation relevant to adventure businesses and their pertinent statutes, as given by the Ministry of Commerce (Ministry of Commerce, 1996, 6), are:

* Commerce Act 1986;
* Consumer Guarantee Act 1993;
* Fair Trading Act 1986;
* Health and Safety in Employment Act 1992;
* Accident Rehabilitation and Compensation and Insurance Act 1992;
* Maritime Transport Act 1994;
* Civil Aviation Act 1990;

* Crimes Act 1961;
* Occupiers Liability Act 1962; and
* Amusement Devices Regulations 1978.

In general, these statutes:

1) prohibit anti-competitive behaviour;
2) provide some redress for customers where operators fail to deliver a quality product;
3) prohibit misleading or false statements to customers;
4) protect the welfare of employees;
5) provide a compensation regime for personal injury for customers and employees;
6) provide incentives for operators to take an adequate level of care;
7) place responsibility on customers (visitors) undertaking risky activities, in cases where they are aware that these activities are dangerous; and
8) set out the duties of employers and others relating to the health and safety of employees or other people in relation to amusement devices.

Unfortunately, most of these obligations are not appreciated until a tragedy occurs. The threat of legal action is only an incentive if it is backed up with a substantial penalty (Ministry of Commerce, 1996). However, the setting of such penalties ultimately follows an unnecessary accident thus becoming part of a regrettable cycle.

Legal redress can be obtained through the following:

* The Fair Trading Act (1986) gives customers a right to seek redress if they can prove they received false or misleading information and suffered loss as a result.
* The Consumer Guarantees Act (1993) implies that there is a contract between consumer and activity provider. This includes a guarantee that the activity will be carried out with reasonable care and skill.

* The Crimes Act (1961) provides for the prosecution of operators and organisations who are found negligent in protecting the safety of people (which includes customers) in their care. (Ministry of Commerce, 1996, 4)

New Zealand is unique in that it has a no-sue policy regarding accidents.

> "Under the Accident Rehabilitation and Compensation and Insurance (ARCI) Act 1992 operators cannot be sued by their customers for compensatory damages arising directly or indirectly out of personal injury in cases where provision for that injury is provided under the ARCI Act" (Ministry of Commerce, 1996, 5).

The no-sue policy may have benefited operators by allowing the innovation of new products (Gabites, 1997). At the same time, it has frustrated and angered injured participants or families of those seriously injured or dead as a result of adventure activities. As a result, working through legal redress in an adventure activity case is essentially a legal battle under the current legislation.

3.6.2 Codes of Practice

The implementation of codes of practice in adventure businesses might solve several problems. Codes of practice essentially provide reference points and reminders for both operators and clients of how the particular business functions, what it is trying to achieve, as well as providing methods for assessing its performance (Taylor, 1992). In general, a code of conduct or practice is "constructed to guide [an organisation's] working behaviour" (Taylor, 1992, 493). Codes of practice are usually backed up by two frameworks. The first is a code of ethics. The second relates to social values and norms. A code of ethics usually forms the overarching ethical principles of an entity. It "would be composed of visionary statements regarding the normative and ethical aspects of the [organisation]" (Taylor, 1992). This differs from a code of conduct which stresses the more routine tasks of business such as conflict resolution, advertising, pricing, competence and so on (Taylor, 1992).

Underlying both codes, however, are social values and norms. Codes reflect what is acceptable or not in society. Michael Bayles (1989, 6) gives five principal values relevant to establishing working codes. These are:

* Freedom and Self-determination - people should be free from limits imposed by others to act as they desire to the extent that such freedom is compatible with other values.

* Protection from injury - people should be protected from injury - loss of life, bodily or psychological injury or wealth- by force, theft or fraud.

* Equality of opportunity - people should have the same chances to reap the benefits of society without discrimination for example by sex, age, race and ethic origin.

* Privacy - people should have privacy, that is, control over the information others have about them

* Minimal well-being - people should have the goods and services needed to fulfil wants necessary for a minimal standard of living.

The first two values are relevant to the establishment of codes in adventure businesses. Ironically, in the workings of adventure activities, both social values seem incompatible. Freedom and self-determination characteristics personify adventure businesses. However, the industry is characterised by few safety standards, several accidents per year, and a 'cowboy' image in some quarters. To combat the negative image and to concentrate on another need just as important as freedom and self-determination, i.e. to protect people from injury, the establishment of codes of practice could:

- provide performance standards for the activity,
- provide the roles and responsibilities of operators and clients,
- provide advice on redress for grievances,

- indicate normal business procedures such as pricing, advertising and risk management.

A formal code could consolidate both the obligations of operators and clients. The formality of a code may deter operators who chose adventure business as a lifestyle occupation. However, given the level of development of the sector as a whole, tools such as codes of practice are no longer an option, but a necessity.

3.6.3 Safety Standards

Understandably, there is tension between undertaking high risk activities and implementing safety standards. Adventure activities in New Zealand developed initially without safety standards. With the increased participation of inexperienced recreationalists, it is now necessary to establish formal safety standards. The level of accidents is moderate and the New Zealand Tourism Board believes that negative publicity is unjustified. "Safety standards are already [thought] relatively high" within the industry (http://www.languagetravel.com/janews4.htm, 1997).

Standards can take a variety of forms. They can be industry-based or nationally and internationally developed and recognised. They can be voluntary or mandatory schemes. Regardless of their form, they are backed up by qualifications that must be undertaken. One of the most important is the establishment of a minimum level which must be attained for proper functioning. It is this minimum level that is lacking in the safety standards for adventure activities in New Zealand. The dangers of this deficiency were pointed out by Geoff Gabites (1997, 1):

> "The inability to demonstrate a consistent minimum standard across the industry backed by appropriate qualifications, has placed the industry in danger of losing the support of booking agents, especially those overseas, because of their exposure to accident liability legal action. Unless the industry is able to put the necessary standards in place, the spectre of imposed regulations and enforced qualifications will become a reality".

To counteract this deficiency, several measures are being put in place. The safety procedures of many adventure operators are being monitored to ensure the safety of tourists and locals alike (http://www.languagetravel.com/janews4.htm, 1997). Many activities have opted specifically for safety standards as their approach to deal with risk and safety issues. For example, bungy jumping has is carried out according to its own standards code and white water rafting has safety standards controlled through the Maritime Safety Authority (MSA) (Ministry of Commerce, 1996). Furthermore, a Standards Assurance Programme has been started for operators to be set through consultation, and to be incorporated into their code of practice (Gabites, 1997). Many of these measures are in their initial stages, but they have the ability to enhance the credibility of activities and give assurance to customers.

3.6.4 Insurance

Insurance is a financial approach to deal with risk and safety issues. Insurance does not deal with risk as much as with the consequences of risk i.e. damages. Essentially, "insurance is a financial device to fund losses..[and the]...costs of the loss are spread over time" (Farrier, 1991, 65). It provides a means for the insured to fulfil their obligations if losses do occur. Insurance is not needed at all times, but is requisite "if the maximum probable loss [that could be incurred] is greater than the owner's ability to comfortably directly fund the loss" (Farrier, 1991, 65). The insured is guaranteed financial compensation under the contract of the insurance policy as long as all underlying conditions are met.

An insurance policy is derived after risks have been evaluated. In the insurance industry, risk is defined as "the possibility of an adverse deviation from goals ....[and] normally associated with additional costs" (Farrier, 1991, 67). Risk evaluation involves:

> "determining the maximum probable loss (MPL) [i.e.] the worst loss...expected if all protection procedures fail; and the normal loss expectancy (NLE), the worst loss expected if all protection systems are operational" (Farrier, 1991, 67).

The MPL and NLE are arrived at in the insurance industry by examining the following factors given by Farrier (1991, 67):

* severity of events likely to result in a loss
* probability of an event (i.e. its frequency and magnitude)
* individualised clientele information regarding:
    - location
    - infrastructure
    - access
    - topography
    - natural hazards
    - layout (separating)
    - construction (design hazard control)
    - process flows
    - utilities
    - dependencies
    - plant and machinery reliability
    - protection systems/features installed
    - management control systems (hazards, maintenance, training, contingency planning)
    - waste disposal
    - customer dependence
    - history of loss experience
    - plant values
    - loss estimates

When it comes to adventure activities, insurance is not widespread. Many operators carry no insurance at all, others are marginally insured and yet others that can afford it are self-insured i.e. "having presumably sufficient financial reserves to cover potential costs" (Ford and Blanchard, 1993, 262). As a result of this low coverage, the possible consequences of operating and undertaking many adventure activities have not been assessed and calculated by either operators or insurance companies. This uncertainty results in sketchy policies and expensive premiums.

Many small businesses regard insurance as an unnecessary burden, but insurance can be a valuable method for keeping operators alert to their responsibility to maintain a high level of safety. This in turn could keep their premiums low.

3.6.5 Risk Management Plans

The development of a risk management plan is an important aspect of business planning in the case of adventure businesses. Adventure operators are in the business of marketing and selling risk. Therefore, it can be argued that provisions should be made from the start of operations to manage these risks and to not allow any situation to get out of control. Risk management plans are to not eliminate risks which would be detrimental to adventure businesses. Their aim is to manage risks, particularly to ensure that risks present are acceptable or can be made acceptable by modification for example, using specified equipment like helmets to minimise head injury during white water rafting (Ford and Blanchard, 1993).

The risk management plan can take a variety of forms but the essential ingredients remain roughly the same. The initial steps of assessing the risks and examining the causal factors may be a verbal process in which views and opinions are garnered on the issue via focus groups, staff meetings, surveys and so on. This information is brought together with the policies and operational procedures of the business to form the written plan. The risk management plan needs to be written to ensure that the possible risks and the methods to deal with them are visible to both staff and customers.

> "In actual practice, the written risk management plan usually consists of a set of documents which, taken collectively cover or include all of the relevant facts, policies and procedures" (Ford and Blanchard, 1993, 251).

Compiling a risk management plan is likely to be a major task, requiring a variety of information needed to construct the plan (Table 5). It is not usually undertaken by small businesses due to its high cost in time, materials and finances. However, it is a valuable process that can provide insight into not only the safety aspect of an adventure activity, but also the business management side of the operations. A risk

Table 5: A Generic Risk Management Plan

Components	Level of Detail
General Description	a. Name of Program b. Type of Activity c. Level
Dates and Times	a. Dates b. Times
Goals and Objectives	a. Organisational b. Activity
Location	a. Site/Area b. Weather c. Routes/Campsites d. Facilities
Transportation	a. Mode b. Routes/Destinations
Participants	a. Number b. Skill Level c. Characteristics
Leaders	a. Number/Roles b. Qualifications
Equipment	a. Type and Amount b. Control
Conducting the Activity	a. Preactivity Preparation b. Group Control c. Teaching Strategy d. Time Management
Emergency Preparedness	a. Policies b. Health Forms c. Telephone Numbers

Source: Ford and Blanchard, 1993, 252

management plan can be analysed " to see if there will suitable participants, capable leaders, adequate facilities, [safe locations], and appropriate equipment. There is no sense in going any further [with an operation] if.....prospective participants are not mature enough, qualified instructors cannot be hired, [locations are unsafe], or if there is not enough or adequate equipment" (Ford and Blanchard, 1993, 252). Thus, risk management can be a multi-functional tool, worth the cost of its formulation.

3.6.6 Certification

Certification is another regulatory approach under consideration for the adventure tourism sector. It could be a particularly valuable tool in establishing entry requirements. Certification can either be accomplished on a private or statutory basis. In both cases, it entails empowering an agency to certify operators having satisfied particular criteria for example safety standards, training, competency, and customer service (Ministry of Commerce, 1996). However, for private schemes, certification is not backed up by the law as in the case of statutory certification. Instead

> "private certification is a form of brandnaming: the knowledge that a supplier is a member of a given association [which] carries with it the implication of a higher than average quality of service" (Ministry of Commerce, 1996, 8).

In many cases, certification is an option not a necessity, and would result in both certified and uncertified operators on the market. In that respect, certification is usually a bonus for the consumer as it more or less indicates higher quality service or product, though usually at a slightly higher cost than uncertified ones. In effect, certification schemes (of whatever form) for adventure businesses would attempt to achieve four main intentions namely (Ministry of Commerce, 1996):

1. control of which operators would be permitted to operate their services;
2. control of which operators got a seal of approval for their service;
3. provide consumers with a choice over the activities offered; and/or

4. provide competitive pressure to have a high quality product.

So far certification has been discussed in general for adventure businesses, but has not been signalled out for specific adventure businesses.

3.7 Establishing Relationships; Business, Response and Methods

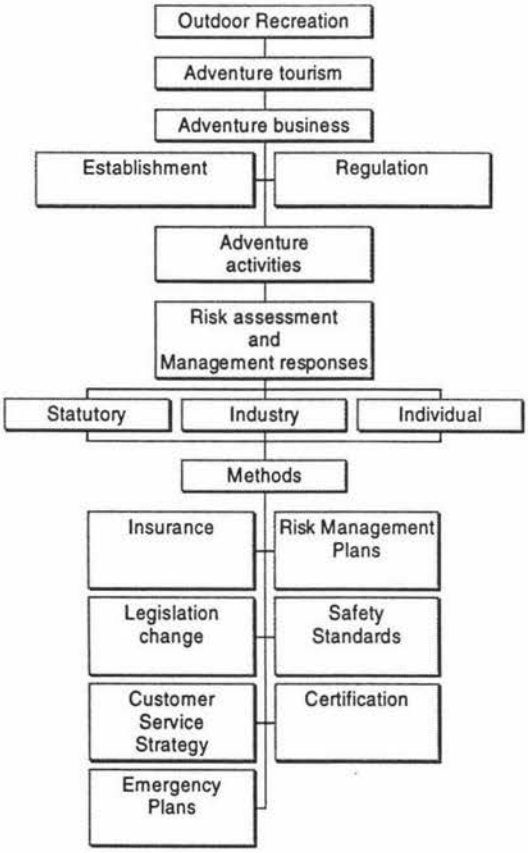
The business of adventure tourism was elaborated on in Chapter Three (Figure 3.1). Adventure tourism grew out of outdoor recreation and with it came the adventure business. Adventure businesses operate in similar fashion to other small businesses. There are low start-up costs and entry requirements for adventure businesses, but profitability is also low and working hours are long. In many businesses, there is a lack of business planning. Regulation has not developed on a large scale in adventure tourism. Some ground has been made with safety regulation. The remaining regulation, mainly concerns sustainable resource management especially the Conservation Estate.

In general, regulation regarding risk management can take three forms i.e. a statutory, industry or individual response. Different methods can be used corresponding to the type of regulation in place. The major methods are codes of practice, legislation, safety standards, insurance, certification, and risk management plans. Risk management plans are written procedures for handling risks and emergencies, lengthy to develop but versatile. Also versatile are codes of practice, generic plans designed to guide behaviour and practice, especially once fleshed out into risk management plans. A minimum level of practice can also be established by safety standards.

Other than emphasising practice, a financial approach (i.e. insurance), can be taken once the necessary information is acquired such as loss estimates, topography, event probability and so on. A mix of these methods could form a base for certification, a tool in the establishment of entry requirements which implies higher quality service. The last method, legislation, possesses several possibilities but the no-sue policy has effectively narrowed some responses and widened others by making legal redress exceedingly difficult. How these methods are perceived ad utilised by the operators

was not really known. Consequently, a field study was employed to examine adventure businesses in light of the assessment and management of their physical risk. The methodology for the study is provided in Chapter Four.

Figure 3.1 Managing Risk in Adventure Businesses

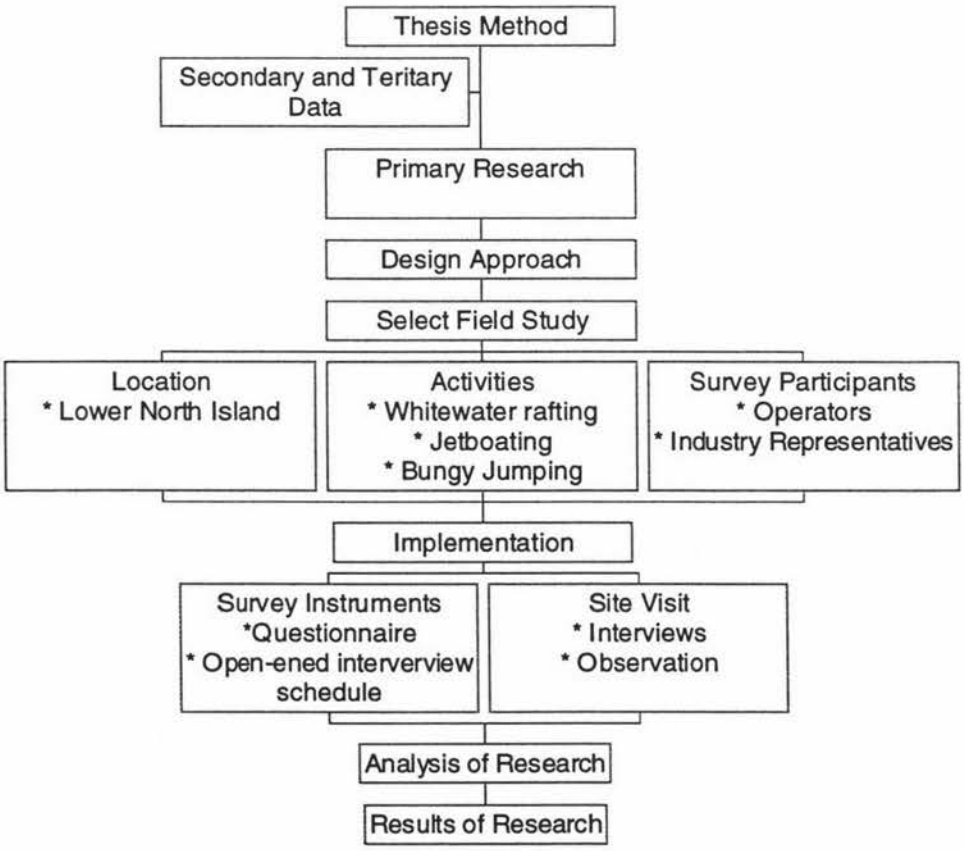


Chapter 4: Research Methodology

4.1 Introduction

Research is conducted in various ways, drawing on either qualitative or quantitative methods. "Qualitative research stresses meanings in context rather than numerically - measured data [which is the purview of quantitative research]" (Anderson and Pool, 1994, 26). Research may concentrate on one type or a combination of both. Quantitative research relies on scientific method and numbers to establish credibility. Qualitative research, while not relying on numbers, maintains its credibility also through ethical data collection, sound interpretation and having personal bias kept to a minimum (ibid.). The methodology used in this thesis is mixes both qualitative and quantitative methods (Figure 4.1).

