EXPLORING THE POTENTIAL OF NEW ZEALAND GRAVEL-BED RIVERS LIKE THE LOWER MANAWATU RIVER FOR OUTRDOOR AND RESOURCE-BASE RECREATION

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ABSTRACT

Recreation is a significant feature of the New Zealand lifestyle. New Zealanders love to participate in outdoor recreation, particularly those activities that utilise a natural environment or resource from which they derive much enjoyment and satisfaction. In New Zealand for example, rivers and lakes are valued for their aesthetic or amenity, recreational and cultural values. However, government authorities are known to adhere to strict environmental laws and regulations implemented through various governmental institutions to protect and conserve the country's natural and physical resources. This has somehow limited recreational opportunities in utilising a resource base like the Lower Manawatu River in an urban setting like Palmerston North which is chosen to be the case study for this study.

To examine current practice in recreation planning, authorities from the Palmerston North City Council and Horizons.mw staff were interviewed. Current plans, policies and strategies were also examined to determine how leisure and recreation issues are considered, particularly those which utilise the Manawatu River. River users and recreationists were also interviewed concerning their perceptions about the river as a recreational resource, and the leisure and recreation activities carried out along the Manawatu River. While local authorities and river users agree on the importance of the Manawatu River as a recreational resource, they however differ in both ideas and perceptions on how it is to be managed, improved and developed to provide a diversity of recreational opportunities.

Two approaches were examined to explore the potential of the lower Manawatu River as a place for outdoor and resource-base recreation: Recreation Opportunity Spectrum (ROS) and Landscape Ecology. The ROS method's three distinctive components, namely activity, setting and experience can provide resource managers and planners with valuable information for better recreation planning, while Landscape Ecology demonstrates its usefulness in improving and enhancing the Lower Manawatu River's aesthetic and amenity values, along with biological diversity. However, the local authorities' focus attention on the Manawatu River's physical limitations have prevented further developments along the river. Both PNCC and Horizons.mw have not used other methods and approaches to integrate leisure and recreation in their planning and policy-making.

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

BRL Plan	abbreviation for Regional Plan for Beds of Rivers and Lakes and Associated Activities
CMS	Conservation Management Strategies
DoC	Department of Conservation
LAC	Limits of Acceptable Change
LG Act	Local Government Act 1974
PNCC	Palmerston North City Council
RMA 1991	Resource Management Act 1991
ROS	Recreation Opportunity Spectrum
VIM	Visitor Impact Management

CHAPTER ONE

INTRODUCTION

"The Mississippi, the Ganges, the Nile, those journeying atoms from the Rocky Mountains, the Himmaleh, and Mountains of the Moon, have a kind of personal importance in the annals of the world... Rivers must have been the guides which conducted the footsteps of the first travellers... They are the natural highways of all nations, not only levelling the ground and removing obstacles from the path of the traveller, quenching his thirst and bearing him on their bosoms, but conducting him through the most interesting scenery, the most populous portions of the globe, and where the animal and vegetable kingdoms attain their greatest perfections."

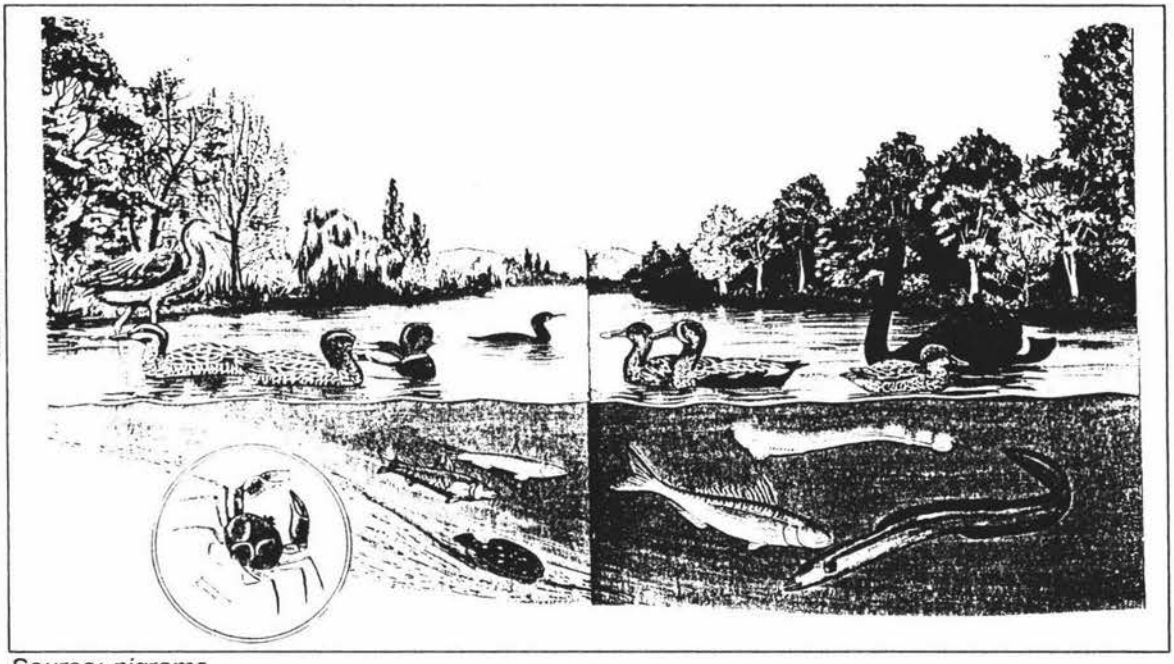
-Henry David Thoreau

A river is a thing of grace and beauty, a mystery and a metaphor, a living organism whose processes have been perfecting themselves through the ages, shaping the landscapes into works of art greater than those in any museum (McCully, 1996). The role of rivers as the sustainers of life and fertility is reflected in the myths and beliefs of a multitude of cultures. In many parts of the world, rivers are referred to as 'mothers': *Narmadai*, 'Mother Narmada'; the Volga is *Mat' Rodnaya*, 'Mother of the Land'. The Thai word for river, *mae nan*, translates literally as 'water mother'. Rivers have often been linked with divinities, especially female ones. In Ancient Egypt, the floods of the Nile were considered the tears of the goddess Isis. Ireland's River Boyne, which is overlooked by the island's most impressive prehistoric burial sites, was worshipped as a goddess by Celtic tribes.

New Zealanders value rivers and lakes for their natural landforms, fluvial or lacustrine features and their visual landscapes. Rivers and lakes are also valued for their aesthetic or amenity, including recreational, and cultural values. Tangata whenua recognise many sites of mahinga kai, waahi taonga and waahi tapu of cultural and spiritual significance in the beds and margins of the Region's rivers and lakes. Accordingly,

Tangata whenua are concerned about activities adversely affecting traditional fisheries and other traditional food sources or food gathering areas, and other sites of spiritual and cultural significance (Manawatu-Wanganui Regional Council, 1995).

Figure 1.1 The river as a sustainer of life.



Source: pigrams

Fulgencio Manoel da Silva, Brazilian poet and social activist said that "the river is life-water. What we do with it affects the life of people, the life of animals, the life of the river and the life of the waters." Henry David Toreau once said, "Who hears the rippling of rivers will not utterly despair of anything." We go to the river's edge for comfort, spiritual renewal, meditation, solitude; we go to the river to feel and know the continuance of life (IRN, A Case for Living Rivers, 1999).

All land is a part of a watershed or river basin and all is shaped by the water which flows over it and through it. Indeed, rivers are such an integral part of the land that in many places it would be as appropriate to talk of riverscapes as it would be of landscapes. A river is much more than water flowing to the sea. Its ever-shifting bed and banks and the groundwater below, are all integral parts of the river – and the river as part of them. A river carries downhill not just water, but just as importantly sediments, dissolved minerals, and nutrient-rich detritus of plants and animals, both dead and alive (IRN Basics: A Short History of Rivers, 1999).

Rivers, and the rich variety of plants and animals which they sustain, provide hunter-gatherer societies with water for drinking and washing, and with food, drugs and medicines, dyes, fibres and wood. Farmers reap the same benefits as well as, where needed, irrigation for their crops. For pastoral societies, who graze their herds over wide areas of often parched plains and mountains, perennial vegetation along the banks of rivers provides life-sustaining food and fodder during dry seasons and droughts (McCully, 1996). The availability of an apparently renewing freshwater resource provided significant advantages to industrial technologies based in riverside towns and cities (Gore, 1996). Towns and cities use (and misuse) rivers to carry away their wastes. Rivers also serve as roadways for commerce, exploration and conquest.

Rivers are central to people's existence. One light-hearted interpretation of the Creation is that people were invented so that water could *walk* from place to place (Palmer, 1994). Palmer (1994) gives an overview of the values of natural rivers:

1. Rivers offer a way to enjoy the earth, to appreciate it. Fishing, boating, swimming hiking alongside waterways, and all forms of river recreation surge in popularity.
2. Time spent on rivers is more than recreation; it can be re-creation in the finest sense – a renewal of spirit, a refreshment of the mind, a reinvigoration of the body.
3. Floating on a boat in the current, people may see a kaleidoscope of scenery drift by. Skimming through morning mist, sneaking past herons, warming our bodies with sunshine that scatters stars of reflection across the water – all these moments add to people's understanding of what a river is.
4. Passions run higher on rivers. Life seems more vital. On a river, it's easier to believe in the power of nature, in the water cycle, in the chain of life, in the flow of nutrients down to the sea, in the fact that we are made from earthly elements and when we die, those elements go back to the ground and feed some other life.
5. Rivers are central to heritage, history, and recreation, and they are universally visited and depended upon.
6. In a society that has become increasingly urban and alienated from the natural world, rivers offer an opportunity to return, to rejoin the pattern and the company of life on earth, to share in their archetype of creation. But that possibility exists only if the rivers are worth going to (Palmer, 1994).

THE RIVERS IN THE MANAWATU-WANGANUI REGION

Many of the rivers in the Manawatu-Wanganui Region (Figure 1.2) are considered high quality recreational resources. Some of the rivers are of such natural significance that five of them have water conservation orders over significant reaches of them: Rangitikei, Manganui a te ao, Hautapu, Mangatainoka and Makuri. The presence of Blue Duck and trout fishing are important features of these rivers. Another river, the Whanganui, with its extraordinary Maori associations and history, lies at the centre of New Zealand's only river national park. One of the region's rivers, the Manawatu River which lies in the heart of Palmerston North, is an important river to the people in the Manawatu-Wanganui Region. However, many attributes and values associated with the Manawatu River and other smaller rivers in the Manawatu Catchment are endangered and undermined by current poor water quality. The Manawatu River is considered as unsafe for swimming and the regional council discourages contact sports in some river areas due to poor water quality that limits recreation opportunities (Manawatu-Wnaganui Regional Council, 1998).

THE LOWER MANAWATU RIVER IN PALMERSTON NORHT AS A CASE STUDY

The Lower Manawatu River was chosen as a case study for this thesis having read that the 1998 Wanganui Conservancy strategy has highlighted its concerns over recreation opportunities in the Palmerston North area. Palmerston North is the sixth largest city in New Zealand and yet both the "Crude Importance Method"[1] and ROS Mapping[2] findings by the Conservancy showed there were limited recreational opportunities left undeveloped in the Palmerston North Field Centre. It also showed in the Recreational River Inventory[3] to have virtually no top class river resources for recreation, yet the "Field Centre Overview" identified the Manawatu, along with the Rangitekei Rivers have high recreational use. This indicates perhaps the demand and population pressures in the Palmerston North area. There is some scope for the Department of Conservation (DoC) in Palmerston North to encourage promotion of river attractions outside the Field Centre. This researcher, however, believe that the Manawatu River as

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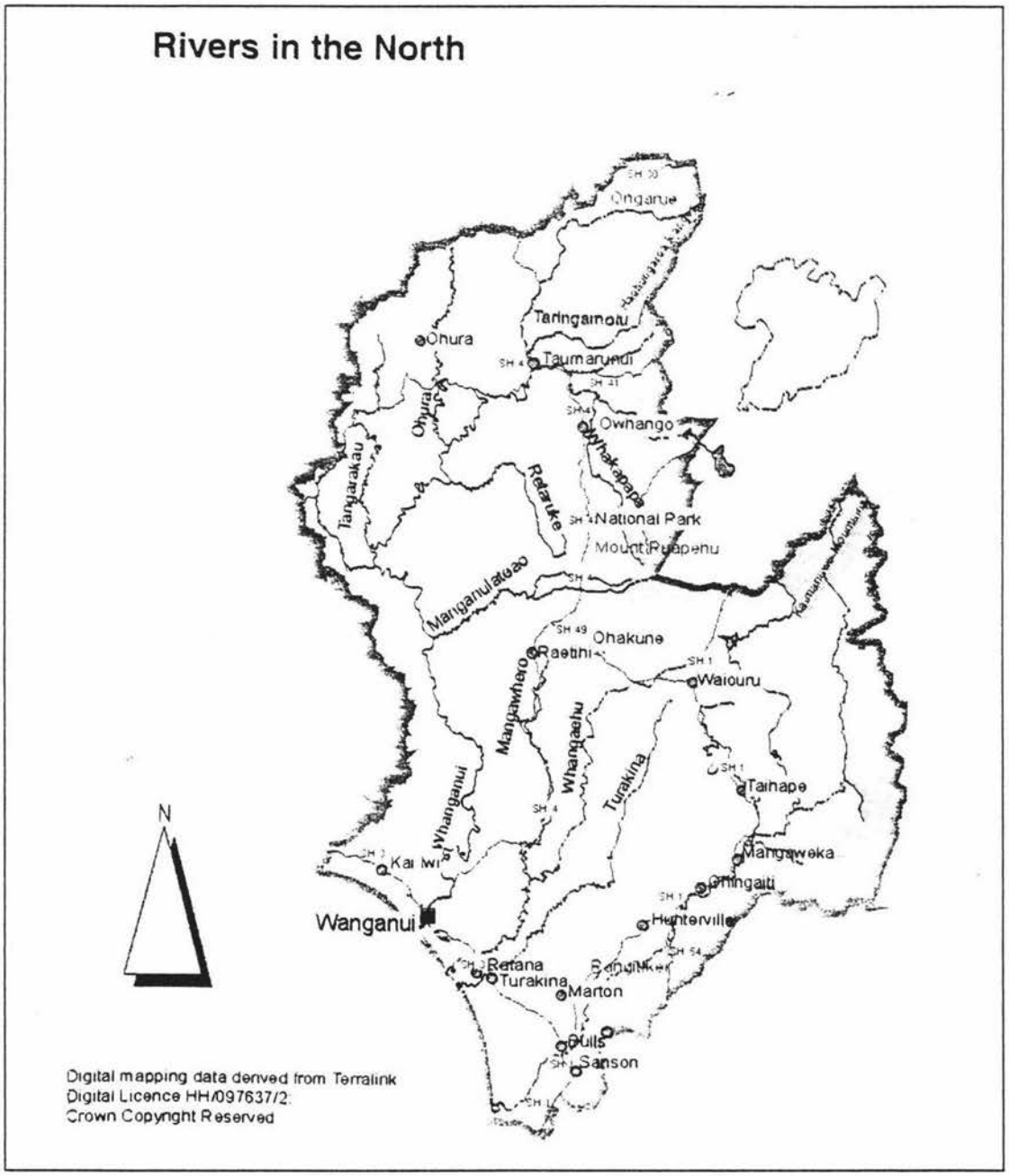
[1] The Conservancy is divided into six Field Centres. Staff in each Field Centre were asked to subjectively grade the importance and potential of each type of recreational activity both on and off DoC administered lands. A scale of 1 to 5 was used (very low to very high). This method was used to calculate a crude index of the present and future potential for various types of recreation (and all recreation). Types of recreational activities ranged from coastal to backcountry.