Figure 4.1: Methodology Used in Thesis Research



4.2 Phase 1 - Designing the Study

It has been shown before that risk is a normal part of everyday activities, as well as being an essential component of the adventure activity experience. The study does not desire to look at ways to eliminate risk, but to more appropriately manage them. The research aims to cast light on

- What types of risks are present?
- How serious are the risks present?
- How do operators view the risks?
- What types of approaches can be used successfully to moderate unnecessary risks?
- What strategies are already in place in adventure businesses?
- What role should government regulation play?

Certain assumptions were made at the beginning of this study. It was initially thought that the 'lifestyle' option, not corporate culture, pervaded adventure businesses and that few operators had formal risk management procedures in place. Because of the delicate nature of some of the information, there was a concern that operators might be reluctant to discuss such details as accidents and business practices. There is no legal requirement to have risk management procedures in place in adventure businesses. Businesses can be started on a whim considering mainly capital cost.

4.3 Phase 2 - Selecting the Field Study

Adventure activities occur throughout New Zealand. A case study area of the Lower North Island was delimited for further study. Here, it was possible to find a cross-section of activities and operators, plus tourism industry representatives. The area was accessible to the researcher and relatively small. It was decided to canvass the views of all operators of the chosen activities. These operators were selected by reviewing tourism brochures, pamphlets, books and magazines. In total there were 26 relevant operators were identified (Appendix 1). Industry

representatives were chosen as those relevant to the tourism industry and the topic. The agencies involved in the study are

- New Zealand Tourism Board
- New Zealand Mountain Safety Council
- Adventure Tourism Council
- Insurance Council
- Tourism Policy Group in the Ministry of Commerce
- Standards New Zealand
- Maritime Safety Authority

Three case study activities were selected to take a better look at the industry. These activities were chosen based on three main factors

1. Researcher interest and participation.
2. Current relevance in terms of accidents, intervention, perceptions.
3. High level of participation and popularity as shown in New Zealand Tourism Board surveys.

The activities chosen to be studied in detail were

1. Whitewater rafting
2. Jetboating
3. Bungy Jumping

4.4 Phase 3 - Field Study Procedures

4.4.1 Instrument Design Phase

With the activities and potential interviewees pre-selected, it was possible to launch into the fieldwork. The field study procedures took about three months to be planned. After reviewing the different methods of conducting the research and consulting the thesis proposal, it was initially decided to provide a checklist to operators and industry officials to assess the risks in adventure activities. Attempts

were made to design a suitable checklist, but none was appropriate. There was a re-evaluation of the method and it was further decided to design a questionnaire for operators only instead of the checklist.

4.4.2 Questionnaire Content and Layout

The questionnaire was designed to give an overview of adventure activities as a business, assess risks, and to examine risk management approaches and preferences for regulation. Thus, there are three identified sections on the questionnaire (Appendix 2). The first section, entitled 'Your Activity', seeks to find out general information on the operation of the adventure business such as peak operating month and the number of participants carried in a year. 'Sources of Risk', the second section, is designed to assess physical risks building on the concept of the people (participants and guides) - natural environment-equipment causal factor triangle used by the New Zealand Mountain Safety Council. Management practices for specific circumstances, such as equipment maintenance and cancellation policy, are also examined in this section. The third section 'Risk Management' focuses on risk management practices such as emergency planning. In addition, operators' views on appropriate approaches to risk management are established.

The questionnaire itself is six pages long and was designed with three major features:

1. Open ended responses
2. Closed ended responses
3. Tick Boxes

It was designed to grant maximum flexibility and ease under the time constraints of both researcher and operators, while providing the large amount of information that was required to undertake the study.

4.4.3 Implementation of Survey Instruments

(a) Questionnaires

Operators were called before the mail-out, given an introduction to the topic and asked for permission for send the questionnaire. A questionnaire pilot was conducted with an operator within the Palmerston North area. The pilot was chosen due to accessibility. The pilot was successful and only limited changes were necessary. The questionnaire format was modified, and questionnaires dispatched to the identified operators around the Lower North Island. The questionnaires were sent with a cover letter and information sheet, and asked to be returned completed as soon as possible.

(b) Site Visit

In order to ensure maximum response from operators and to see operating conditions first hand, a site visit was conducted within the study area. During the site visit it was possible to see the operation of activities, the equipment used, the treatment of participants, and the attitudes to risk that prevailed. The site visit provides a close connection to the topic and a good means of testing assumptions.

(b) Interviews

Tourism officials were not sent questionnaires as the information needed from them was more of an open discussion on the topic. The views were gained in two ways. Firstly, they were called at the beginning of the study for phone discussions. The topic was discussed, and information and clarification given. At the end of the conversation, they were asked if it was possible to continue the discussion by phone or in person at a later date. Some of the officials were canvassed again for a face-to-face interview. They were contacted by phone and faxed an introduction letter. An open-ended discussion schedule was used to conduct the interview, which was taped with permission (Appendix 3).

4.5 Phase 4 - Analysing the Results

The data from the field study should provide the answers for the questions asked at the outset of the research. The original hypotheses and assumptions were reviewed

and the topic modified in response to information from the field study. Averages were calculated for the questionnaire results, both for the risk assessment and risk management. Information was broken down according to what risks, perceptions, practices, preferences and approaches were relevant to the three case study activities (17 completed questionnaires). Information from other sources i.e. interviews, two questionnaires from other activities and a letter received regarding the research from a case study operator were also used to inform the process.

In analysing the data, information was summarised, themes were identified and the data was placed into manageable bits especially with the use of statistical programmes (Anderson, J. and Poole, M., 1994). Minitab was utilised at first for storing the primary data obtained from the completed questionnaires. MicroSoft Excel and Quattro Pro were used to further analyse and manipulate the data. The data size was small and it was necessary to be careful how the data was interpreted. Over-emphasising the data from a small sample would be inappropriate as would incorporating excessive personal bias into the interpretation. Moreover, the author participated in two of the case study activities before and during the study, and would have knowledge to bring to the topic. Nonetheless, researchers need to distance themselves from the topic to an extent while interpreting the data (ibid.). The data will be analysed to provide the character of the adventure businesses, an investigation into the nature of risks and the most appropriate risk management approaches in adventure tourism.

4.6 The Adventure Business in Operation

Nineteen operators completed the mail-out questionnaire, whilst one operator responded with a letter revealing views and procedures. Out of a total of 26 operators identified, 25 responded positively (one operator declined to participate in the research citing too much work as the reason), 20 send back information giving an almost 80 per cent response rate. The answers given by the operators give a good approximation of the organisational structure of an adventure business in terms of its size, visitor turnover, working days, seasonal influences and operational times (Table 6).

(a) Jetboating Operations

Six jetboating operations completed the questionnaires. These operations were located around the entire Lower North Island in Taupo, Mangaweka, the Wairarapa, Wanganui and Manawatu. On average, most businesses had been in operation for around seven years, with the operators completing the questionnaire being in management for around six years. They work around 356 days for the year in which time they do at least 100 trips each. However, the level of activity is skewed throughout the year and is influenced by seasonal changes. High season occurs at end of the year to the beginning of the next (around December - January), while low season occurs in the middle of the year (around June - July). Visitor numbers totalled over 51,000 for the year June 1997 - June 1998, but the numbers fluctuate greatly with the seasons, with on average around 10,000 and 2,000 participants in high and low seasons respectively. To handle these visitors, there are around three members of staff i.e. two full-time and one part-time in high season and around two staff members i.e. one each full-time and part-time.

(b) Whitewater Rafting Operations

Nine operations completed the questionnaires. These operations were located in Taihape, Turangi, Taupo, Rangitiki and Otaki. Most operations had been in operation for 11 years, with their respondent managers in place for the around the last eight years. Like jetboating, whitewater rafting is also seasonal with the highest activity is the summer period (December - January) and the lowest during winter (June - July). Visitor numbers in high season total around 5000, while in low season can drop to about 430. Total number of visitors for the year June 1997 - June 1998 stand at around 22,000. Regardless of the number, whitewater rafting operations operate around 365 days for the year and in that time run between 100 - 300 trips. Full-time staff in peak season in peak season is about two and down to one in low season, while part-time staff employment can be large (on average seven in peak season and three in low season).

(c) Bungy Jump Operations

There are only two bungy jumping operations in the Lower North island and both completed questionnaires. They are at extremes - one, a small operator-operated

company activity in Mangaweka and the other a larger enterprise in Taupo. They both operate throughout the year, though like the whitewater rafting and jetboating, also have seasonal fluctuations with visitor numbers and staffing. Visitors numbers change from 140 to 20 and 2000 to 700 between higher and low seasons for the smaller and larger companies respectively. Peak season employment stand at around seven (one full-time and six part-time) while low season number drops to none full-time and four part-time workers for the smaller entity. For the larger company, employment usually

Table 6: Structure of Case Study Operations

Parameters	Jetboating	Whitewater Rafting	Bungy Jumping
Completed surveys	6	9	2
Working period	Year round with high and low seasons	Year round with high and low seasons	Year round with high and low seasons
Average total number of visitors from June 1997-1998	51,412	22,100	14,600
Average peak season visitor number	10,100	5009	2140
Average low season visitor numbers	1780	430	720
Average number of years in operation	7	11	8
Average respondent time in management	6	8	6
Staffing on average	3 peak season 3 low season	9 peak season 4 low season	10 peak season 11 low season

stands around 13 in high season (nine full-time and four part-time) and 17 (nine full-time and eight part-time) in low season.

(d) Other Operations

Two questionnaires were completed for activities not designated as case study activities e.g. horseback riding. The operators in question were involved with these activities as well as the case study activities. However, they chose to review the review the topic in the case of the non-case study activities. The responses regarding these activities will be used for comparative purposes within the major case study. Regarding the structure of these businesses, they are also small ventures with a few hundred visitors in total for the year June 1997-1998. Both have been in existence for around five years, having small numbers on staff and working throughout the year and affected by the same seasonal fluxes as jetboating, whitewater rafting and bungy jumping.

4.7 Limitations of the Study

The study was carried out as best as it could be under the circumstances. There was a good response rate to the methods employed. However, there are other circumstances that face this study as follows

- The results are only for the Lower North Island and does not allow for generalisations over the entire adventure tourism industry.
- Only operators within a particular geographical location were sampled so there so there is not a full assessment of risk in adventure activities.
- The site visit was conducted unknowingly during an inaccessible period for operators; low-season vacation period and tourism conferences made some operators unavailable for interview.
- The study, as it is highly qualitative, will be open to varied interpretations.
- Mail-out questionnaires, which were used to conduct the survey, are not always a reliable method to gather information as questionnaires can be either ignored or not returned quickly.
- Operators were chosen due to their advertising, as well as advertising found in Palmerston North. However, not all operators advertise widely. Some operators relevant to the study were found while on the site visit. These

operators were called and sent information when the researcher returned to Palmerston North. Hence, they had been excluded from the choice of site visit.

Chapter 5: Assessing Risk in Adventure Activities

5.1 Introduction

This chapter seeks to assess the risks present in adventure tourism activities in the Lower North Island by identifying, estimating and evaluating possible sources of risk. This is based on the survey results for jetboating, whitewater rafting and bungy operations in the Lower North Island. Operators were interviewed about particular physical risks affecting their businesses, their experiences with risks and hazards, their risk management practices, and their opinions on particular risk management approaches. The chapter will first describes how the three case study activities related to the four sources of risk (i.e. the natural environment, clients, guides and equipment), after which an overall assessment is made.

5.2 Source of Risk: The Natural Environment

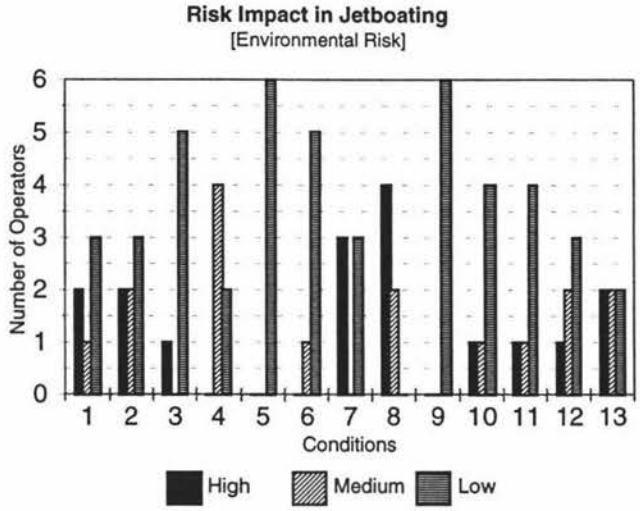
The natural environment creates a significant source of risk for outdoor activities. Thirteen environmental conditions were identified that could potentially affect adventure businesses. Operators were asked about the impact these conditions might have on their operations, as well as the frequency of their occurrence.

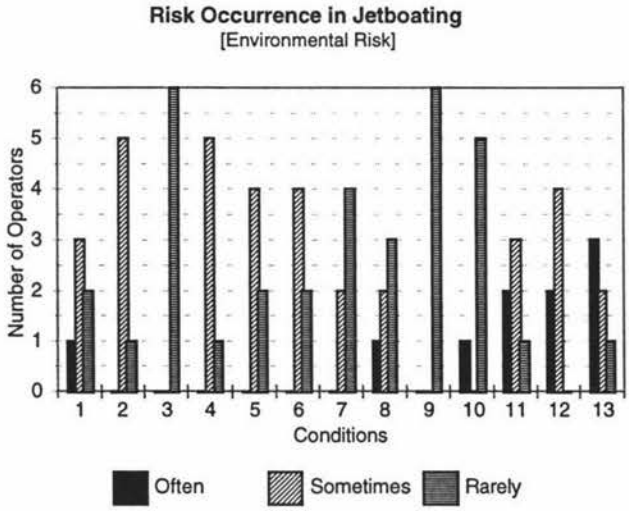
5.2.1 Jetboating

(a) Source

Most environmental conditions appear relatively benign for jetboating (Figure 5.1). Landslides, changing river eddies and bush fires are rare occurrences. Only river debris is seen as a high impact on risk and it only occurs occasionally. Moderate wind and rain are considered a medium risk which arise occasionally. Opinion is divided on the impact of various conditions such as low visibility and river bed boulders. Views are split on flood and high wind between those seeing regarding them as a high impact and those seeing them as a low impact. All other conditions (i.e. landslides, low air and water temperatures, bush fire, changing eddies in the river, fast currents and falling river levels) are almost unanimously seen as posing low risk.

Figure 5.1: Environmental Risk Impact and Occurrence in Jetboating





Conditions:

1. Flood, 2. High wind, 3. Landslides, 4. Moderate wind and rain, 5. Low air temperature, 6. Low visibility/fog, 7. Debris in river, 8. Bush fire, 9. Changing eddies in river, 10. Falling river levels, 11. Fast currents

(b) Experience

Environmental conditions result in few cancellations for jetboat operations, but operators still regard themselves vulnerable to various individual conditions. Six conditions stand out: flood, moderate wind and rain, river debris, falling river levels, fast currents and river bed boulders. The frequency of other conditions is mixed (except for bush fire which is not considered a problem by any of the operators).

Few operators claimed to have cancelled activities because of environmental conditions over the year prior to the interview. In fact, only two operators were responsible for 48 out the 50 cancellations recorded. This is largely as a result of flood and moderate wind and rain; both conditions identified as points of vulnerability for their particular operations. Low visibility/fog also caused a few cancellations but is not seen as a particularly significant impact.

(c) Response

All respondents monitor weather and river conditions. The use of local knowledge and observation are by far the most chosen methods. Few operators receive individual bulletins, but many heed their radio. Other methods in use are river gauge monitoring, utilising the Met Service 0900 number, teletext and watching the television.