[2] Recreation Opportunity Spectrum (ROS) Mapping: this process classified land and coastal areas according to their different nature (eg. Urban to backcountry, sheltered coast to exposed coast, etc.). Areas administered by DoC and non-DoC areas were measured in hectares for each category.

[3] The "NZ Recreational River Survey" (GD and JH Eggar, 1981) was used as the basis for this evaluation.

a recreation resource, has a lot of potential to offer as a place for both active and passive recreation.

Figure 1.2 The Rivers in the Manawatu-Wanganui Region



Source: Horizons.mw, 2000

Kreutzwiser (1989:22) defines a *recreation resource* as an element of the natural or man-modified environment which provides opportunity to satisfy recreational wants. This author agrees with the Wanganui Conservancy's observation that Palmerston North area's lack of natural-based resource opportunities gives it a priority area for new

developments suitable for urban, low impact outdoor visitors and that the river's potential in this aspect is to be harnessed.

Pigram and Jenkins (1999) both point out that the process of creation, use and depletion of resources for outdoor recreation differs from that in other areas of human activity, such as agriculture, forestry or mining. There is nothing in the physical landscape or features of any particular piece of land or body of water that makes it a recreation resource; it is the combination of the natural qualities and the ability and desire of man to use them that makes a resource out of what might otherwise be a more or less meaningless combination of rocks, soil and trees (Clawson and Knetsch, 1966:7). However, certain plans or future proposals for this study may be limited by the 1991 Resource Management Act's strict adherence to sustainable management of natural and physical resources, in particular, the laws relating to management of water and soil resources which raised major issues of integration of management across land and water boundaries through the Resource Management Law Reform. Therefore, there is a need to look more comprehensively at wider environmental factors and ecosystems when making decisions about these resources (Ministry for the Environment, 1995).

The study applies the Recreation Opportunity Spectrum (ROS) approach combined with Landscape Ecology. The ROS framework is intended to help planners and managers contend with issues such as those noted above. The ROS serves as the basis for all recreation management plans. Investigation of present recreational use and trends at the Lower Manawatu River will guide in developing recreation management alternatives that best meets the people's needs. Mittman (1993) states that through the planning process, it will be determined what spectrum of recreation opportunities the agencies concerned will manage for and where these opportunities are located. The ROS concept will be further discussed in Chapter 3. The basic assumption underlying the ROS is that quality recreational experiences can best be assured by providing a diversity of recreation opportunities (Clark and Stankey 1979a). Thus, the ROS conceives of the recreation planning and management task as involving three distinctive elements – *activity, setting* and *experience* (Driver and Brown, 1978). A crucial problem for resource managers, then, is to respond to recreationists' desires for various kinds of appropriate settings and to produce as many of those experience opportunities (Mittman, 1993). It is important to note that *diversity* has also been rationalised in political terms, aside from economic terms. Burch (1974) argues that without broad political support, outdoor recreation areas are not likely to be maintained by society at

large, and that this support is not likely to be forthcoming if outdoor recreation areas do not serve the needs of many. As a backgrounder for this thesis, the 1994 Recreation Needs Assessment conducted by the PNCC showed a decreasing participation in team sports like rugby and football and other traditional activities, while the 2000 PNCC Report noted that overall walkway use appears to have declined slightly (5%) compared to 1999 but is higher than for 1997. Track use for the Riverside Walkway at Buick Park appears to show a steady decline in track use in this area. This decrease is attributed to a combination of increased use of the Otira Walkway-Mangaone Walkway Loop and the failing walkway counter mechanisms (which does not appear to record all those who pass over it). Other reasons were ascribed to an ageing population, development of the home as an entertainment centre, and more choice in the type of activity taken (PNCC, 2000).

Kreutzwiser (1989) says that as with resources in general, the supply of recreation resources depends, initially, on human recognition or perception of the environment as capable of satisfying those wants. However, society must also wish to use the environment for that purpose and have the ability, to appropriate technology, organization and administrative arrangements, to create an attractive, accessible and functional environmental setting for recreation.

Rosier (1998) affirms that in New Zealand, national and sub-national levels of planning are concerned about the health of rivers and with the obvious difficulties which arise when there is overlap between responsibilities of agencies and management regimes. For example, coordination is also required between provisions of Resource Management Act (specific functions of regional councils and territorial authorities), the Conservation Act (riparian protection mechanisms), the Biodiversity Act (pest management strategies) and the Reserves Act (protection or restoration of specific reserves). The type of approache/s [eg. Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), etc.] these agencies use in managing a resource base and a natural area like the river, and how various environmental issues and problems are dealt with will be investigated.

It is also important to look into the level of involvement, participation, support and current practices of concerned government agencies in recreation planning and management that affect the Manawatu River as a place for recreation. The research study also aims to recognise and identify constraints on recreation participation, explore ways to resolve or minimise conflicts between and amongst users within the context of

ROS and Landscape Ecology chosen to be used in the study that may contribute to better recreation planning and management by concerned government agencies like district and regional councils, they being directly involved in managing the natural and physical resources of the area under study. It will serve well to remember Knetsch's (1989) comment that recreation resources are not static or constant, but take on a dynamic character varying in time and space. Resources can become redundant. Changing economic, social and technological conditions can reveal new recreational potential in previously neglected areas, and the Manawatu river is given here as an example. Natural resources are cultural appraisals, and what is recognised as a recreation resource by one group of people (e.g. the Maori) at one period of time may be of no conceivable use or value to them or others in different circumstances (Knetsch, 1989).

The application of the two approaches mentioned in the research study in exploring the potential of the Manawatu River as a place for recreation is a valid area of research that can contribute in developing a framework which can assist New Zealand local authorities to improve recreation planning in river corridors. The ROS is a good basic framework which is accepted and used in New Zealand, and flexible that it is easy to introduce other analysis to deal with its deficiencies.

THE MANAWATU RIVER – JUST A FLOODWAY?