5.2.1 Whitewater Rafting

(a) Source

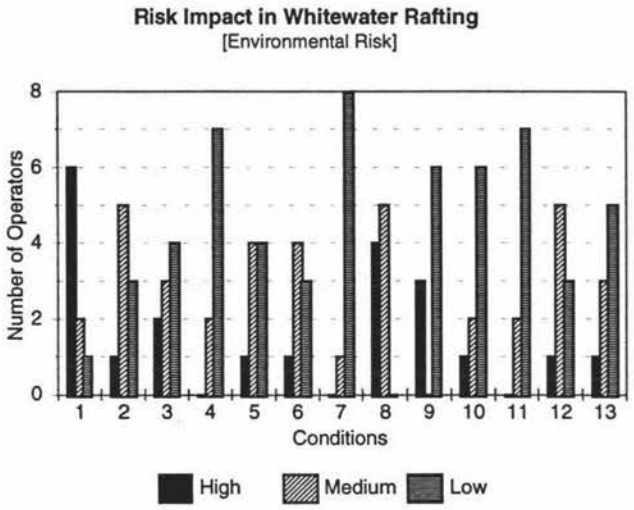
Whitewater rafting appears to be more challenged by environmental conditions than jetboating (Figure 5.2). Floods are considered to pose the greatest risk by six out of nine respondents, even though floods rarely occur. There is some concern regarding river debris, which is seen to have a moderate impact. A few environmental conditions are regarded as moderate impact, but low visibility/fog, changing eddies in the river, falling river levels, river bed boulders, bush fire and moderate wind and rain) are considered of limited consequence. Opinion on landslides is split among respondents from low risk to high risk, though landslides rarely occurred. In actuality, most conditions nominated occur only rarely. The exceptions being low water temperatures, river bed boulders and low air temperatures which are relatively frequent.

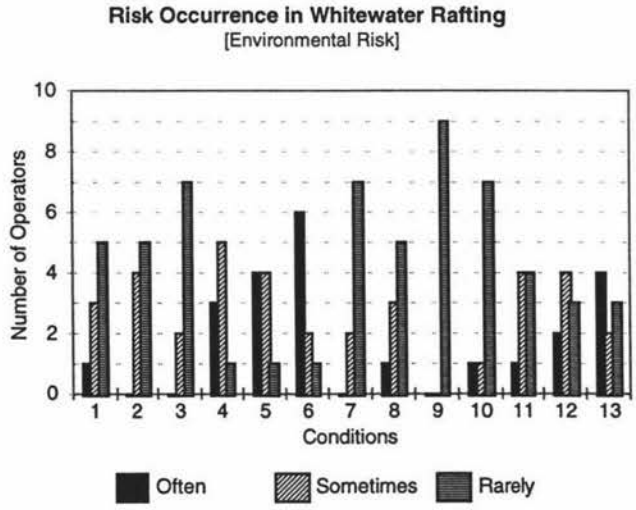
(b) Experience

Vulnerability to environmental conditions is significant in whitewater rafting. Operators consider themselves vulnerable to at least nine of the thirteen conditions under study. The threats are from flood, moderate wind and rain, low air and water

temperatures, river debris, changing eddies in the river, falling river levels, fast currents and boulders in the river bed. Eight conditions were responsible for cancellations during the period June 1997-June 1998. Five of these conditions are on the high vulnerability list. In total, there were around 175 days of operation (or about 0.5 per cent of total potential operations) worth of activities cancelled during the past year. Floods were responsible for 78 cancelled days affecting six out of nine operators.

Figure 5.2: Environmental Risk Impact and Occurrence in Whitewater Rafting





Conditions:

1. Flood, 2. High wind, 3. Landslides, 4. Moderate wind and rain, 5. Low air temperature, 6.Low visibility/fog, 7. Debris in river, 8. Bush fire, 9. Changing eddies in river, 10. Falling river levels, 11. Fast currents

Falling river levels and fast currents also made for unfavourable conditions with 29 and 38 cancelled days respectively. However, both conditions only affected two operators each, suggesting that localised circumstances play a significant role in risk. Other environmental conditions which resulted in cancellations were low air temperature, low visibility/fog, landslides, and river debris. No cancellations were effected because of river bed boulders, changing eddies in the river, bush fire, low water temperature or moderate wind and rain.

(c) Response

All operators monitor environmental conditions. Observation and local knowledge are used extensively by all nine operators. Four operators received bulletins while seven listened to the radio for information. Seven of the nine operators also used other methods to assist them in gauging the proper conditions to carry out activities. Newspaper, teletext and television forecasts are consulted as well as the Met Service 0900 number. River levels are checked using the Electricity Corporation of New Zealand (ECNZ) river flow information line and calibration tower. Use of the Met Service, ECNZ line and television forecasts are especially widespread.

5.2.2 Bungy Jumping

(a) Source

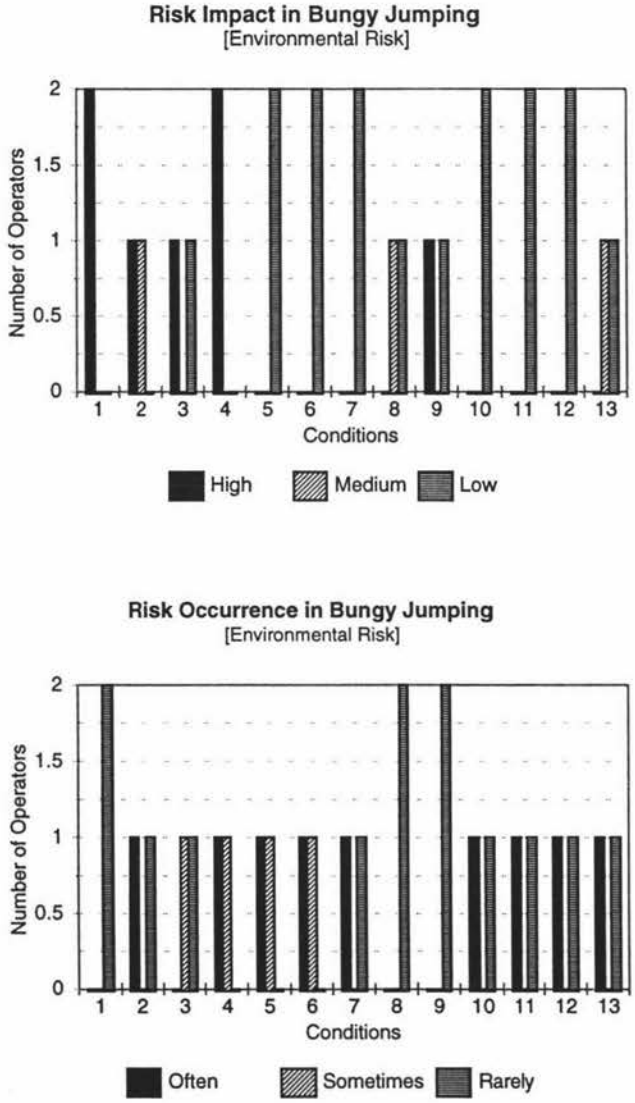
Bungy jumping seems least affected by environmental conditions of the three case study activities (Figure 5.3). Only two conditions rate as high impact i.e. floods and moderate wind and rain. Most environmental conditions are considered low impact to both bungy jump operators. Opinion is divided over several conditions such as including bush fire, landslides, river bed boulders, river debris and landslides which occur occasionally. Most events seem to occur occasionally. River debris, bush fire and floods are the exceptions which both operators consider rare.

(b) Experience

Bungy operations seem to have little vulnerability to environmental conditions. Neither operation is vulnerable to moderate wind and rain, low visibility/fog, river

debris, bush fire and river bed boulders, while both are susceptible to high wind. For several conditions there is a split in opinion, probably reflecting location and history. No days are reported as cancelled over the year prior to the interview, which contrasts with the cancellations in the other activities.

Figure 5.3: Environmental Risk Impact and Occurrence in Bungy Jumping



Conditions:

1. Flood, 2. High wind, 3. Landslides, 4. Moderate wind and rain, 5. Low air temperature, 6.Low visibility/fog, 7. Debris in river, 8. Bush fire, 9. Changing eddies in river, 10. Falling river levels, 11. Fast currents

(c) Response

Both operators monitor conditions surrounding their activities. Observation and local knowledge are important to both operations. None receive individual

bulletins. One receives information from the radio. Another source of information identified is airport data.

5.3 Source of Risk: People - Clients

Clients and their behaviour constitute a source of risk separate from activity or location. Clients bring their own expectations, attitudes and actions to the experience which can have a significant impact on the activity. Eighteen client conditions were identified as potential sources of risk for the survey.

5.3.1 Jetboating

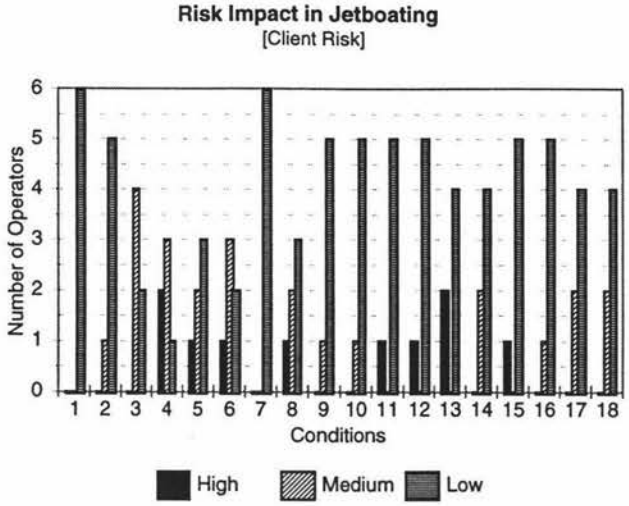
(a) Source

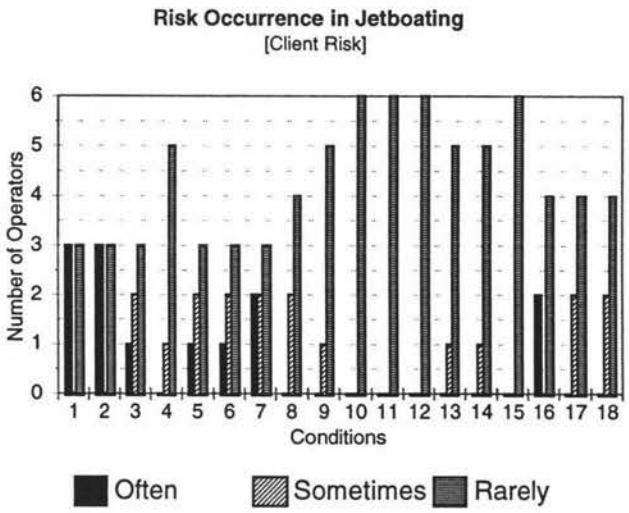
Client circumstances are not considered significant sources on risk by operators (Figure 5.4). None was selected as a particularly high impact. Fear is considered as imposing a moderate level risk. Thirteen conditions are thought to have limited. impact. Consensus appears regarding physical disability and lack of client experience as they, which are considered low impact by all operators. However, opinion is divided over several other conditions, such as foolhardiness, over enthusiasm, health concerns and nervousness. Moreover, most conditions are rare in occurrence such as bodily injury and immersion in water. Exceptions are nervousness, fear, over enthusiasm, and physical disability where opinions vary.

(b) Experience

Jetboat operations seem to have limited negative experience with their clients. In general, clients are thought to have a fair idea of the risks involved when they arrive. However, there is a division in opinion on the extent of client knowledge. This amounts to 25 per cent to 75 per cent of clients for two operators, while another two believe 75 per cent -100 per cent of their clients have adequate knowledge about jetboating activities. Few operators considered that either all (100 per cent) or few (less than 25 per cent) of their clients understood the nature of the activity. As for groups, nine operators consider group dynamics significant to risk during the activity. Incidents such as showing off, trying too hard and over reliance on experienced participants are encountered but only rarely. Peer pressure is a

Figure 5.4: Client Risk Impact and Occurrence in Jetboating





Conditions:

1. No experience in activity, 2. Lack of fitness, 3. Fear, 4. Foolhardiness, 5. Nervousness, 6. Over Enthusiasm, 7. Physical disability, 8. Health concerns e.g. heart problems & asthma, 9. Poor eyesight, 10. Mental disability, 11. Hypothermia, 12. Bodily injury, 13. Fatigue, 14. Agitation (shaking), 15. Immersion in water, 16. Splashed by water, 17. Lack basic caution, 18. Overconfident

more frequent occurrence.

(c) Response

Operators do not seem to regard client conditions as mild consequences. Age restrictions are lenient. Age limits for clients range from zero to 100 years. To deal with the effects of group situations and as well as aberrant individuals, operators

use four methods i.e. careful explanation of the risks, repeated instructions, extra vigilance and if necessary, activities would be cancelled. However, no operator has reported cancelling an activity because of client factors. A careful explanation of the risks is by the far the most popular method for management, getting five out of six votes from operators. No operators opted for the use of threats.

5.3.2 Whitewater Rafting

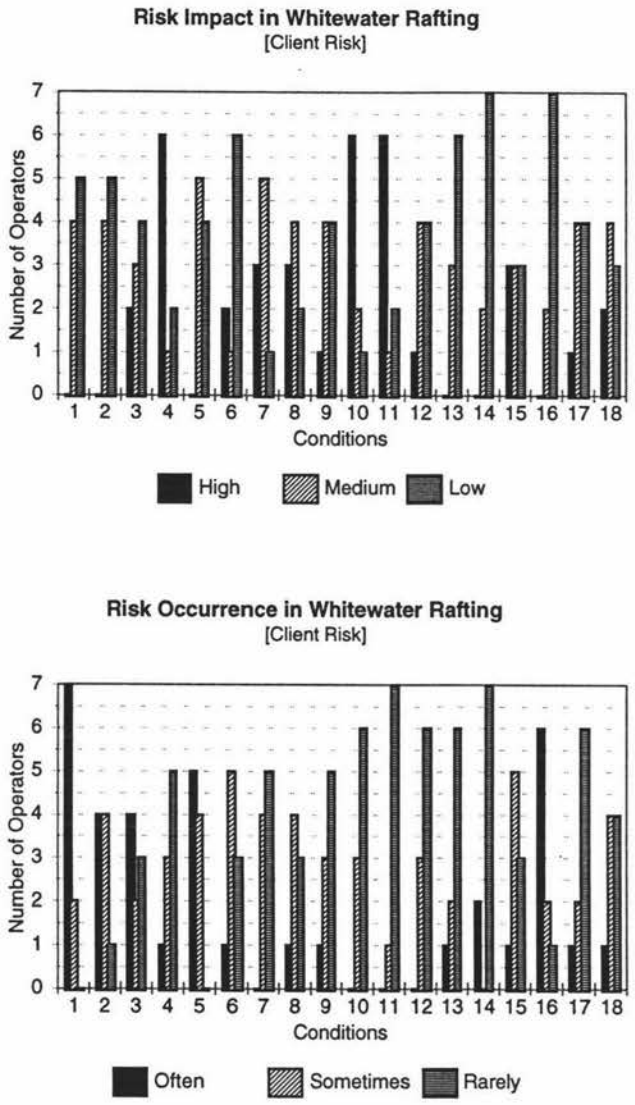
(a) Source

Client conditions pose a relatively moderate risk for whitewater activities (Figure 15). Consensus is particularly higher among whitewater operators than jetboating operators. Six out of nine regard three conditions as posing high risk, namely mental disability, hypothermia and foolhardiness. Others are considered moderate impact, for example, health concerns, overconfidence and physical disability. A further three conditions i.e. shaking, splashed by water and fatigue are deemed as low risk. Opinion is divided over lack of client experience in activity, fear, lack of fitness, nervousness, bodily injury, lack of basic caution and water immersion. Only three conditions occur regularly, namely lack of client experience, nervousness and being splashed by water. The majority of client conditions occur rarely.

(b) Experience

No operator considers that all clients have an adequate idea of the risks of whitewater rafting when they arrive to do an activity. Four out of nine operators consider that only some do (i.e. 25 per cent -75 per cent), three operators consider that most do (i.e. 75 per cent -100 per cent) and two operators consider that few clients (i.e. less than 25 per cent) understand the risks involved in the activity. All nine operators consider that group dynamics add to the risk during a whitewater activity, the most significant circumstance being clients succumbing to peer pressure. Showing off is encountered occasionally. Trying too hard and over reliance on experienced participants by inexperienced participants occurs, although rarely.

Figure 5.5: Client Risk Impact and Occurrence in Whitewater Rafting



Conditions:

1. No experience in activity, 2. Lack of fitness, 3. Fear, 4. Foolhardiness, 5. Nervousness, 6. Over Enthusiasm, 7. Physical disability, 8. Health concerns e.g. heart problems & asthma, 9. Poor eyesight, 10. Mental disability, 11. Hypothermia, 12. Bodily injury, 13. Fatigue, 14. Agitation (shaking), 15. Immersion in water, 16. Splashed by water, 17. Lack basic caution, 18. Overconfident

(c) Response

Whitewater rafting operations respond seriously to risk. Age limits are more controlled for whitewater activities than in the other two activities. The limits range from babies of two years (when accompanied by parents) to the elderly (mid 80s plus), though some operations have no age limits. Both groups and individuals are

carefully managed. All nine operators rely on careful explanation of risk and repeated instructions. In addition, five operators use extra vigilance over their proceedings. Three operators each will lessen the risks and cancel activities if necessary, but no operator chose the use of threats. Five operators have already cancelled activities because of client conditions. Reasons given for cancellations included conditions not being suitable for customer capability, rising river levels, drunk clientele, back-related problems, clients appearing too late in the day, overweight clients that could not fit into the lifejacket provided, and in the case of one group, they did not look or act like they could handle the activity. Three operators use additional means of managing their clients. One categorises participants into three groups (i.e. no self reserve; average; experienced and capable) to be able to better prepare activities. Another operator takes aside people who present particular difficulty, explaining the activity to them in detail. Land instruction and trip management forms are used by another operation. These advise on such things as trip procedure, stress management skills and demonstrating commands.

5.3.3 Bungy Jumping

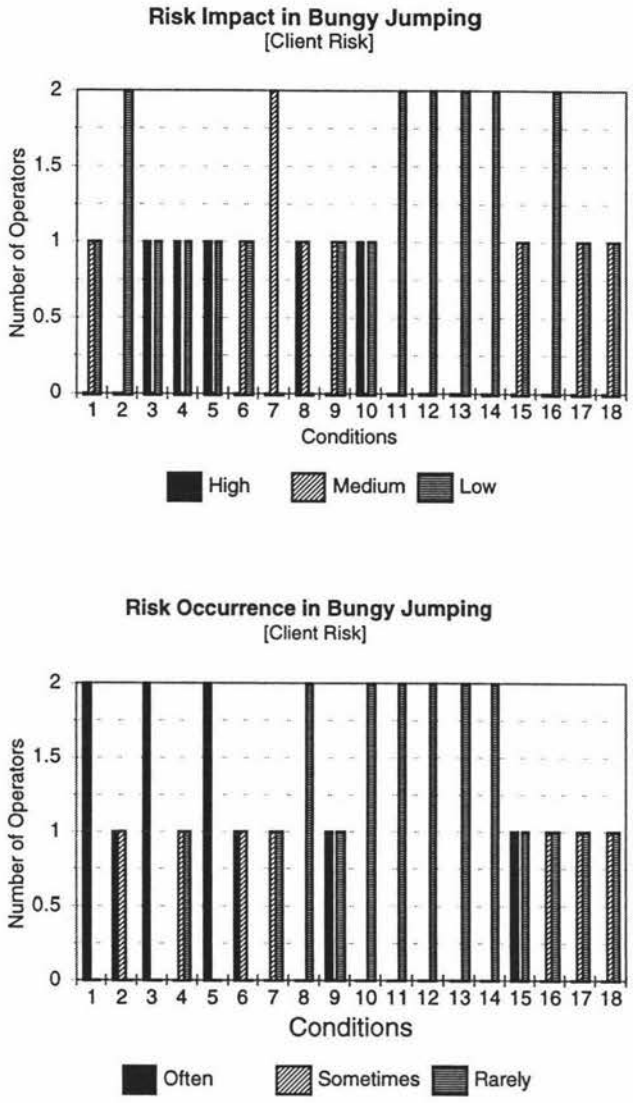
(a) Source

Client conditions do not seem to be an issue for bungy operations (Figure 5.6). No condition is regarded as particularly high impact. Six conditions (lack of fitness, hypothermia, bodily injury, fatigue, agitation and being splashed by water) are considered low impact by both operators. Only three conditions seem to occur often i.e. no client experience in activity, fear and nervousness. Six occur rarely i.e. health concerns, mental disability, bodily injury, hypothermia, fatigue and agitation. The remainder such as lack of fitness, foolhardiness, overconfidence and immersion in water are encountered infrequently.

(b) Experience

The operators have different views on the extent of client knowledge. One considers that some clients (i.e. 25 per cent - 75 per cent), while another considers that most clients (i.e. 75 per cent - 100 per cent) know the risks of their chosen

Figure 5.6: Client Risk Impact and Occurrence in Bungy Jumping



Conditions:

1. No experience in activity, 2. Lack of fitness, 3. Fear, 4. Foolhardiness, 5. Nervousness, 6. Over Enthusiasm, 7. Physical disability, 8. Health concerns e.g. heart problems & asthma, 9. Poor eyesight, 10. Mental disability, 11. Hypothermia, 12. Bodily injury, 13. Fatigue, 14. Agitation (shaking), 15. Immersion in water, 16. Splashed by water, 17. Lack basic caution, 18. Overconfident

activity. The operators believe that group dynamics can be a contributor to risk during an activity. However, none of the circumstances are deemed as particularly significant. Three circumstances i.e. succumbing to peer pressure, showing off and wanting to belong occur but occasionally.

(c) Response

Age limits are imposed by bungy operations. Age ten is the minimum age permissible. However, no maximum limit is applied. To deal with both groups or individuals, vigilance is the major method used by operators. In addition, risks are carefully explained and instructions are repeated. Lessening the risks, issuing threats and cancellations are regarded as options. Nonetheless, one operator has already cancelled an activity because of client factors, in this case the prospective client was intoxicated.

5.4 Source of Risk: People - Guides

Guides are taken for granted as a safety net for their clients during activities. They provide the control and focus needed for the activity. However, their attitudes and actions can also be potential sources of risk. Nine characteristics of guides were chosen for examination.

5.4.1 Jetboating

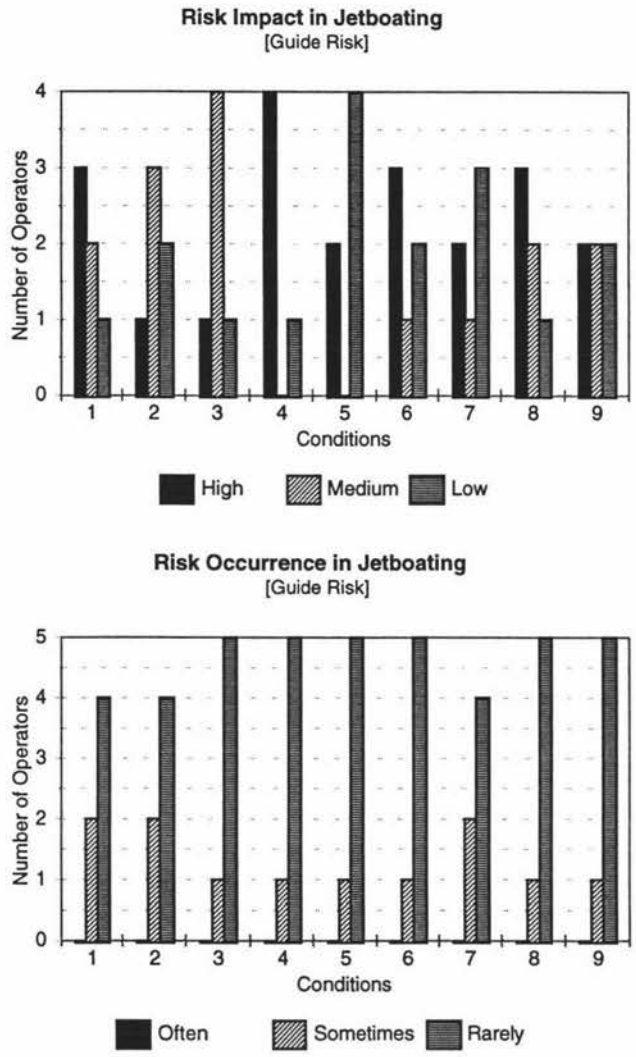
(a) Source

Guides can contribute to risk in jetboating activities (Figure 5.7). Although there is no overall consensus on their impact, at least three of six operators consider guides' attributes to be a potential source of risk, for example those that are arrogant, have no training in risk management, or injured and unable to fulfil their tasks. Unhelpful guides are considered moderate risk, while being unfit seems relatively low risk for a jetboating guide. Operators conclude that most guide characteristics occur relatively rarely.

(b) Experience

Five out of the six operators believe there is difference between the attitude of guides trained formally and those that learn from experience. Several views are held on the issue of training. In one operator's view, some attitude changes are needed in guides trained externally and formal training is only carried out within the organisation. Another view held concludes that if guides do not make mistakes while training, then they may not be able to handle real situations, thus putting

Figure 5.7: Guide Risk Impact and Occurrence in Jetboating



Conditions:

1. Not trained in risk management, 2. Unassertive, 3. Unhelpful, 4. 'Beginner', 5. Unfit, 6. Injured and unable to fulfil tasks, 7. Injured but able to complete activity, 8. Arrogant, 9. Too few

people's lives at risk. Another view expressed is that formal training in-house ensures correct application to the job, while experience is valuable mainly for general purposes. However, another operator claims only to use local guides that know the area. In general, it seems that guides with external training are not particularly welcome, and operators prefer to train their staff internally. Five operators have formal in-house training for their guides. Few operators recruit only experienced guides. Many guides learn their skills piece by piece on the job.

(c) Response

Jetboat operations do not seem worried about guide characteristics as a source of risk. Few disciplinary measures are used by the respondents against guides that do not provide appropriate care, control or assistance during an activity. Four utilise an in-house disciplinary process and additional training. None of the six operations have cancelled activities in the period June 1997- June 1998 because of problems with guides.

5.4.2 Whitewater Rafting

(a) Source

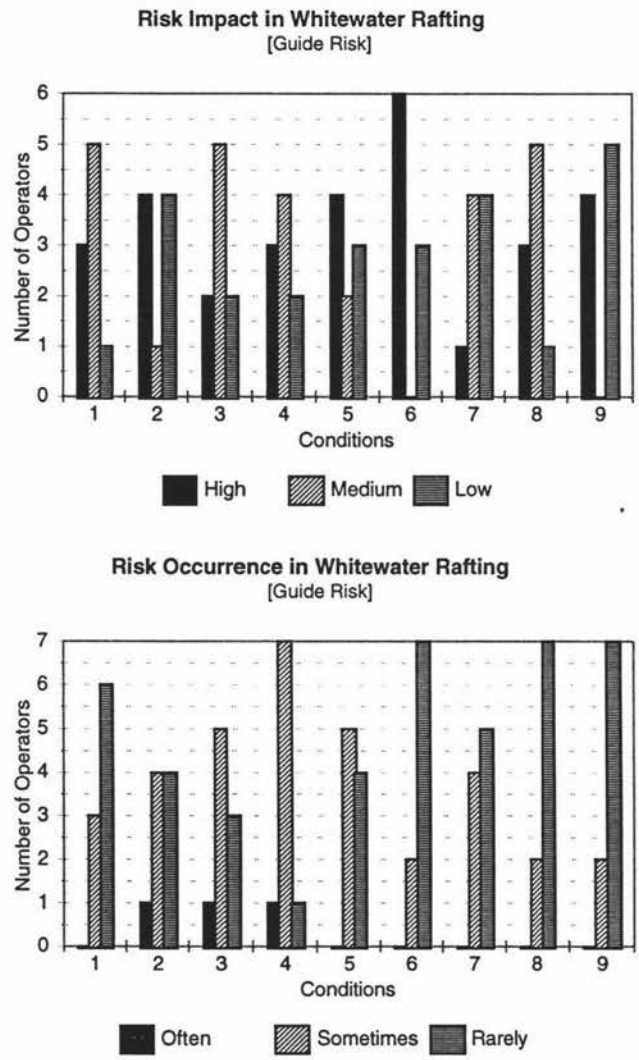
As with jetboating, there is mixed response on guide risk to whitewater rafting activities (Figure 5.8). Views are slightly more consistent for whitewater rafting respondents. The single highest impact on risk is from injured guides that are unable to complete their tasks. Meanwhile, features such as no training in risk management, lack of helpfulness, being a 'beginner', and arrogance are considered seriously moderate risk. As with jetboating, most guide characteristics rarely occur. Notable exceptions to this are lack of helpfulness, beginner or unfit guides, whose presence can be encountered on a low number of occasions.

(b) Experience

Guides are considered a fairly moderate source of risk. Diverse views abound as to guides' attitude whether they were formally trained or just learnt from experience. Views are held that a guide's views are dependent of how he/she is trained. Meanwhile, two operators believe in the role of experience. Experience is supposed to be far better than formal training, as inexperienced guides learn from more experienced, sensible and trustworthy guides. To this effect, adventure tourism students are sometimes employed part-trained guides. A contrary view is held by two respondents. They consider experienced guides to be over confident and lacking in people skills which leads to problems. Skills can be taught, but personality training is next to impossible. All nine respondents expect that their guides will learn on the job. Eight operations have formal in-house training. For some operations, guides with external training are welcome and many companies

only recruit experienced guides. One operator indicated firing as an option. An external disciplinary process, monetary

Figure 5.8: Guide Risk Impact and Occurrence in Whitewater Rafting



Conditions:

1. Not trained in risk management, 2. Unassertive, 3. Unhelpful, 4. 'Beginner', 5. Unfit, 6. Injured and unable to fulfil tasks, 7. Injured but able to complete activity, 8. Arrogant, 9. Too few

fines and suspension from work are not considered options. According to one operator, "guides that mess up, just do not get a second chance".

(c) Response

The role that guide risk plays in whitewater activities seems to be well recognised by respondents. Several disciplinary methods are in use. An in-house disciplinary

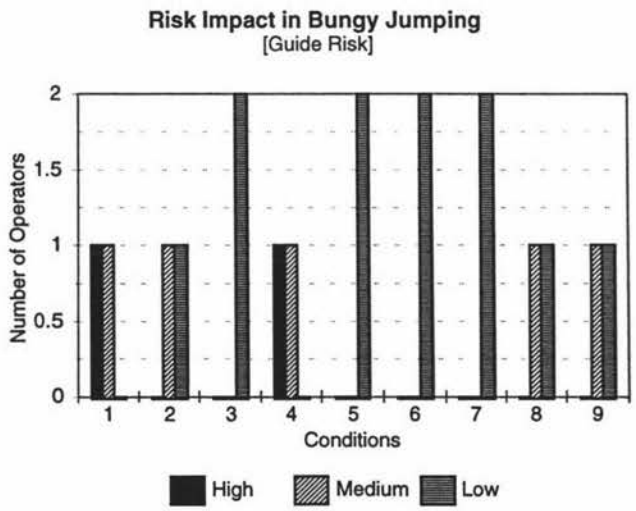
process and additional training are the major methods used. Suspension from work is also an option, so is an external disciplinary process and instant firing for serious offences. One operator indicated that a warning would be sent to the guide as fault for the incident and a letter of apology sent to the affected client. The incident would be recorded on the guide's employment contract. About half of the respondents have cancelled activities because of guide characteristics. In one case, cancellation was done because rising river levels would have required reassignment of clients, resulting in an increased ratio of clients to guides to 1:9 from 1:4. Changing conditions and inadequate number of staff also prompted cancellation of activities by another respondent. In two other cases, guides cancelled as they were not satisfied with the river conditions.

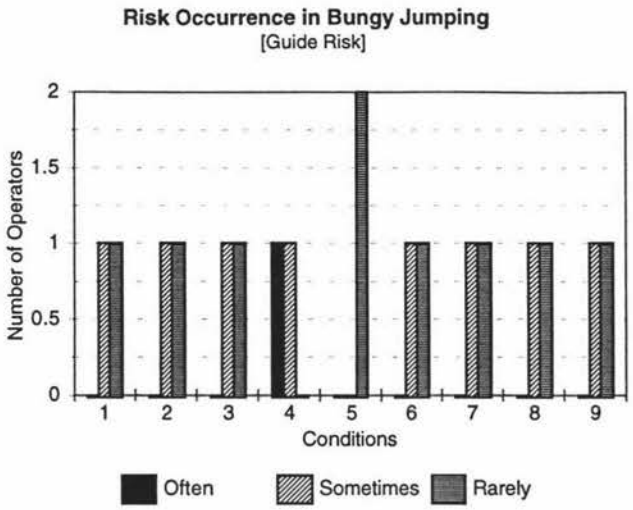
5.4.3 Bungy Jumping

(a) Source

As with jetboating, guides are considered to contribute little to the risk for bungy activities (Figure 5.9). Low risk cases are thought to include unhelpful, injured and unfit guides, Respondents are divided in their opinions, but share some obvious concern in situations where guides are not trained in risk management or are arrogant. Nearly all guide characteristics occur occasionally, but unfit guides are considered a rare occurrence.

Figure 5.9: Guide Risk Impact and Occurrence in Bungy Jumping





Conditions:

1. Not trained in risk management, 2. Unassertive, 3. Unhelpful, 4. 'Beginner', 5. Unfit, 6. Injured and unable to fulfil tasks, 7. Injured but able to complete activity, 8. Arrogant, 9. Too few

Guide risk in bungy operations is carefully controlled. For offences, guides could be instantly fired. The preferred methods of discipline are an in-house disciplinary process and additional training. Monetary fines, suspension from work and an external disciplinary process are not used. Neither operator has cancelled activities due to guide factors.

(b) Experience

The bungy operators treat guides similar to that shown by jetboat operators. An in-house formal training process and on the job learning are the most favoured means of training.

5.5 Source of Risk: Equipment Risk

Adventure activities are equipment orientated as well as location dependent. Jetboating, bungy jumping or whitewater rafting depend on equipment such as harnesses, lifejackets, rafts, boats, and the like. Eight equipment conditions were identified for closer examination.