The river seems to be viewed by some people as a big drainage system, or as a floodway for the city, as related by Mr. Todd Taiepa (pers. comm., 2001; PNCC), as well as by other river users interviewed for this thesis. A number of authorities interviewed from both the regional and district councils agree that the city seemed to have turned its back away from the river. Egarr, G., Egarr, J. and MacKay (1979) conducted a scenic evaluation of New Zealand Rivers in which the Manawatu River, particularly between Ashhurst and Palmerston North, was rated poorly in terms of vegetation, landscape, wilderness quality, water quality, water movement, banks and riverbed. This study attempts to transform this poor and limited view of the Manawatu River and show its potential as an important natural resource of the City that can be fully utilised for leisure and recreation purposes. Pigram and Jenkins (1999) state that outdoor recreation is recognised as an important form of resource use, and much attention is given to how resources can be managed to provide a quality environment for sustained and satisfying recreational use. O'Riordan (1971:19) adds that 'resource management is becoming increasingly concerned with the protection and enhancement of environmental quality

and the establishment of new guidelines for the public use of such common property resources as air, water and the landscape'. Pigram and Jenkins (1999) say O'Riordan's definition and related perspective of resource management are closely aligned with the concept of Recreation Opportunity Spectrum that the research study will use this approach to attain its objectives set out in Chapter Two. With regard the Manawatu River's poor environmental assessment, Pigram and Jenkins (1999) further comments that some of the negative site characteristics noted in previous studies may be offset by good planning and design. Thus, Landscape Ecology has been chosen to be applied with the ROS method. The study starts with the review of the concepts of leisure and recreation, Chapter Two presents the thesis aims and methodology, while Chapter Three discusses and examines the Recreation Opportunity Spectrum and Landscape Ecology, and Chapter Four investigates the current practice in the resource management of New Zealand rivers, and how leisure and recreation are integrated into plans, focusing on the Manawatu River by the agencies and/or authorities concerned. It intends to find out the underlying issues and challenges in its management, and attempts to develop an approach to better integrate leisure and recreation issues in the present management regime, while protecting, improving and enhancing the river's potential as a recreational resource.

OUTDOOR RECREATION AND RESOURCE USE

The great outdoors presents a tremendous diversity of recreational opportunities. Likewise, the public was interested in tremendous diversity of recreational interests and needs. From city parks to pristine wilderness, people look to the outdoors to satisfy their recreational needs. In so doing, they attempt to match their desires, abilities, and expectations to a particular activity and setting. Recreation researchers have long recognised the importance of this relationship between expectations and settings. Many have suggested that recreation managers should provide a range of continuum of opportunities to best serve the diversity of public tastes for recreation (Clark and Stankey, 1979).

Because of the changing lifestyle, new recreational technology, and improved economic conditions, both the activities themselves and the patterns of participation are more diverse, more people are participating in various outdoor recreation activities than ever before. These have created a need for newer recreational opportunities and changes in many of the existing ones. Management is finding it more difficult to maintain existing

opportunities, to try to improve the quality of those, and still respond to the demand for new ones (Jubenville and Twight, 1993).

Pigram and Jenkins (1993) note that parks and recreation are clearly not the highest priorities in urban development, but their roles in social welfare and urban renewal are becoming recognised. Enhancement of recreation opportunities in urban areas is now seen to contribute substantially to the quality of life of local residents, and to assist with the creation of a sustainable urban environment. For instance, increased attention is being given to the historical and cultural significance of park and recreation resources in the US, with greater commitment to the restoration of historic buildings, facilities and designed landscapes. In Palmerston North for example, the city government has spent a considerable amount of money in improving and providing more facilities like the City Library, The Science Centre, Manawatu Museum and Art Gallery, and the Globe Theatre to mention a few geared towards the promotion of the arts and cultural endeavours amongst its citizenry. This, however, seems to focus more in the promotion of passive forms of recreation, rather than active ones. Gidlow, Cushman and Perkins (1995) note that despite New Zealand's sporting image, participation in sport is less popular than more sedentary forms of leisure and recreation. "Passive' forms of recreation, equally with sport and other forms of active leisure and the recreational arts make an important contribution to community integration. Urban restoration projects are also occurring in cities around the globe, taking such areas as remnant riverside ecosystems (see Gobster, in Dwyer and Stewart, 1995) and waterfront development (e.g. see Law 1993; Craig-Smith and Fagence, 1995; Williams, 1995).

During its 1994 conference, the New Zealand Recreation Association states that oftentimes, the resources and opportunities available do not meet the recreational needs of the community, and reiterated that recreation planning can assist in identifying the mismatches such as inadequate space, inappropriate facilities, programmes and services, lack of skilled personnel and lack of community consultation. Traditionally, as in the case of New Zealand, recreation planning has focused on measures of intensity, such as the number of visitors coming to a site or activity participation figures. While such measures are important, they nevertheless leave much to be desired. For example, they contain no conception of quality or visitor satisfaction. Nor is such information especially useful in dealing with questions concerning the most appropriate resource allocation, or how fair or equitable the allocation of recreation facilities and settings is among the various social groups (Stankey and Wood, 1982). This can be seen in some of the Department of Conservation's main themes with regard its

strategies in policy and funding levels: consolidation and caution, an emphasis on low impact, accessible opportunities and the importance of an advocacy role. Major new development is neither supported nor promoted by this strategy, and yet taking into account that managing conservation lands for recreation is a major part of this Department's work (Department of Conservation, 1998). This is where the Recreation Opportunity Spectrum's usefulness will be examined with regard to recreation planning and management, and in the provision of recreation opportunities at the Lower Manawatu River.

Identification of recreation resource potential, and classification and evaluation of resources for outdoor recreation are necessary, but only initial steps in the process of creating recreation opportunities (Pigram and Jenkins, 1999). Thus, resource managers must decide on the best mixes of access, sites, and amenities. However, growing concern for environmental quality has led to recognition of scenic quality of landscape as a major recreational resource in its own right, rather than merely as the visual backdrop for other recreation pursuits (Pigram and Jenkins, 1999). Looking at plans of previous years, this also appears to be the main concerns of the Manawatu-Wanganui Regional Council and the Palmerston North City Council, in addition to flood control schemes in the Manawatu River. While physical and natural circumstances will be most important for some forms of recreation, whereas for others, social factors may need to be taken into account, and created facilities and infrastructure may be mandatory for effective functioning of the recreation resource base.

Scherl (1994) notes that professionals within resource management agencies are predominantly from the biophysical sciences and general planning and management backgrounds. At best they have some understanding and sensitivity toward social scientists and believe in their contribution to resource management but not quite knowing why and how their contribution fits into the scheme of things. At worst, Scherl (1994) adds that this openness of mind is far from reaching some organisational milieu. These organizations most often, in accepting that their primary role is conservation of the natural resource, deal with human use as something which impacts upon the resource. It is 'impact', therefore, which is the focus of management preoccupation with little appreciation that managing for 'quality' use may well contribute to the alleviation of such impacts. The resource management profession in Australia, for example, is still some way from accepting that human beings are integral parts of ecosystems in its actions and policies. They primarily manage biosystems rather than ecosystems. It is the personal view of the researcher that to some extent, the same situation is

happening in New Zealand. For example, because of the preconceived notion of the unpredictable nature of the Manawatu River and concerns about flooding, authorities had been cautious and conservative in their approach in managing the river (i.e. providing access routes and walkways, parking spaces, pockets of garden along the river, etc.) for recreational use and purposes, as well as in improving and enhancing the visual amenities of the river environment.