5.5.1 Jetboating

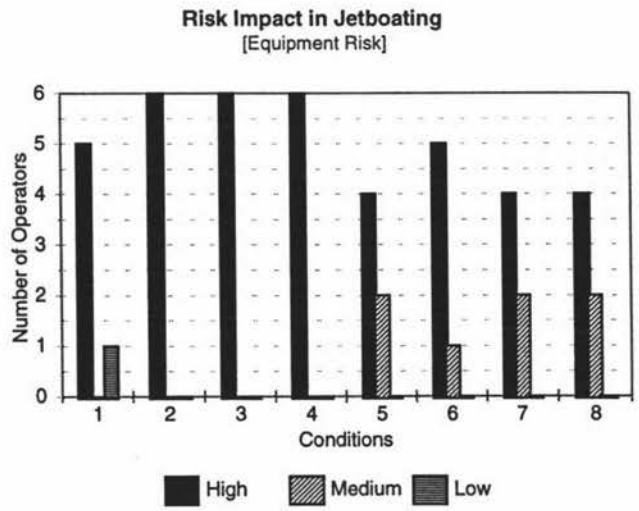
(a) Source

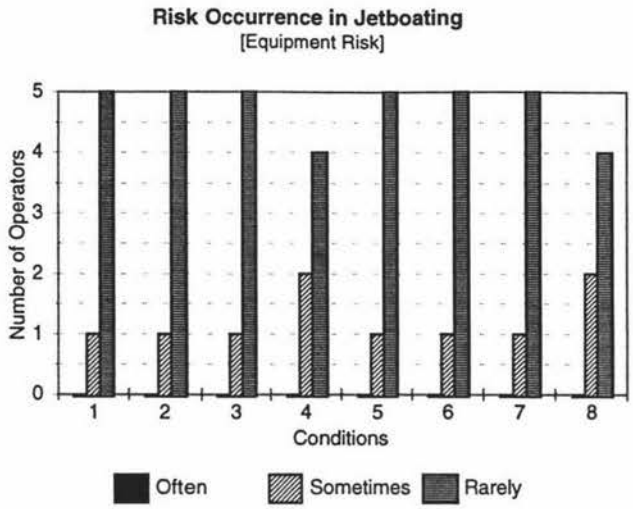
Equipment conditions pose a significant risk for jetboating activities (Figure 5.10). All six operators concur that faulty parts/features, irregular maintenance, as well as wear and tear are seriously high risk. Incorrect operation of equipment and not repaired equipment are also considered high risk by five out of six operators. Design faults, lack of spare parts/equipment, and loss of equipment rate as moderate risk. All equipment conditions appear to occur rarely, except design faults and wear and tear which are occasional occurrences. No condition is considered frequent.

(b) Experience and Response

Equipment inspection is done at three times i.e. before and after an activity as well as every day. Four operators out of six inspect their equipment before every activity and daily, while three out of six inspect after an activity. Activities have been cancelled because of equipment conditions by three out of six operators. One operator gave three reasons for his cancellations, namely a fault which could not be properly repaired, inability to call on another boat and a flood. Two operators indicated that engine troubles had caused their cancellations.

Figure 5.10: Equipment Risk Impact and Occurrence in Jetboating





Conditions:

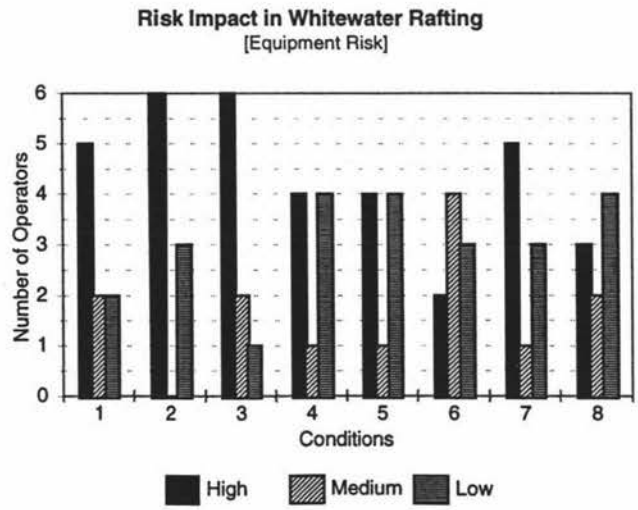
1. Incorrect operation, 2. Faulty parts/features, 3. Irregular maintenance, 4. Wear and tear, 5. Loss of Equipment, 6. Equipment not repaired, 7. No spare parts/equipment, 8. Design faults

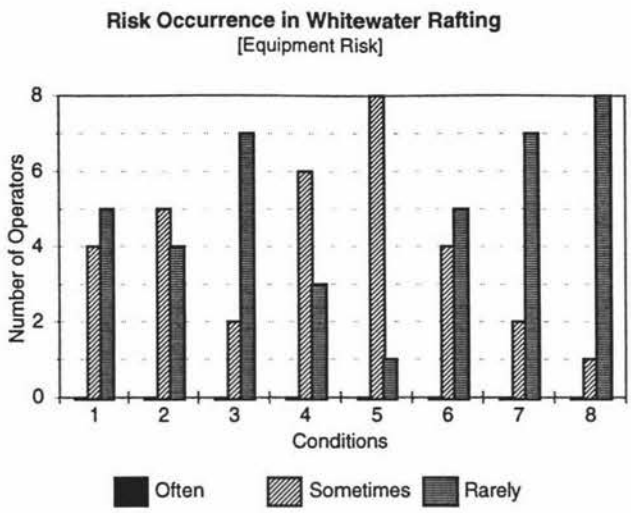
5.5.2 Whitewater Rafting

(a) Source

There is no condition of particular concern as high impact for whitewater rafting operators (Figure 5.11). Four equipment conditions are considered moderate risk i.e. incorrect operation of equipment, faulty parts/features, irregular maintenance and lack of spare parts/equipment. Opinion is divided on the impact of wear and tear, as well as

Figure 5.11: Equipment Risk Impact and Occurrence in Whitewater Rafting





Conditions:

1. Incorrect operation, 2. Faulty parts/features, 3. Irregular maintenance, 4. Wear and tear, 5. Loss of Equipment, 6. Equipment not repaired, 7. No spare parts/equipment, 8. Design faults

loss of equipment, lack of repair and design faults. No conditions is considered frequent. In fact, wear and tear, design faults and lack of spare parts/equipment are regarded as almost wholly non-existent, whereas equipment loss occurs occasionally.

(b) Experience and Response

Consensus exists among whitewater rafting operators about the care needed to maintain their equipment. All nine operators inspect their equipment before undertaking an activity. Seven out of nine operators inspect their equipment after an activity. Daily and monthly are the other times used for inspections. One operator indicated that a major check is done after every three groups of clients. Only two out of nine operators have cancelled activities because of equipment conditions. For example, in one case there was a puncture in the raft at the start of the activity.

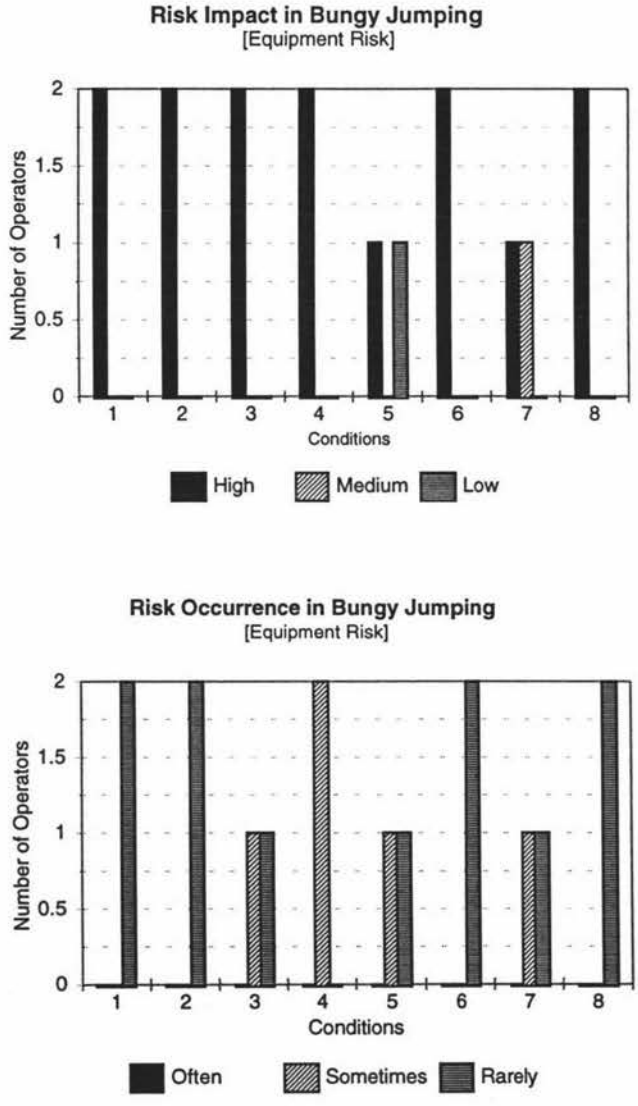
5.5.3 Bungy Jumping

(a) Source

As with jetboating, equipment conditions are a highly significant source of risk for bungy operators (Figure 5.12). Six conditions of the eight are rated as high risk by

both bungy operators, namely incorrect operation of equipment, faulty parts/features, wear and tear, irregular maintenance, equipment not repaired and design faults. Opinions differ over the impact of equipment loss and lack of spare parts/equipment. As with whitewater rafting and jetboating, none of these conditions occur frequently. Four conditions i.e. incorrect operation, faulty parts/features, equipment not repaired and design faults are considered non-existent, while wear and tear appears intermittently. Irregular maintenance, loss of equipment and lack of spare parts/equipment tend to be infrequent.

Figure 5.12: Equipment Risk Impact and Occurrence in Bungy Jumping



Conditions:

1. Incorrect operation, 2. Faulty parts/features, 3. Irregular maintenance, 4. Wear and tear, 5. Loss of Equipment, 6. Equipment not repaired, 7. No spare parts/equipment, 8. Design faults

(b) Experience and Response

Bungy operators, like whitewater rafting operators, concur on the type of inspection needed for their equipment. Both operators inspect their equipment before every activity and every day. They also inspect their equipment once a week and once a month. Neither of the two operators have cancelled activities because of equipment conditions.

5.6 Adventure Activities: A Risk Assessment

An overall assessment of the risk found in the three case study activities is the domain of this section. Before providing the analysis of risks in adventure activities in the Lower North Island, calculations used in the analysis will be described.

5.6.1 Assessment Calculations

For the survey, operators rated their perceptions of the impact and occurrence of each risk condition. The tally of responses from these answers was used to create the tables used for the individual analysis of risk in the preceding sections. In this section, the impact and occurrence scores are multiplied to give an overall assessment of the perceived exposure to risk. A rating scheme of between one and three for both parameters (i.e. high, medium, low) is set up, therefore multiplying provides exposure scores of between one and nine. The resulting scores have been summed across attributes within each of the four categories of risk source (environment, guide, client and guides), and then divided by the number of attributes to provide comparability between scores. These scores (with a range of one to nine) have then been averaged across operators to provide a joint profile of vulnerability for each of the three activities. The result is a collective perception of risk and vulnerability for the case study activities.

5.6.2 Nature of Risk in Case Study Area

In general, operators do not consider themselves very susceptible to risk judging from the low scores, most scores being less than five (Fig 5.13-5.15). This is not surprising as higher scores would raise questions over the feasibility of the activities. Nonetheless, the scores still indicate some level of risk present, although perceived vulnerability among operators and activities differ.

The vulnerability scores by sources are cumulative to provide an overall picture of risk by activity. When examined by individual operator, the scores appear to relate to location history and management style. This is most evident in difference between the two bungy jump operators, which precludes using an average for this activity.

Figure 5.13: Risk Profile of Jetboat Operators

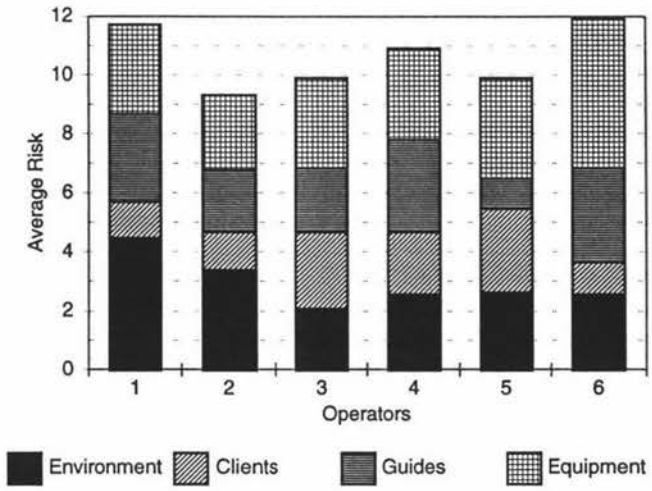


Figure 5.14: Risk Profile of Whitewater Rafting Operators

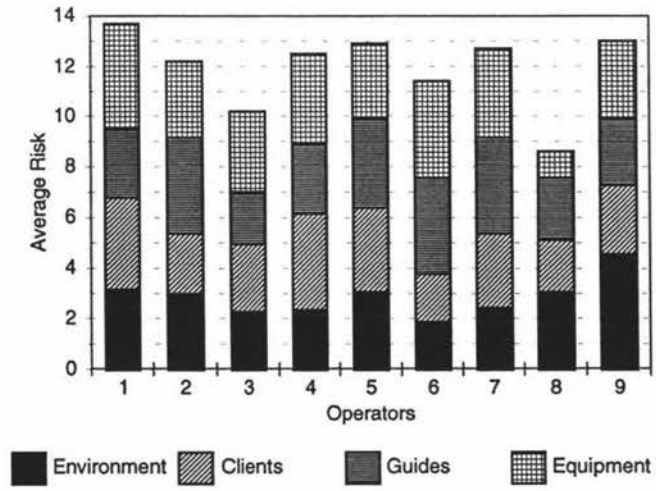
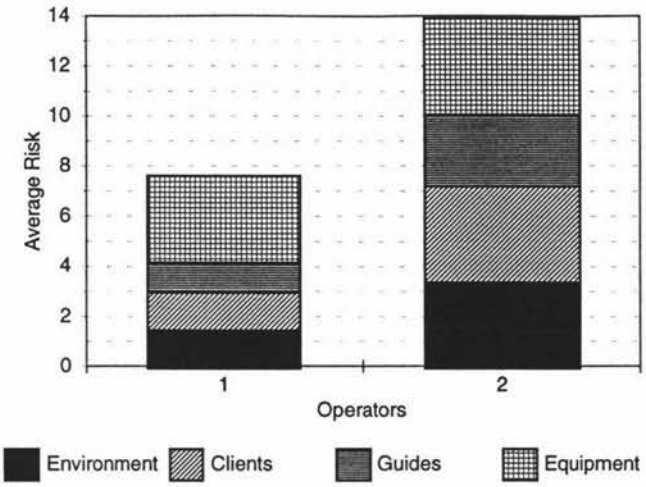


Figure 5.15: Risk Profile of Bungy Jump Operators

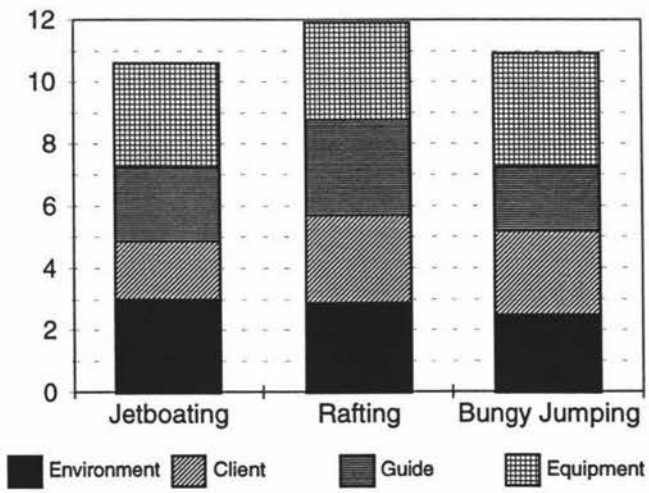


The variations among whitewater rafting and jetboating operations are less pronounced. This may result from relatively homogenous conditions through the Lower North Island for these activities. On these grounds, an overall risk profile was developed for these two activities and another for all operators average for the three activities.

5.6.3 An Overall Assessment

Of the three activities, whitewater rafting is perceived to be the most risky (Figure 5.16). Jetboating is perceived to be the least risky and bungy jumping occupies a middle position, though as stated before the bungy jumping scores are somewhat tenuous.

Figure 5.16: Overall Risk Profile



It is the perceived people risk (i.e. guides and clients) in whitewater rafting that increases its susceptibility. People risk is higher in rafting than in either jetboating or bungy jumping. The perception of environment risk is relatively the same for all three activities, as is the case with equipment risk. Having people risk as the major determinant in the final rating is contrary to what was assumed at the beginning of thesis. It was expected that the environment risk component could have been the determining factor. Environment and equipment risk are considered serious, but it is the people factor where lie the significant differences.

The greater role of people risk in whitewater rafting could be attributed to the longer time and effort needed for whitewater activities compared to jetboating and bungy jumping. Rafting expeditions usually last from one hour (compared to minutes for a bungy jumping and 30-45 minutes for a jetboat ride), to maybe one or two days. Lots of skill, stamina and alertness are needed on both the part of the clients and guides to sustain the activity especially for such a protracted period. Consequently, people risk plays a slightly higher role in the life of a whitewater rafting expedition than that of the other activities.

The overall difference in the scores among the activities is relatively low. It is recognised that there is some degree of risk in adventure activities. This is needed to encourage participation and is part of the basic nature of adventure activities. These case study activities are perceived by operators to be moderate risk, thereby high encourage to stimulate interest, but low enough to allay serious fears of safety.

Chapter 6: Managing Risk in Adventure Activities

6.1 Introduction

Managing physical risk is necessary to the continuity of adventure tourism. In theory, it means that unnecessary risk will be reduced, accidents would diminish and participants will continue to experience the expected thrills and excitement of adventure activities. In practice, it is difficult to strike a balance amongst these outcomes. Serious accidents still occur, despite measures being taken. Once a wholly private activity for businesses, risk management is increasingly becoming a more publicly debated and potentially a publicly regulated process. For example, Schedule 80 should streamline many of the procedures in water activities like jetboating and whitewater rafting, when it is implemented (Maritime Safety Authority, 1995). Attitudes to managing risk vary, affecting which measures are chosen for use within businesses, as well as which planning and policy approaches are acceptable. The ideal measures for managing risk are not necessarily the ones implemented for reasons such as cost, politics, location or management style. Nonetheless, most of the operations surveyed have some form of risk management system in place.

6.2 Managing Risk - Perceptions

6.2.1 Adventure Operators

Whitewater rafting, bungy jumping and jetboating are not perceived by adventure operators to carry any extraordinary risk, once the activities are managed properly. Operators agree that there is some risk in adventure activities, but that this should come as no surprise. Outdoor activities have always been rough and experienced recreationalists know the risks involved. The problem arises when inexperienced travellers want to pay for the experience instead of learning the skills, for example a two hour whitewater rafting expedition. Then it becomes even more necessary to put measures into place to maintain the safety and enjoyment of the activity. Thus, most operators consider it is essential to have a risk management system in place, though its form varies from business to business.

Risk management is not considered difficult since the appropriate measures are well-known and success proven. Many operations have plans and waivers in place (Appendix 4). However, operators realise they need to be vigilant about the 'it can't happen to me syndrome', both with regards to themselves and their clients, even with their management systems. The role of risk management is seen as crucial to the survival of the adventure tourism business, though hardly any of the operators surveyed are aware of AS/NZ 4360:1995, the generic code for risk management developed by Standards New Zealand. Indeed, it is felt that the best form of risk management is that which is self-imposed.

6.2.2 Adventure Tourism Industry

The importance of managing physical risk is also appreciated by industry representatives. However, the New Zealand Tourism Policy Unit acknowledges that there has been a reactionary approach to risk management, the result of mounting accidents in the industry, particularly within whitewater rafting on the Shotover river in Queenstown. Accidents however, are not perceived to have a lasting effect on the industry as a whole but to be limited to localised effects in the vicinity of the incident, such as the blacklisting of operators or activities. According to the New Zealand Tourism Board (NZTB), New Zealand is perceived as a safe destination by travellers. Accidents have not reduced the flow of visitors to New Zealand and in actuality, they may reinforce the excitement of adventure activities.

However, according to the NZTB's research, visitors mistakenly assume that once activities are allowed to operate, they are regulated and if problems occur compensation is possible. Obviously, full disclosure of the nature of adventure tourism does not occur. Industry representatives accept that risk lies with adventure activities, but that adventure activities are no more risky than any other activity if the proper measures are taken. They also consider self-regulation as the best way forward for adventure businesses.

6.3 Managing Risk - Practice

6.3.1 Management Practices

All operations in the study have implemented a system for managing physical risk. Most seem to have developed formal systems using techniques such as written strategies, but a few still rely on an informal approach using mainly word of mouth planning. Whichever type of management is in place, strong views are held by individual businesses on the type of system they desire. In the survey, operators were asked to consider 15 types of management systems.

a) Jetboating

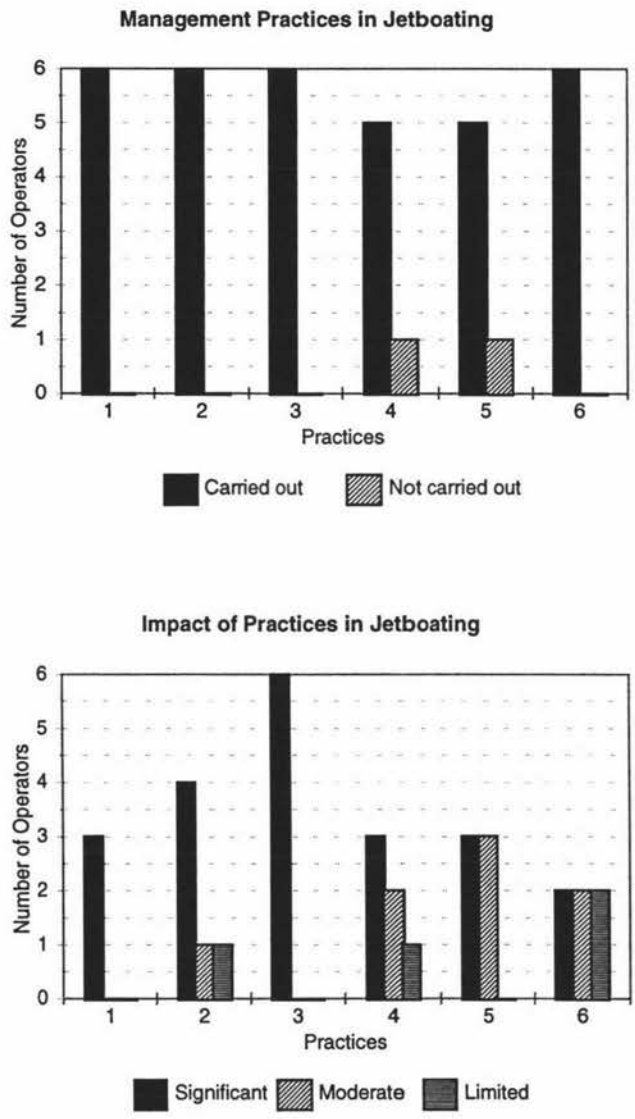
Several risk management practices are carried out by all six operators (Figure 6.1). These include briefing clients before embarking on a trip, ensuring that operating techniques are carried out properly, that equipment is checked on participants and that the welfare of participants is checked before the activity. Five of six operators disclose the risks of the activity to their participants and give them emergency instructions. All operators consider a significant potential impact is averted by checking equipment on participants. With regard to written practices, five out of six operators have a written emergency plan (i.e. a short term strategy for action after an event has occurred). Only three have a written risk management plan (i.e. a long term strategy for action before an event occurs). One respondent has neither a written emergency plan nor a written risk management plan.

b) Whitewater Rafting

There is consensus among whitewater operators in their views of risk management (Figure 6.3). All nine carried out the six identified practices. Several practices are considered as having a significant impact by at least five of the nine respondents. These are briefing clients, checking equipment on clients, giving clients emergency instructions and ensuring that techniques are carried out properly. Four operators also regard checking client welfare before an activity as a significant. Four operators consider it less important to disclose the risks of the activity to clients. All respondents except one have both a written emergency plan and a written risk

management plan. However, as is the case for jetboating, a single respondent has neither plan.

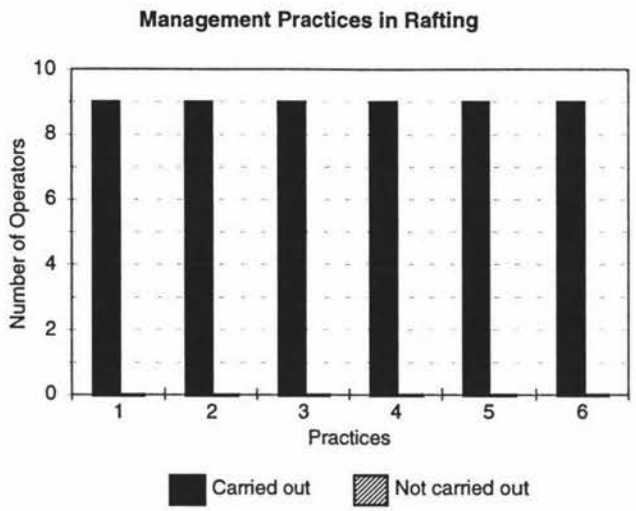
Figure 6.1: Jetboating; Practices in Use and Impact

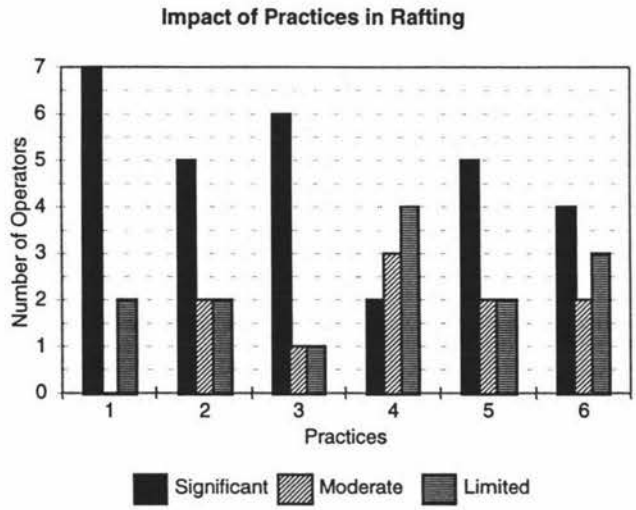


Conditions:

1. Clients briefed before activity, 2. Techniques carried out properly, 3. Equipment checked on participants, 4. Risks of activity disclosed to clients, 5. Clients given emergency instructions, 6. Welfare of clients checked before trip e.g. anxiety

Figure 6.2: Whitewater Rafting; Practices in Use and Impact





Conditions:

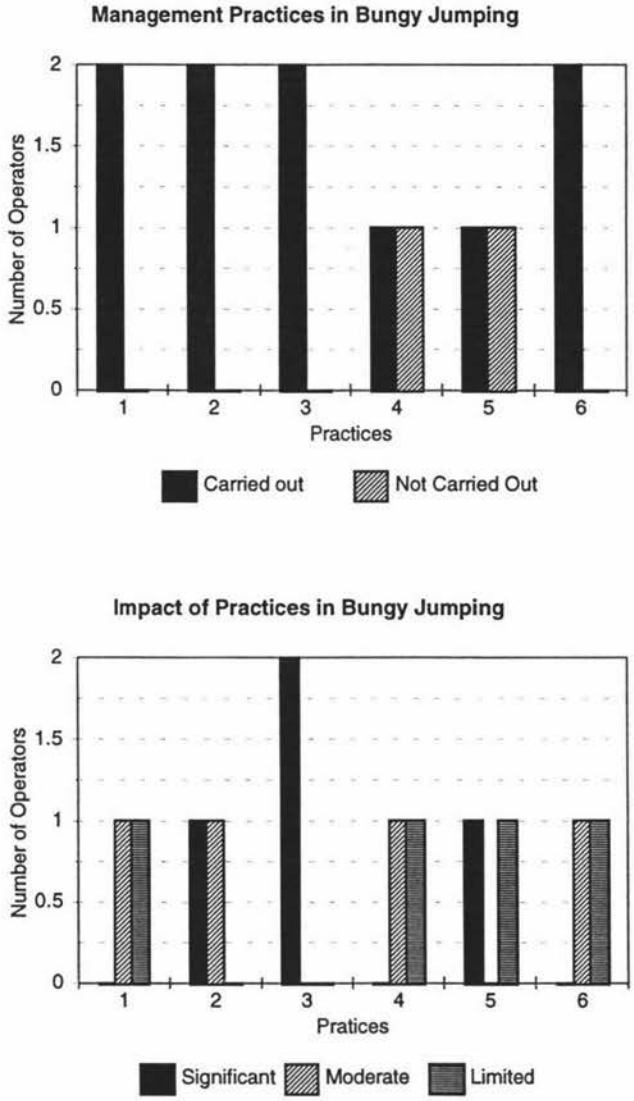
1. Clients briefed before activity, 2. Techniques carried out properly, 3. Equipment checked on participants, 4. Risks of activity disclosed to clients, 5. Clients given emergency instructions, 6. Welfare of clients checked before trip e.g. anxiety

c) Bungy Jumping

The two bungy operators surveyed have different ways for managing risk (Figure 6.3). Four practices are carried out by both; the briefing of clients before an activity, carrying out techniques properly, checking equipment on participants and checking the welfare of clients before an activity. Disclosing risks to clients and

giving emergency instruction receives a mixed response. Only one practice is considered wholly

Figure 6.3: Bungy Jumping; Practices in Use and Impact



Conditions:

1. Clients briefed before activity, 2. Techniques carried out properly, 3. Equipment checked on participants, 4. Risks of activity disclosed to clients, 5. Clients given emergency instructions, 6. Welfare of clients checked before trip e.g. anxiety

significant by both operators i.e. checking the equipment on clients. Proper execution of techniques is considered moderately significant but, briefing clients, disclosing risks and checking client welfare are considered of less relevance. Views differ over providing clients with emergency instructions and preparing written

plans. One operator has an emergency plan, which the other does not. Nonetheless, both have a written risk management plan.

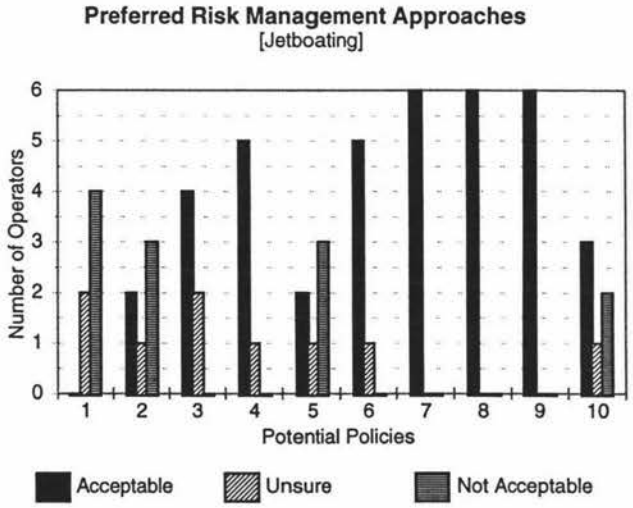
6.3.2 Planning and Policy

Planning and policy are broader aspects of risk management, going beyond the responsibility of adventure businesses, industry support and central government involvement. They entail practices with wider implications than safety, incorporating concerns of profitability, liability and control. Respondents were asked to give their views regarding ten potential policies.

a) Jetboating

There are mixed feelings among respondents regarding the policies (Figure 6.4).