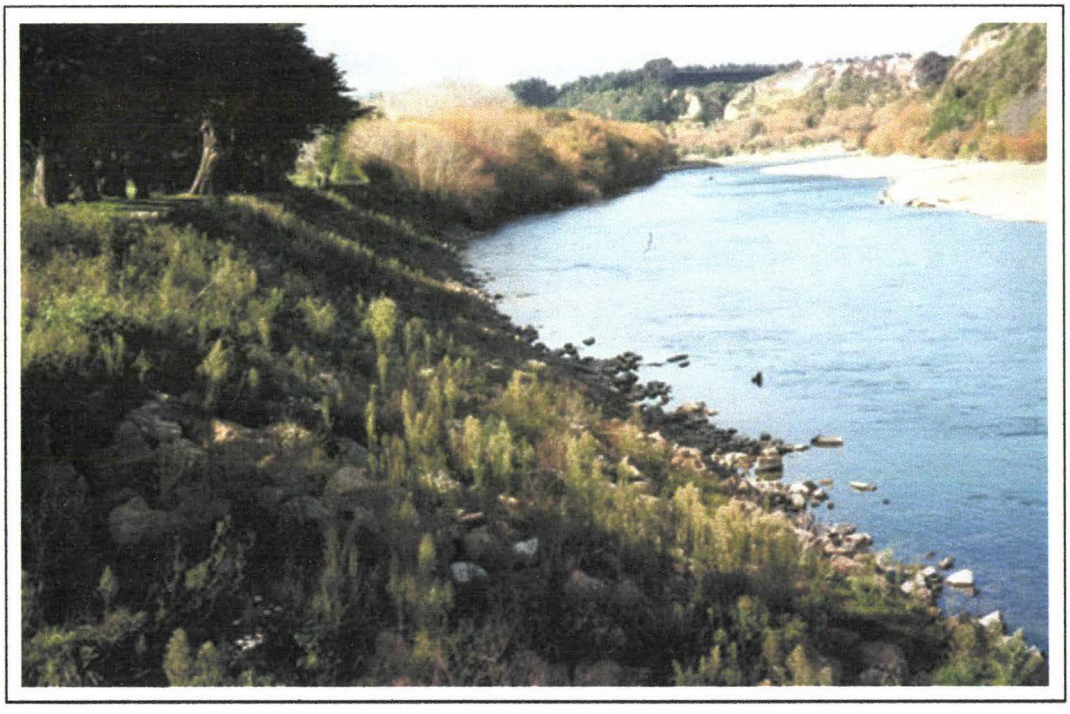
The tendency of rivers to erode, accrete, shift position and flood has long been regarded as intolerable in developed lowland areas (Eaton, 1981) like Palmerston North. Eaton (1981) says that increasingly massive engineering works have been constructed to restrain flow and reduce flood hazard, creating straightened, dredged and embanked channels (i.e. stopbanks along the Lower Manawatu River, see Photographs 1.1, 1.2 and 1.3) practically devoid of fringing vegetation. Where trees are used for erosion control and banks protection, Dawson and Kern-Hansen (1979) state that usually monotonous continuous planting is to be avoided because it creates excessive shade for fisheries and too much leaf accumulation in autumn, aside from reducing the visual amenity of the river environment. The river situation described by these authors is a perfect description of the Lower Manawatu River's present environment (see Photographs 1.4, 1.5 and 1.6). Evans (1968) summarises early New Zealand river-control works; Hey et al (1982) discuss fluvial processes, engineering and management; Evans (1964) summarises aspects of Lower Manawatu Scheme design and various Manawatu Catchment Board (MCB) scheme review reports constitute local river-control management documents. The study will investigate how this has affected recreation and leisure participation in the Manawatu River. Therefore, much lobbying is needed to shift such a paradigm.

OUTDOOR RECREATION AND THE MULTIPLE USE OF RESOURCES LIKE FOREST LANDS AND WATER BODIES

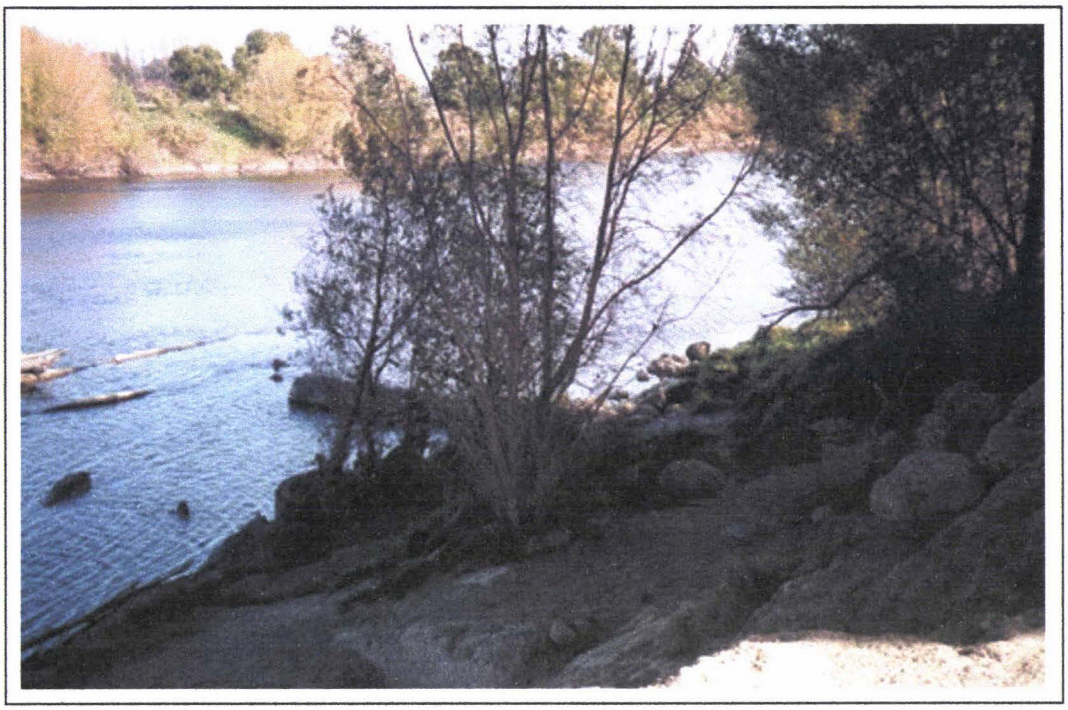
Outdoor recreation often imposes relatively non-aggressive and benign claims on the resource base, so that it is possible to envisage and actually plan for situations of multiple use. Forest lands and waterbodies are the most common examples of outdoor recreation existing as a compatible partner with the primary role for the resource. However, given the right circumstances, recreation activities can also co-exist with agriculture and grazing land (Swinnerton, 1982). Although, more common with publicly owned resources, opportunities for multiple use can also be found in areas in private ownership (Pigram and Jenkins, 1999). From a social perspective, multiple use makes

Photograph 1.1

Photograph 1.2



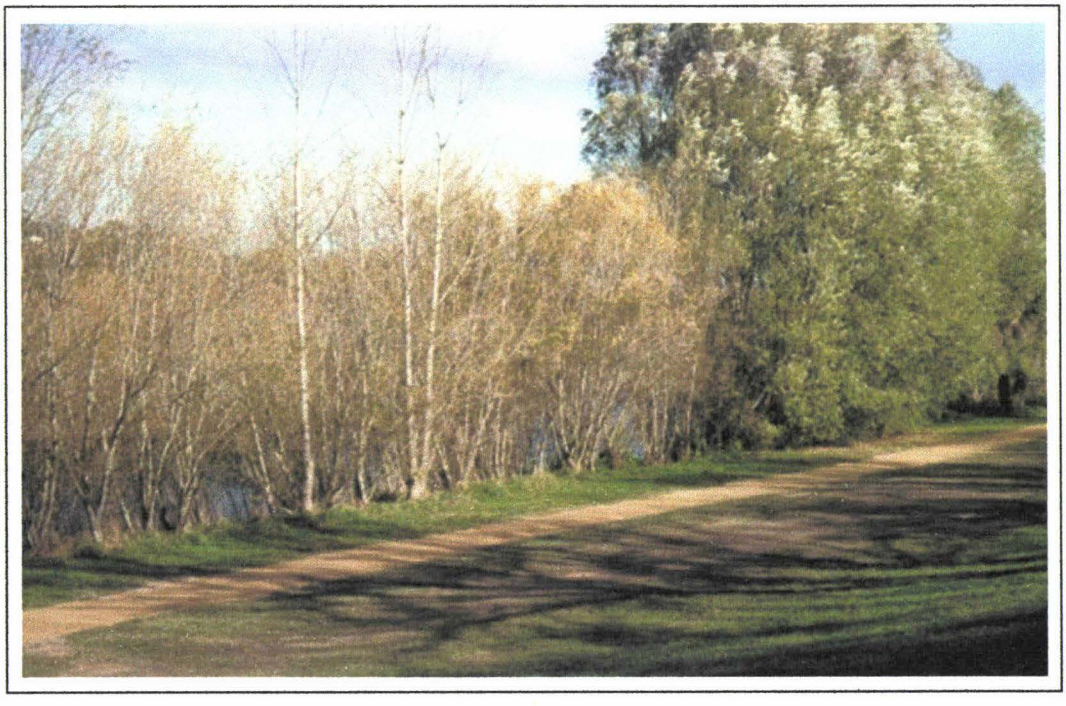
Photograph 1.3



Photograph 1.4

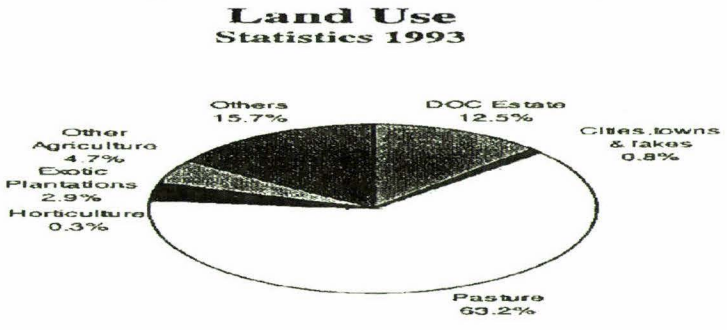
Photograph 1.5

Photograph 1.6



a lot of sense, especially where resources for outdoor recreation are limited (eg. Manawatu River), or where prevailing conditions (e.i. limited river access, lack of amenity values, poor water quality and quantity) limit their recreation resource potential. In economic terms, multiple use is justified if the combined benefits arising therefrom are greater than those from a single use, and are sufficient to cover any additional costs. This is generally accepted in the sphere of forest management, to include outdoor recreation. In the US for example, the *Multiple Use Sustained Yield Act of Congress*, provides for recreation as one of the main objectives of national forests. In Australia, managers of public forestlands have been slower to endorse recreation use alongside timber production. It is only in recent years that outright opposition to outdoor recreation in state forests has changed to guarded tolerance, and, now, to commitment to recreational use of forests and specific inclusion of recreation opportunities in management plans (Pigram and Jenkins, 1999). At the Manawatu River, recreational opportunities are being limited due to concerns about safety and poor water quality in a number of river areas. The authors continue to state that with water resources, the situation can be more complex. There are many different ways in which streams and waterbodies can function to satisfy recreation wants and there are different forms (sometimes, overlapping) of ownership and management of water resources (Pigram and Jenkins, 1999). In the case of New Zealand, a large number of protected areas or lands are on private properties, where land use (Figure 1.3) is predominantly pastureland or farmlands (Horizons.mw, 2000).

Figure 1.3 Land Use (Statistics 1993)



(Source: Horizons.mw, 2001)

Many of these farmlands are situated along rivers, streams and around the edges of estuaries and lakes where most runoff is generated and from where many contaminants are washed into these waterbodies affecting water quality which affects and lowers its recreational value (Auckland Regional Water Board, 1983). Expanding resource material through multiple use is a challenge, given the diverse interest and requirements

(see Table 1.1) of recreational fishing, swimming, boating and passive shore-based recreation (Pigram and Jenkins, 1999).

Table1.1 Examples of water-dependent and water-related recreation activities

Water-dependent activities	
Aesthetic appreciation of water	Powerboat racing
Beachcombing	Rafting
Canoeing	Sailing
Crew racing	Shell collecting
Driftwood gathering	Shellfish gathering
Fishing	Small boat cruising
Houseboating	Surfing
Ice fishing	Snorkel or scuba diving
Ice hockey	Swimming
Ice skating	Voyages in cruise ships
Wading	Model boat sailing
Waterfowl hunting	Playing in water
Waterskiing	
Activities that are frequently water-related	
Beach games	Pleasure driving
Birdwatching	Relaxing
Camping	Rock or fossil collecting
Hiking	Seasonal homes
Nature study	Sightseeing
Painting and sketching	Snowmobiling
Photography	Sunbathing
Picnicking	

Source: Chubb and Chubb (1981:314)

LEISURE AND RECREATION OPPORTUNITIES IN NEW ZEALAND

The opportunity to freely visit forests and coastlines, mountains and rivers, historic sites and attractive landscapes is a deeply cherished part of the New Zealand way of life (Department of Conservation, 1996). The country is well served in terms of availability

of outdoor recreation opportunities, and their abundance in a 'small package'. There are many thousands of kilometres of coastline and inland waterways, much of which has legal freedom of access, mountain chains which bisect both islands, considerable areas of accessible indigenous and exotic forests. Of this estate, over 30 per cent is in public ownership, much of it in national parks or reserves which have conservation as their first priority (Devlin, 1993).

Recreation is a significant feature of the New Zealand lifestyle. New Zealand has a strong tradition of participation in a wide range of recreation activities, including art and sport. Passive forms of recreation, equally with sport and other forms of active leisure and the recreation arts make an important contribution to community integration (Ministry for the Environment, 1995). In a country well-endowed with natural assets and with a well-developed income support system there is the potential for all New Zealanders to participate in some form of recreation (Ministry of Recreation and Sport, 1985). For most New Zealanders, the overwhelming recreational experience is a short visit during the course of a day to an enjoyable spot, somewhere in the outdoors (Marshall, 1995), and involves a diversity of activity primarily undertaken at an informal level, requiring no membership of a formal organization (Ministry of Recreation and Sport, 1985).

The concept of open space and the well-established practice of land protection initiated by the early settlers, relatively unpolluted air and water and distinctive plant and animal life have resulted in a physical environment conducive to recreation participation. Especially dominant is a park system including national, forest and maritime parks, historic and scenic reserves, walkways and a large number of local parks and reserves (Ministry of Recreation and Sport, 1985).

The country also prides itself on a clean and green image that attracts many tourists and recreationists, but this places considerable pressure on the environment in which people undertake outdoor recreation (Ministry for the Environment, 1995). One of the key issues is how to protect the mantle of conservation while still providing opportunities for visitors to enjoy New Zealand's natural heritage (Marshall, 1995).