Figure 6.4



Conditions

1. Modify laws to permit private claims for damages, 2. Implement voluntary industry codes of practice, 3. Implement compulsory industry codes of practice, 4. Operators rely on individual insurance, 5. Safety standards developed by industry, 6. Safety standards developed by government, 7. Safety standards developed by operators jointly, 8. Operators develop individual risk management plans, 9. Certification of operators meeting required standards by industry agency, 10. Certification of operators meeting required standards by government agency

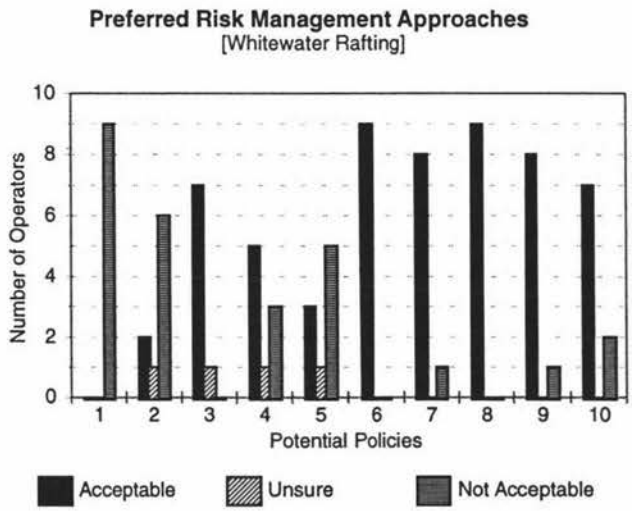
Only three of the ten policies considered are deemed wholly acceptable i.e. the development of safety standards by operators jointly, operators developing their

own risk management plans, and the certification of operators meeting required standards by an industry agency. A change in legislation to permit liability for accidents is unacceptable to four out of six respondents. The other two respondents are unsure of the potential impacts of such a move. Compulsory implementation of codes of practice is preferred to a voluntary system. Insurance as a method of managing risk, through a transference approach, is acceptable to most respondents. Total support is given to safety standards jointly developed by operators.

b) Whitewater Rafting

Whitewater rafting operators show a high level of consensus in their opinions on planning for risk management (Figure 6.5). The modification of legislation to permit

Figure 6.5



Conditions

1. Modify laws to permit private claims for damages, 2. Implement voluntary industry codes of practice, 3. Implement compulsory industry codes of practice, 4. Operators rely on individual insurance, 5. Safety standards developed by industry, 6. Safety standards developed by government, 7. Safety standards developed by operators jointly, 8. Operators develop individual risk management plans, 9. Certification of operators meeting required standards by industry agency, 10. Certification of operators meeting required standards by government agency

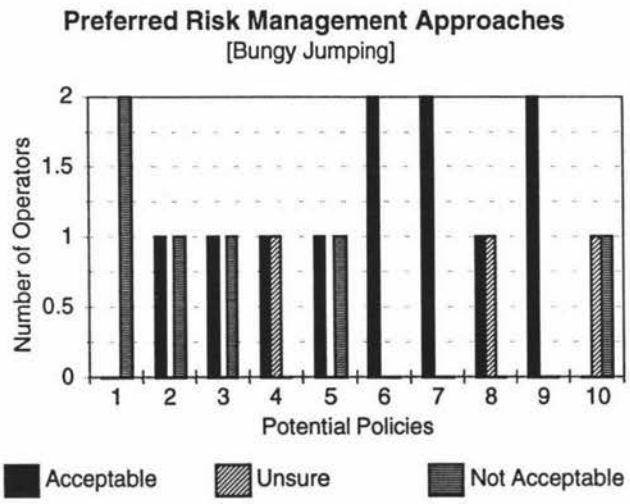
claims for damages is considered unacceptable by all nine operators. Compulsory implementation of codes of practice are preferred to voluntary implementation by

seven out of nine respondents. Insurance, however, is not as highly supported by whitewater rafting respondents as by jetboating operators. Another difference is the preference ranking for safety standards development. Whitewater rafting respondents prefer standards developed by government (approved by all respondents), as opposed to those developed by the industry or themselves jointly. All respondents agree with the development of risk management plans as an appropriate strategy. Industry certification of operators meeting required standards is preferred to certification by a government agency.

c) Bungy Jumping

The two bungy respondents have differing views on policy implementation (Figure 6.6). Both agree with four of the ten potential policies. Policies such as government developed safety standards, safety standards developed by operators jointly and

Figure 6.6



Conditions

1. Modify laws to permit private claims for damages, 2. Implement voluntary industry codes of practice, 3. Implement compulsory industry codes of practice, 4. Operators rely on individual insurance, 5. Safety standards developed by industry, 6. Safety standards developed by government, 7. Safety standards developed by operators jointly, 8. Operators develop individual risk management plans, 9. Certification of operators meeting required standards by industry agency, 10. Certification of operators meeting required standards by government agency

industry certification of operators meeting required standards are acceptable to both. Similarly, both operators find the modification of laws to permit private claims for damages unacceptable. They do not agree on a voluntary code of practice or a compulsory system, as the need for insurance, however unlike jetboating and whitewater rafting respondents, bungy operators favour both government and joint operator developed safety standards. Neither fully accept risk management plans. Industry certification of operators meeting required standards by an industry agency is preferred to government certification.

6.3.3 Schedule 80: Draft Rules for Maritime Craft used in Adventure Tourism

To better manage whitewater rafting and jetboating, government intervention was deemed necessary. The Maritime Safety Authority (MSA), the body responsible for promoting maritime safety, investigated safety concerns in the whitewater sector in 1994-1995 and found that "the lack of the most basic statistical information about the industry, reports of unsafe practices and issues with the voluntary code of practice" warranted a review (Maritime Safety Authority, 1995, 12). It was recommended that a code of practice be formulated, in addition to operating procedures and safety standards, for both jetboating and whitewater rafting. The result is Schedule 80 which consists of maritime rules which 'structure 'codes of practice' relating to the design, construction, equipment and operation of marine craft used in the adventure tourism industry" (Maritime Safety Authority, 1997,1). Appendix 5 outlines the contents of Schedule 80. The implementation of the new marine rules would create the first true case of government intervention in the adventure tourism industry. As explained by representatives from the New Zealand Policy Unit, self-regulation is the route preferred for dealing with adventure tourism, but government will intervene if significant problems arise.

6.4 Managing Risk - Preferred Approaches

6.4.1 Synthesising the Approaches

(a) Legislative Change

Current legislation seems to satisfy the needs of the adventure tourism industry. No-one has advocated any modification to the system. Satisfaction seems to have been achieved by two means. Firstly, operators continue to approve of the no-sue policy existing as a result of ACC legislation. This policy enables innovation to flourish, while at the same time reducing litigation. A move towards a more punitive system as present in the USA is seen as far from desirable.

Secondly, operators and industry interest favour self-regulation, which is consistent with New Zealand's legislative framework. This framework arises from a ten year process of assigning increasing responsibility, which benefits the innovative nature of adventure business management. Through the process of public sector reform, government has moved away from direct arbitration of industrial relations. For example, the responsibility for safety is at the level of management. This ties in with the emphasis of adventure businesses addressing their own safety. Government becomes directly involved in cases of exceptional seriousness as is the case with the circumstances surrounding the implementation of Schedule 80.

Management concern for safety is particularly taken into consideration in two pieces of legislation. In Health and Safety in Employment Act (1992) management is responsible for any accidents or incidents endangering safety in the workplace. Incidents also affect levies paid to the ACC through the Amendments to the ACC legislation. An experience rating was introduced, where records were kept of accidents and levies set accordingly. These four legislative Acts transferred responsibility from government to management and hence encouraged self-regulation within many industries, including the adventure tourism industry. Management within adventure businesses is responsible for the quality of the staff they employ, their training and behaviour, as well as the resolving any problems that arise.

Schedule 80 will be administered through the Maritime Transport Act (1994). Though it is considered necessary to have statutory regulation for water recreation activities, the delay in getting Schedule 80 through Parliament indicates that it is not a priority for implementation. Accidents create an initial furore and discussion, but implementing legislation to provide better direction appears protracted.

(b) Codes of Practice

Codes of Practice are a preferred approach for managing risk in adventure tourism. Both operators and industry representatives agree on the development of industry-based codes, thereby encouraging industry driven self-regulation. Codes would cover permitted and prohibited practices in generic terms. Though codes of practice are a preferred approach, they are not considered to be enough on their own. More individualised forms of risk management such as risk management plans, insurance or safety standards are still considered essential.

(c) Insurance

There seem to be no consistent views on the role of insurance in the industry other than it is should always remain a voluntary method. Some operators have liability coverage, while others do not. Insurance is considered an adequate means of transferring some of the risk from the operator to the insurer, but cannot stand alone as an appropriate risk management procedure. To obtain insurance, evidence of other mechanisms such as risk management plans and accident reporting books need to be in place in order to ensure confidence and set premiums. Hence, insurance is usually taken as a sign of some degree of responsibility and professionalism on the part of the payer.

(d) Risk Management Plans

Risk management plans follow codes of practice as a preferred means of managing risk. These plans are tailored to meet the conditions of individual businesses. For example, Rapid Sensation Jetboat Tours is currently developing a personalised risk management computer programme incorporating features such as accident and incident recording, hazard identification, and frequency and management analysis to provide risk estimates. Risk Management Plans in any form are generally

considered essential documents by operators because they simplify dealing with problems. They also provide active proof of a commitment to ensuring safety in the face of any legal challenge, media questioning, customer enquiry or insurance investigation. Possessing a code of practice at the same time provides an overall framework in which the risk management plans operate. Emergency instruction can be kept as part of the risk management plan or held as a different plan. Both systems are used by operators.

(e) Certification

Certification is an accepted means of managing risks in adventure tourism. Taupo Bungy has been officially certified by Standards New Zealand for four years. Certification implies a high quality product, which in turn facilitates marketing. Certification, however, is not considered an end in itself, but rather reflects having other practices including codes of practice or risk management plans. With appropriate practices in place, a quality assurance brand can be designated which promises high quality. The New Zealand Tourism Board is particularly interested in encouraging codes of practice and, with them quality assurance. Moreover, certification by industry is preferred to that from government by adventure operators. If this is the case, industry certification, like codes of practice, would be a form of collective self-regulation.

(f) Safety Standards

The need to manage risk using safety standards is wholly accepted by the operators interviewed. However, the origin of the standards seems to be significant in them gaining acceptance. Standards developed by government or among operators are considered highly acceptable, but standards developed by the industry are apparently not as acceptable. The suggestion is that industry developed standards re not acceptable, which appears to undermine the notion of a totally industry driven self-regulatory system. Safety standards already in place for bungy jumping were developed by A.J.Hackett in conjunction with Standards New Zealand the Australia/New Zealand standard Code of Practice for Bungy Jumping (AS/NZ 5848:1992). In addition, certain requirements will become into force for jetboating

and whitewater rafting with the implementation of Schedule 80. Safety standards for whitewater rafting came into effect in 1995.

6.4.2 A Proposed Risk Management Package

A framework for industry-wide risk management can be derived from the preferences of the operators interviewed. It is accepted that a multi-tiered process is the needed and that the government, industry and individual operators all have a role to play in the proper functioning of the system (Table 7).

Table 7: A Proposed Risk Management Package

Who?	Role?	Outstanding Issue(s)?
Government	• Assist in the development of safety standards • Manage competition	• Extent of role? • Level and type of enforcement
Industry	• Formulate Codes of Practice • Initiate certification of individual businesses	• Use existing body? • Develop a new association? • Means of disciplinary action?
Operators	• Develop written Risk Management Plans • Develop Safety Standards	• Need to take out insurance?

Government would act as a facilitator and regulator of the last resort. It would also be involved with the development of quality safety standards. Government involvement would ensure the credibility of such standards because if its impartiality and ultimate authority. However, there are differing opinions on the appropriate extent of government involvement.

industry collaboration would define codes of practice and an industry body would be responsible for certification. This would provide entry requirements. With that some form of disciplinary measures for non-compliance may need to be developed. Whether this will be taken on by an existing body or one that is new may need to be decided.

Quality assurance and risk management would remain with the operators. Indeed, there is evidence of effective local systems in place, which would be the basis for certification of individual ventures. Insurance is another option, if it can be afforded.

The package of approaches suggests an integral means of managing risk in adventure activities based on the perception of risk and operator responses in the Lower North Island. Parts of the package are already in place. There is reasonable consensus in this group on what should be done and some moves towards an industry-driven management system are underway. It remains to be seen whether adventure activities in other parts of New Zealand would present the same picture. It would be useful to observe the differences and similarities in the responses from operators in widely different locations and in other adventure activities. Then it could be possible to develop a risk management package applicable on a national scale. Regardless, the Lower North Island tourism corridor is a reasonably popular area and the implementation of a coherent risk management package for this area would be an achievement in itself.

Chapter 7: The Thesis In Conclusion

7.1 Introduction

The thesis aimed to assess the physical risks in adventure tourism and to provide a practicable package of approaches to better manage risk in the adventure tourism sector. The research being based on the perceptions of those active in the industry. Invaluable information was provided about adventure activities by the persons who agreed to participate in this study. The physical risks present in the case study activities have been assessed in Chapter Five, and the management procedures to deal with these risks have been outlined in Chapter Six. This chapter will take important concepts that have arisen in the research, examining their significance.

7.2 Answering the Research Questions

Certain central questions pervaded the thesis providing a focus for the research. These questions were laid out at the start of the thesis as its aims and objectives and alluded to throughout the research. The section attempts to answer the research questions in full.

7.2.1. What are the risks present in adventure activities?

The source of risk which operators for all three case study activities perceive as most threatening comes from equipment conditions. The other sources of risks were perceived differently by the three sets of respondents. The natural environment is an acceptable source of risk for operators as it is the medium in which they must operate their business. In general, six of the 13 conditions surveyed are considered especially serious. These were floods, moderate wind and rain, low water temperature, river debris, and river boulders. People risk, both from clients and guides, is also taken into account by operators. The client and guide conditions which were particularly important depend to a great deal on the type of activity.

Operators have an intimate knowledge of the nature of the risks that pertain to their business and location. Most seem unconcerned about the potential of these risks to

do harm. They have developed varied responses to deal with circumstances that arise and maintain that it is enough.

7.2.2. What attitudes to risk pervade adventure tourism?

Within the industry, the common perception is that there is risk in adventure tourism, but it is no more risky than doing any other activity. Risks are an essential part of the attraction of adventure activities. Operators frequently point to the difference in the level of awareness between professional recreationalists and inexperienced travellers in justifying the accepted level of risk found in activities, which are essentially constitute adventurous outdoor recreation.

People have always done strenuous activities, some have been injured or died, but the majority have succeeded with little difficulty except for the challenge ingredient. Injury and death are accepted by professionals as a natural part of outdoor recreation. Many operators, who are themselves experienced recreationalists, wonder at the different treatment given to adventure activities. It seems no longer 'normal' to be injured doing outdoor recreation when it involved overseas visitors and they are penalised if anything goes wrong. Consequently, it is necessary to have risk management procedures in place, both as a common sense measure and for self-protection in the face of an increasingly regulated industry.

7.2.3. How are the risks currently managed in adventure businesses?

Risk management is the domain of the adventure businesses, though some methods are developed elsewhere. Government intervention, though minimal, does occur such and will increase through the implementation of the Schedule 80 Marine Rules. The Adventure Tourism Council, as an industry body, is in the process of developing a Standards Assurance Programme for various activities. Operators do not consider managing risks difficult, but it can be costly. Operators approach the management of physical risk in their business seriously. All respondents agree that risk management should be part of their operations. Most agree with the need for a written plans to ensure that proper procedures are followed and indeed have them in place, both risk management plans and emergency plans.

All operators ensured that their clients are debriefed before an activity, techniques they need are demonstrated and repeated, and equipment is checked on their person to ensure proper fit. Most operators considered these practices as significant to the level of risk in an activity; lower risk when these practices are done and higher risk when the are not. Risk disclosure to participants and the provision of emergency instructions are also done by most operators, though some found the process not significant. Other than the measures directly examined, some operators ingeniously developed their own ways of managing risk. This indicates an individual commitment to risk management, not merely responding to a mandate from industry or government.

7.2.4. What approach could be taken to better manage risk in adventure tourism?

Overall, it is agreed within the industry that voluntary self-regulation is the preferred means of risk management. From the response of the operators interviewed, it is evident that they desire a three tier system involving themselves, the adventure tourism industry and government. Each tier would have different responsibilities, but all the ramifications have not been worked out. The role of government is the most ambiguous. It is accepted that government should be involved in the development of safety standards and there should be no change to the current no-sue policy. But there is no consensus on other roles, if any, or how enforcement should be carried out.

Operators want to develop risk management plans and safety standards. They are undecided over the use of insurance. Plans and standards would allow them to target the sources of risk that are most threatening to them individually. Operators do not perceive the environment as a large threat, it is a mainstay of their business, which they control to a high degree through the use of equipment. Standards can be developed for equipment to ensure that they are suitable and well-maintained. These specifications also become incorporated into the code of practice for the activity, along with guidelines on disciplinary measures, the training of guides, client care and so on. Operators maintain that the industry should develop these codes of practices. Additionally, the industry should initiate a certification process to

streamline entry requirements for adventure businesses. The industry, judging from its preference for industry-driven self regulation, supports such a process. With these mechanisms in place, it is hoped that unnecessary risk in adventure tourism will be adequately managed.

7.3 The Research in Essence

As well as being clean and green, New Zealand is considered an active destination. There is a wealth of activities from which to choose. However, incidents continue to occur during adventure activities. For example, two serious jetboating accidents have occurred within months of each other on the Dart River in Queenstown in mid 1998. It is not possible to completely eliminate accidents, but repeat accidents from the same companies or in the same areas are proving a problem. More regulation in the industry may be a means of culling the numbers of unnecessary accidents.

Adventure tourism is an industry that highlights risk. The activities appear visually thrilling and this is an attraction for those who are willing to participate. However, it seems evident that many persons do not understand the difference between perceived and actual risk. A seeming easy activity can be more dangerous that one with a more sensational appearance. This is the case between whitewater rafting and bungy jumping. It would appear less risky to paddle down a river than to jump off an 80 foot high platform attached to a elastic cord. Bungy jumping is perceived as a high risk activity, but its actual risk is very low. Few incidents have occurred, it is strongly regulated and its operation, which exists mainly of equipment, is greatly controllable. Whitewater rafting, on the other hand, is perceived as lower risk, but in fact has a high actual risk. Several incidents have occurred including fatalities, regulation is still new and many factors, especially environmental conditions, are not readily controllable such as river and weather conditions.

To study risk within the adventure tourism industry, the Risk Assessment - Risk Management Paradigm as explained by Baker (1996) was used. The paradigm provides a progression from a risk assessment component, which has specific stages, to the risk management component. Thereby, risks are managed after they have been assessed and not vice versa. The paradigm worked well for carrying out

the purpose of the thesis, by providing a logical framework in which to stage the research. Whether it is a framework for adventure businesses to use may depend on the nature of business. Respondents were not asked directly about the paradigm, but it is evident from discussions that some have gone through a similar progress in developing their plans. Regardless of whether the paradigm has been followed, risk management strategies have been developed by the adventure businesses.

Operators have chosen to manage risk by focusing control on the impact of equipment risk. Of the four sources, it is the easiest to control. It is reasonable to focus attention on equipment as long as the other sources of risk are also dealt with appropriately. Environmental conditions, and client and guide characteristics are powerful, though not easily controlled. Navigating a rapidly rising river with perfectly managed equipment and inexperienced clients is a reckless action. Over-reliance on the ability of equipment, despite the high level of technology found within the industry, can also lead to problems.