THE HISTORY AND DEVELOPMENT OF LEISURE, RECREATION AND ITS SERVICES IN NEW ZEALAND

While this study will not detail the history of leisure and recreation in New Zealand, Watson (1993) provides a good chronicle of its history and describes that recreation in

Pakeha New Zealand passed from an undisciplined frontier stage to a long period in which it was an agency reflecting and encouraging discipline and group solidarity. The comparatively uniform pattern has now largely given way to one of diversity and individual choice, while recreation services in Aotearoa-New Zealand developed as a consequence of parallel and related physical fitness community health and social reform movements, begun in the late nineteenth century in a number of Western industrialised societies, and reflected concern that urban-industrial conditions were deleterious to healthy lifestyles, particularly of the urban working class (Hindson, Cushman and Gidlow, 1994). These movements, described as 'rational' recreation, gained considerable public strength during the late 1930s and early 40s. Prior to World War II, central governments and, to a lesser extent, local governments were slow to become involved in recreation provision as leisure was regarded as an individual responsibility (Larsen and Stothart, 1986). Governments limited their role of providing selected physical facilities such as national and local parks, some sports facilities, museums, art galleries, playgrounds and community halls. The current review of this author of the PNCC Draft Annual Plan 2000-2001 and Recreation Plan for 1998-2003, for example, shows that government still has not deviated from this practice, considering that local government is the arena where many, if not most, day-to-day planning issues are dealt with (Macbeth, 1996).

The author believes that there are many opportunities to better understand the 'recreating public' aside from providing facilities for recreation, and thus improve the delivery of recreation services. In the past, the major occupation for central governments was controlling and regulating undesirable 'recreational' activities, such as gambling, abuse of alcohol and prostitution, rather than promoting leisure. In Aotearoa-New Zealand, there was little concern with Maori leisure and the leisure of non-European immigrant groups, such as the Chinese, compared with the leisure provision of the majority British settlers (Perkins and Gidlow, 1991).

Central government involvement in recreation provision in Aotearoa-New Zealand is identified through two major legislative programmes, the *1937 Physical Welfare and Recreation Act*, and the *1973 Recreation and Sport Act*. The more recent *Recreation and Sport Act, 1987* (introduced by a Labour Government), and the *1992 Sport, Fitness and Leisure Act* (a National Government initiative), have continued this involvement although, in somewhat more restricted form. The 1937 and 1973 Acts, both introduced by Labour Governments, were significant particularly government services in Aotearoa-New Zealand. Whereas the prime motivation for the 1937 legislation which was

introduced at a time of post-Depression gloom was related to the need to have a fit and healthy population (partly, in able to respond to military action if required), the 1973 legislation introduced at a time of relative economic prosperity (Buchanan, 1978,16) was concerned with wider issues, namely the impacts on New Zealanders and their leisure of various social and economic developments, including increased urbanisation and industrialisation of both Maori and European populations, growing affluence and deepening relationship with the global capitalist economy. In addition, a number of sports leaders, spearheaded by Arthur Lydiard, argued at the time that a central government structure for sport should be established in order to provide more resources for sport (Cushman, 1995).

Both pieces of legislation embodied social reform ideals and aims of the welfare state and, for somewhat different reasons, leisure was regarded as being too socially and economically important to be ignored. As a continuation of the 'rational' recreation theme of the late nineteenth century a strong impetus of both reform programmes was educational and moral improvement and the need to reshape young people and workers by changing their leisure patterns from idle activity to activities that provided for personal growth and self-improvement and (while not always stated in this form) represented a long-terms investment in human resource productivity for industry. Thus, leisure and recreation were defined by many early authors and social critics in Aotearoa-new Zealand to be limited to 'socially responsible', 'constructive' and 'wholesome' activities. An interesting unexplored question is whether these 'normal' 'healthy' attitudes of leisure and leisure practice are still prevalent in New Zealand today, as is the case in the United Kingdom (see Rojeck, 1998). The most recent attempt by the New Zealand Government to become involved in assisting the development of recreation and leisure is the 1992 Sport, Fitness and Leisure Act. Whereas the 1973 legislation dealt broadly with leisure and less specifically with the physical component than the 1937 legislation, the Sport, Fitness and Leisure Act suggests a reversal, especially since most non-physical leisure pursuits are seen to fall outside the purview of the legislation (Laidler and Cushman, 1993).

Leisure studies in Aotearoa-New Zealand on the other hand has evolved along two related lines of enquiry: one concerned with the provision of recreation services and the other, more recent, with the study of leisure as a phenomenon of modern and post-modern societies (Cushman, 1995).

OUTDOOR RECREATION PLANNING

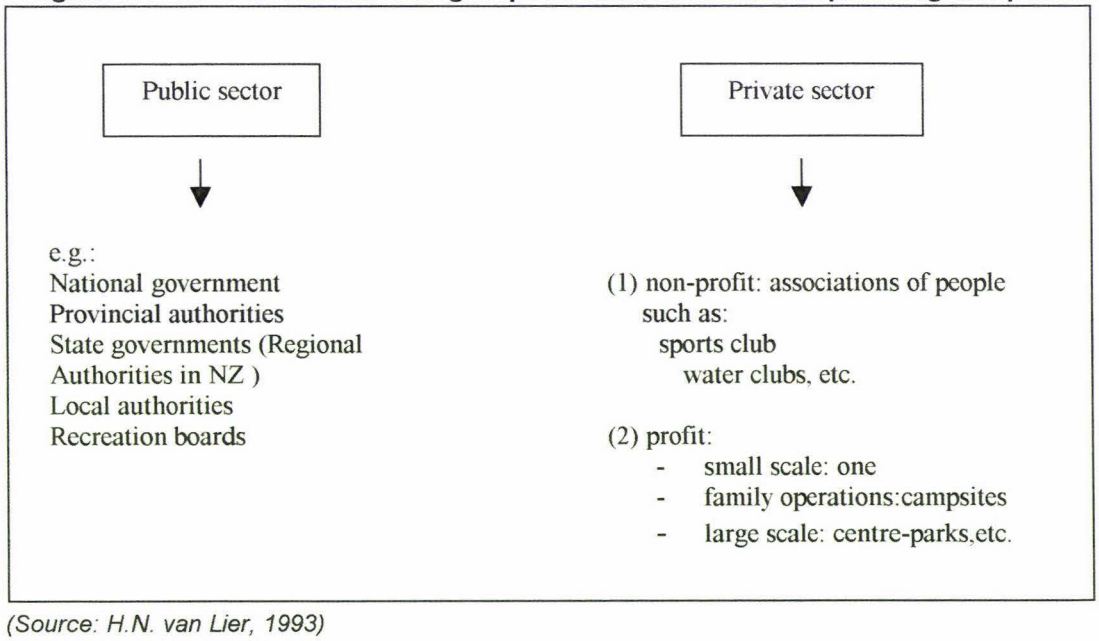
In the early 70's, the planning of outdoor recreation facilities focused on large-scale projects somewhere in the countryside and serving many demand centres, the need for today is for smaller provisions close-in, where demand drives the type of facilities, services and activities offered. However during the succeeding years, local government involvement in the provision of recreation has been substantial. Whereas earlier local authority initiatives were concerned primarily with the construction and management of playing fields and sporting facilities, such as swimming pools, playgrounds, parks, gymnasia and tennis courts, from the early 1970s efforts were directed also to other recreation development initiatives (van Lier, 1993). For example in Palmerston North, the 1970s saw the allocation of 867 acres of the city's land zoned for recreation either as reserves, parks or playgrounds within the city boundaries (PNCC, 1970; PNCC, 1972). However, the PNCC's most recent recreational needs assessment projected a much smaller figure (554 hectares) based on the comprehensive review of all the Council's recreation assets. This review included, for the first time, the area of land used for recreation purposes as part of the city's walkway system. Also included were the areas of land that Council had obtained for reserve purposes, but had not yet developed as a park or reserve (open space, amenity and undeveloped areas). The inclusion of the land listed above increases the accuracy in reporting of the City's reserve land stocks, but effectively created a new baseline standard as the revised figures are not directly comparable with those of previous years. At 554 hectares, the recalculated area of land held for reserve purposes is substantially more than the 393 stated in earlier monitoring reports (PNCC, 2000). Subsequent reports will be able to include more accurate information on changes to the amount of land held for reserve purposes within the City. In later years, it has provided a good number of multi-purpose venues such as the Centennial Convention Centre, the Showgrounds, the Community Leisure Centre and seven Community Centres. It has also refurbished educational and cultural facilities like the city library and branch libraries, the Science Centre and Manawatu Museum and Manawatu Gallery, the Regent Theatre on Broadway, the Globe Theatre, Caccia Birch House and the Square Edge to name a few. Just recently, the demand for improved swimming facilities prodded the city council to upgrade the Lido Aquatic Centre at a cost of $4.6 million.