A potential problem that is being highlighted is the psychological dichotomy between the experienced recreationalists and visitors in the perceptions of risk. Operators are annoyed at the anxiety that arises after an accident, as risks have always been a part of outdoor activities and so have accidents. Experienced recreationalists know and understand the risks, and many expect other participants to do the same to some extent. On the other hand, inexperienced visitors regard adventure activities as fun activities with no complications. Many, especially those whose desire to undertake the activity is tenuous, being boosted for example through peer pressure or curiosity, are not interested in considering the possibility of injury, mild or serious and worse a fatality. Serious consequences can arise from this dichotomy in terms of the expectations that clients have of guides and vice versa. This is further complicated by cultural differences and expectations. Reconciling this multitude of attitudes is a challenge.

Operators value their autonomy, especially being able to make decisions about their operations and their future. They know and understand the need to practice risk management, protect their reputations and safeguard lives, but they do not want the

government guiding or restricting the way. Adventure tourism businesses are generally small. Various activities have formed associations, but some associations seem to wane readily. Competition is fierce among the operators. Working conditions within the industry are hard. Adventure businesses contend with two seasonal work periods (winter low season and summer high season) in which they work long hours almost daily. Profitability is low. But perseverance pervades throughout the industry.

Whether as individual entity or within an association, operators are committed to their businesses, and also to assessing and managing the physical risks found in their activities. Many operators have been formally trained in risk management and take the process seriously. Though a high level of individualism runs through the industry, all operators interviewed have some form risk management system in place and all hold strong views on the situation facing their particular businesses, as well as the industry as a whole.. The proverbial 'cowboy' operator was not visible among the operators interviewed for this study.

Various management practices have been put in place in adventure businesses to deal with physical risks. Operators participate in risk disclosure to clients, equipment checks, weather monitoring, developing risk management plans, undertaking disciplinary action, training and so on. Usually an assortment of practices is in place in one single operation. Businesses have developed the methods themselves, within an association or with outside help such as consultants. Regardless of the origin of the methods, most businesses seem to have owned their risk management measures. An exception is the upcoming Schedule 80. The overall concept of the new draft marine rules is satisfactory, but the prospect of compliance with specific rules is generating tension within the whitewater rafting and jetboating sectors. It would be ideal to iron out most or all of these tensions before the legislation is implemented.

Concerns on the type of regulation to which adventure tourism should be subject are also evident in the industry. Self-regulation is the desired modus operandi for both operators and industry officials. Industry driven self-regulation is the buzz

phrase within adventure tourism currently. But views on what constitutes industry driven self-regulation seem to differ significantly. Codes of practice and safety standards seem to be the most extensively used approaches. It is almost unanimously agreed by all parties concerned that the role of government should be a limited one, especially concerning a change of the no-sue policy within current legislation. Regardless of which type of regulatory approach is implemented and despite the individualism evident in the industry, it is hoped that a sense of co-operation will prevail with the regulatory system.

Innovation remains a key part of the adventure tourism industry in New Zealand. Adventure activities are continually being introduced onto the tourism market. For example, the fly-by-wire was introduced in Queenstown in early 1998. Innovation seems not to have been stifled or be diminishing as yet. The no-sue legislative policy is a benefactor to innovation, encouraging the development of ever more thrilling activities. However, it is not only in the development of the activities that innovation pervades the industry. Operators have also been innovative in managing the physical risks found in their businesses. For example, one operator is attempting to develop a New Zealand based risk management software which could be sold to other adventure businesses if its operation is a success. This level of innovation in both activity evolvement and risk management should be encouraged and sustained. The future of the adventure tourism industry in New Zealand may rely on its continuity.

7.4 The Future of Adventure Tourism in New Zealand

All evidence so far points to a bright future for adventure tourism in New Zealand. The numbers of participants are increasing, as is advertising and coverage of adventure activities. Adventure tourism is already an essential part of the New Zealand Tourism Board's marketing strategy for focusing visits to New Zealand. The development of codes of practice, is expected to produce a higher standard of adventure tourism. Tighter regulation of whitewater rafting and jetboating with the implementation of Schedule 80 or any of the other activities with their codes of practice is not expected to reduce the appeal or excitement of adventure activities. Indeed, more participation and reduced risk is anticipated.

Nonetheless, regulation is not prefect and incidents will continue to occur. There are too many uncontrollable factors to be relaxed about the risks present in adventure activities. Even with stricter regulation, clients should be told of the risks involved and how to deal with them. Operators should continue to carefully observe their operating conditions. Over-confidence can also prejudice management. On the other hand, ever continuing regulation could eventually suffocate the industry, stifling innovation and dampening thrills. A balance between regulation and freedom, though sometimes tenuous, should always be maintained to ensure the survival and vibrancy of the industry. Adventure activities are a part of the New Zealand psyche. The demise of such a vibrant industry would be a loss to both the physical and cultural heritage of New Zealand.

Appendix 1: List of Survey Participants

Jetboating Operators

- Wairapa Jet Adventures
- River Spirit Jetboat Tours
- Huka Jet
- Manawatu JetBoats
- Rangitki Jet
- Marty's River View Jet Tours

Whitewater Rafting Operators

- Rapid Sensations
- Venture Bound Tours
- River Rats
- Tongararo River Rafting
- Adventure with Rock 'n' River
- River Valley Ventures
- Rapid Descents Rafting Company
- Plateau Outdoor Adventure Guides
- ORCA Ltd
- Tararua Outdoor Recreation centre

Bungy Operators

- High Time Bungy
- Taupo Bungy

Other Operators

- Backcountry Lifestyle Jet Boat Tours
- Tongararo Duo

Appendix 2 : Survey Questionnaire

Your Activity

1. Type of Activity _____

2. How many trips or how often do you operate per year _____

3. How many visitors do you carry per year _____

4. What is the number of people employed on average:
(I) Full-time _____ peak season _____ low season
(ii) Part-time _____ peak season _____ low season

5. What is your peak month? _____ How many visitors ?_____

6. What is your lowest month? _____ How many visitors? _____

7. How long has this business been operating? _____

8. How long have you been managing this business? _____

Sources of Risk

In the following checklists, frequency is defined as follows:	
Often	More than 12 times/trips per year
Sometimes	Around 6-12 times/trips per year
Rare	No more than 6 times/trips per year

Natural Environment

8. The natural environment contributes to risk. In your opinion, how much do each of the following conditions pose a risk to your activity? How often does each occur?

Please tick relevant boxes

Conditions	Impact on risk ?			How often does it occur?		
	High	Medium	Low	Often	Sometimes	Rarely
Example: Low wind			√		√	
Flood						
High wind						
Landslides						
Moderate wind and rain						
Low air temperature						
Low water temperature						
Low visibility/fog						
Debris in river						
Bush fire						
Changing eddies in river						
Falling river levels						
Fast currents						
Boulders in river bed						

9. Is your location vulnerable to these risks?

Conditions	Vulnerable? Yes	No	Cancellations (days per year 1997-1998)
Flood			
High wind			
Landslides			
Moderate wind and rain			
Low air temperature			
Low water temperature			
Low visibility/fog			
Debris in river			
Bush fire			
Changing eddies in river			
Falling river levels			
Fast currents			
Boulders in river bed			

10. How do you monitor weather conditions? (tick one or more)

Listen to the radio ☐ Receive bulletins ☐ Use local knowledge ☐

Observation ☐ Don't monitor conditions ☐ Other _____

Clients

11. The people who are your clients can contribute to risk. How do the following client characteristics affect the risk of your activity?

Please tick relevant boxes

Nature of Client	Impact on risk ? High	Medium	Low	How often encountered? Often	Sometimes	Rarely
No experience in activity						
Lack of fitness						
Fear						
Foolhardiness						
Nervousness						
Over Enthusiasm						
Physical disability						
Health concerns e.g. heart problems, asthma						
Poor eyesight						
Mental disability						
Hypothermia						
Bodily injury						
Fatigue						
Agitation (shaking)						
Immersion in water						
Splashed by water						
Lack basic caution						
Overconfident						

12a. Do group dynamics contribute to risk in your activity? (tick one)

☐ Yes ☐ No

12b. If yes, how frequently do the following circumstances occur?

Please tick relevant boxes

Circumstance	Often	Sometimes	Rarely
Succumb to peer pressure			
Showing off			
Wanting to belong (trying too hard)			
Over reliance on experienced participants by inexperienced participants			

13. How do you deal with groups or individuals who are a particular risk? (tick one or more)

Careful explanation of risk ☐
Repeated instructions ☐
Threats ☐
Extra vigilance ☐
Moderate risks ☐
Cancel activity ☐

Other _____
_____

14a. Have you ever cancelled scheduled activities because of client factors?
☐Yes ☐No

14b. If yes, under what circumstances
_____
_____

15. Please specify the age limits of your activity: Minimum _____ years
Maximum _____ years

16. How many people have an adequate idea of risk when they arrive to do an activity? (tick one)

☐ All (around 100%) ☐ Most (75% - 100%) ☐ Some (25% - 75%) ☐ Few (less than 25%)

Guides

17. Guides can contribute to risk. How do the following guide characteristics affect the risk in your activity?

Please tick relevant boxes

Characteristics of Guides	Impact on risk?			How often encountered?		
	High	Medium	Low	High	Low	Nil
Not trained in risk management						
Unassertive						
Unhelpful						
'Beginner'						
Unfit						
Injured; unable to fulfil tasks						
Injured but able to complete activity						
Arrogant						
Too few						

18. How are your guides trained? (tick one or more)
Only recruit experienced guides ☐
In-house formal training ☐
External training ☐
Learn on the job ☐
Other ☐ please specify _____

19a. Is there a difference in attitude to risk of guides trained formally and those that learnt from experience? ☐ Yes ☐ No (tick one)
19b. If yes, please comment _____
_____
_____

20. What action is taken against guides that do not provide the appropriate care, control or assistance during an activity? (tick one or more)
In-house disciplinary process ☐
External disciplinary process ☐
Monetary fines ☐
Instant firing ☐
Suspension from work ☐
Additional training ☐
Other ☐ please specify _____

21a. Have you ever cancelled activities due to guide factors? ☐Yes ☐ No
21b. If yes, under what circumstances?
_____
_____

Equipment

22. Equipment can contribute to risk. How do the following influence the risk in your activity?

Please tick relevant boxes

State of Equipment	Impact on risk ? High	Medium	Low	How often does it occur? High	Low	Nil
Incorrect operation						
Faulty parts/features						
Irregular maintenance						
Wear and tear						
Loss of Equipment						
Equipment not repaired						
No spare parts/equipment						
Design faults						

23. How often on average do you inspect your equipment? (tick one)
Before every activity ☐
After every activity ☐
Every day ☐
Once a week ☐
Once a month ☐
Other ☐ please specify _____

24a. Have you ever cancelled scheduled activities due to equipment problems ? ☐Yes ☐ No
24b. If yes, under what circumstances

_____

_____

Risk Management

25. Which of the following do you carry out and what influence do you think it has on the risk in your activity?

Please tick relevant boxes

Condition	Carried out ? Yes	No	Impact on risk ? Significant	Moderate	Limited
Clients briefed before activity					
Techniques carried out properly					
Equipment checked on participants					
Risks of activity disclosed to clients					
Clients given emergency instructions					
Welfare of clients checked before trip e.g. anxiety					

26. Do you have a **written emergency** plan? (tick one)

☐ Yes ☐ No

If yes, please describe its major components

_____

_____

_____

_____

_____

27. Do you have a **written risk management** plan? (tick one)

☐Yes ☐ No

If yes, please describe its major components

_____

_____

_____

_____

_____

28. Please consider the following options for managing risk across the adventure tourism sector. Then based on your experience, rate the following policies according to their acceptability. Please tick the relevant box for each policy

Potential Policies	Acceptable	Unsure	Not Acceptable
Modify laws to permit private claims for damages			
Implement voluntary industry codes of practice			
Implement compulsory industry codes of practice			
Operators rely on individual insurance			
Safety standards developed by industry			
Safety standards developed by government			
Safety standards developed by operators jointly			
Operators develop individual risk management plans			
Certification of operators meeting required standards by industry agency			
Certification of operators meeting required standards by government agency			

Any other comments

THANK YOU

Appendix 3: Open Schedule for interviews

Organisational Roles
Role of organisation
Involvement with adventure tourism or particular activity ⇒ type
length of time
degree of involvement
(past and present)

Tourism and adventure activities
When does ordinary tourism become adventure tourism?
What happens when an adventure activity is turned into tourism activity?
Purpose of adventure activities ⇒ fun, challenge, rebellion, etc.
Risk in adventure tourism ⇒ acceptable vs. unacceptable
Is adventure tourism inherently risky?
Perceived role of adventure tourism in the tourism market

Managing risk
Personal protection (indemnity, contracts/waivers, liability, insurance)
Reasonable, inevitable or unnecessary events
Prevention
Dealing with them ⇒ publicity, training of guides, penalties
Managing risk factors e.g. equipment standards, guide experience, cancellation of trips at unfavourable times, flexibility of trips to suit type of participant

Regulation ⇒
Necessary or not? Why?
Industry driven vs. statutory
Compulsory vs. voluntary
Forms that could work ⇒ modification of legislation
Which ? codes of practice
Why? customer service strategies
How? insurance
Where? certification
Already applying? safety standards
Successful or not? risk management plans
Effects of regulation (positive and negative) ⇒ activities
Coming into effect (constraints and pushes) publicity
risk levels
experience
management
competition

Public Response
Role of the media (promotion, mishaps, etc.)
How much should the customer know?
How do you reassure your clients?

Appendix 4: Taupo Bungy Waiver Form

SAMPLE

TAUPO BUNGY & SCENIC RIVER CRUISES LIMITED

PLEASE READ THE WHOLE OF THIS DOCUMENT BEFORE SIGNING

I ACKNOWLEDGE AND AGREE that the following are the conditions upon which Taupo Bungy & Scenic River Cruises Limited (Taupo Bungy) have agreed to allow me to participate in the activity of bungy jumping:

1. I am aware that bungy jumping is a dangerous activity and that there is the possibility of death or bodily injury to myself or others and also involves the possibility of loss or damage to property belonging to myself or others.
2. I agree to abide by any and all instructions given to me by Taupo Bungy.
3. This document and any matter arising out of its interpretation or the activities described herein shall be governed by the law of New Zealand whose Courts shall have jurisdiction in all matters.
4. Where:-
   (a) The Consumer Guarantees Act 1993 does not apply; OR
   (b) Where the goods or services provided pursuant to this Agreement are required for business purposes, (in which case the customer agrees that the provisions of the Consumer Contracts Act 1993 shall not apply)

   Clauses 5 & 6 set out hereunder will form part of this Agreement and be enforceable but shall otherwise not form part of this Agreement.
5. That fully appreciating and being aware of the risks referred to in paragraph 1 I have decided freely and voluntarily to accept all responsibility and liability for any death, injury, loss or damage whatsoever arising out of my participation in bungy jumping and that Taupo Bungy accepts no liability of any kind for any death, injury, loss or damage howsoever occasioned whether caused or contributed to by the negligence of Taupo Bungy or otherwise and I, forever waive release and discharge Taupo Bungy from any and all liability for any death, injury, loss or damage whatsoever arising from my participation in bungy jumping regardless of how such death, injury, loss or damage is occasioned and including but not limited to circumstances where the death, injury, loss or damage is caused or contributed to by the negligence of Taupo Bungy.
6. I agree to indemnify and otherwise hold harmless Taupo Bungy from any and all loss, damage, causes of action, claims, costs or other liabilities whatsoever (referred to as "claims") arising out of my participation in bungy jumping even if such claims arise from the negligence of Taupo Bungy whether such claims can be brought by me or on my behalf or brought by any other person.
7. I declare I am 18 years of age or older and physically fit and have no condition (including pregnancy where female) or injury that could be affected by this activity. If you are pregnant or suspect that you are pregnant you should not participate in bungy jumping.

SAMPLE

8. (delete if over 18 years of age)
   I am the legal guardian of a minor (a person under the age of eighteen (18) years) who intends to participate in bungy jumping. I agree that this agreement and all its terms shall apply and bind the minor, his/her guardians representatives, executors, administrators, successors and assigns. I warrant that I have the authority of any other guardian of the minor to sign this agreement upon their behalf.
9. I have read and understood the conditions of this document and acknowledge that the consideration referred to above is accepted by me as adequate and sufficient consideration for the terms imposed by this agreement and I also acknowledge that Taupo Bungy has brought to my attention the matters referred to in Clauses 4, 5 and 6 prior to my signature of this document.
10. I understand that after registration or if my jump is not completed for whatever reason there will be no refund except where photographs or videos ordered are not taken then a refund for photograph/video cost may be given. Water touches or immersions cannot be guaranteed due to operational variables and will be at the discretion of Taupo Bungy.

Customer/Guardian Signature: _____

PLEASE PRINT
Name _____

Address _____

_____ Country _____

Signed on behalf of TAUPO BUNGY & SCENIC RIVER CRUISES by _____ Date _____

Weight kgs	Photo	Video	Pay By:

Special Information

Cost $ ..... Voucher No. .....

Source .....

.....

.....

.....

.....

.....

Maritime Rules

PART 80

MARINE CRAFT USED FOR ADVENTURE TOURISM

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