Other changes in the 1970's included employing recreation staff in programming, the adoption of community development processes and the enhancement of recreation

planning and skills and capabilities (van Lier, 1993). From 1970 to 1975, the city council conducted several studies about recreational needs and assessment of the city. Examples of these are the 1970 Parks, Reserves, Playfields and Open Space Report, the 1972 Recreation Esplanade Report, and the 1975 Recreational Study in Palmerston North. But the review of these documents made very little reference to the Manawatu River, or its consideration as an alternate place for recreation and leisure activities for the city residents.

Initially, van Lier (1993) relates that recreation personnel were invariably enthusiastic volunteers, working from intuition, commitment and experience in promoting their particular activities. Apart from sport training for volunteers, which in general involved activity skills and games for youth, few other opportunities for recreation education were available until the early 1970s. Figures 1.4 shows the different interest groups in outdoor-recreation planning and policies, while Figure 1.5 shows the changing role of public bodies in outdoor recreation policy-making and planning.

Figure 1.4 The different interest groups in outdoor-recreation planning and policies

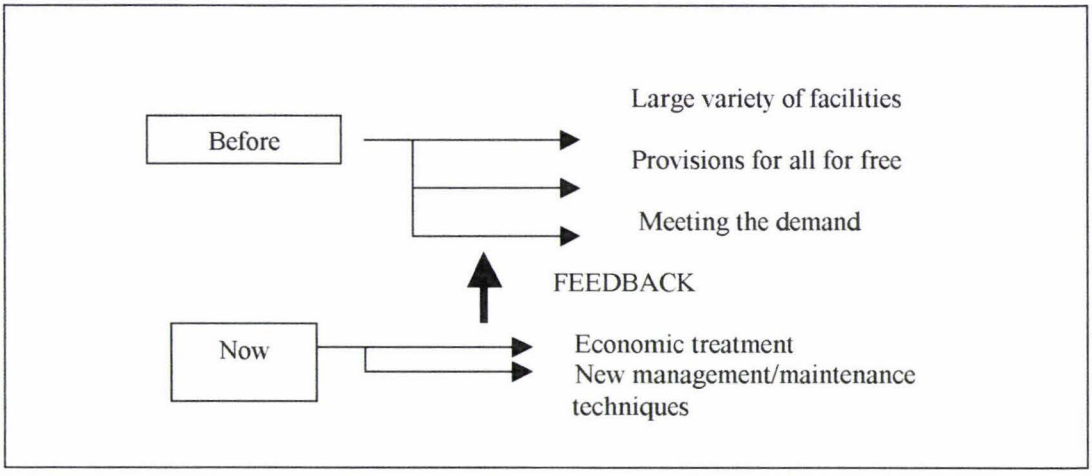


(Source: H.N. van Lier, 1993)

From the mid-1980s local government has come to recognise the value of private sector involvement in recreation provisions, as evidenced by contracting out some services and facilities (e.g., swimming pools and parks), and is apparent from the adoption of more corporatist approaches to the management of parks, recreation and sporting services (Perkins, 1992). The creation of responsive outdoor recreation facilities, it was learned, requires a combination of public and private participation, if not in their

management, then certainly in their planning (van Lier, 1993). The extent of both private and public involvement in outdoor recreation planning and management in the Manawatu River will be explored.

Figure 1.5 The changing role of public bodies in outdoor recreation policy making and planning



(Source: H.N. van Lier, 1993)

With regard to recreation and leisure education, involvement by New Zealand universities was limited to recreation being an extension of other disciplines, especially physical education (University of Otago), forestry and geography (University of Canterbury and parks administration (Lincoln College).

Van Lier (1993) states that the philosophy behind public involvement in the period between 1960 and the late 1970's was that recreation was needed to recover from the grind of daily work. It was a social need most of all. Therefore, it was appropriate that the public sector to be held responsible for providing recreation opportunity for everyone, in addition to what the private sector was doing. Figure 1.5 also summarises those historically involved in outdoor recreation delivery. And because of the strong increase in facilities and activities during former decades, recreation and tourism were increasingly perceived as economic activities. This not only meant that benefits were expressed in terms of money but also that management and maintenance, along with planning and policy making were studied in economic terms: How much does it cost, how can costs be reduced? Figure 1.5 presents the changes in conditions.

The economic crisis of the 1980s had as one of its consequences decreasing budgets at the national, regional and local levels, while at the same time, there was an

increasing need for unemployment money. This competition for public money resulted in smaller funds for among other things, outdoor recreation. While there are many plans, there even were fewer public funds, resulting in fewer provisions (van Lier, 1993).

LEISURE AND RECREATION

Leisure and recreation are widely recognised as important elements in people's lives, and are receiving increasing academic attention and respectability (e.g. Mercer 1980a; Chubb and Chubb, 1981; Patmore, 1983; Van Lier and Taylor, 1993; Lynch and Veal, 1996). They are vital social issues (e.g. Owen, 1984) and rewarding forms of human experience, constituting 'a major aspect of economic development and government responsibility' (Kraus, 1984:3). Evidence from national surveys, research studies and other data point to leisure as a major element in and individual's personal sense of life satisfaction. A perception of physical and psychological well-being pervades the survey responses regarding recreation (Mittmann, 1992).

KEY DEFINITIONS AND CONCEPTS: LEISURE AND RECREATION

Confusion arises over the indiscriminate use of the terms 'leisure' and 'recreation' that are closely related and often used interchangeably. The simplest distinction identifies leisure with time and recreation with activity (Pigram and Jenkins, 1999). Recreation is activity voluntarily undertaken, primarily for pleasure and satisfaction, during leisure time, but it 'can also be seen as a social institution, socially organised for social purposes' (Cushman and Laidler, 1990:2). Examples of these are house parties, balls, picnics, even hunting (Hall, 1985:43), as well as sports club, operatic clubs and athletic clubs.

The development of universally accepted definitions of these terms would be an impossible task and is outside the brief of this review. However, an attempt to clarify the boundaries between leisure and recreation is important for this study.
Aristotle viewed leisure as the state of being free from the necessity to labour. Freedom is generally considered the key element of leisure. Thus, many definitions link the notion of leisure with free time – periods that are relatively free of economic, social or physical constraints. In these terms, leisure is a residual component – discretionary time over and beyond that needed for existence (Clawson and Knetsch, 1996). But there are several problems with this point of view in that it assumes the dominance of a

work rather than leisure ethic, and it fails to give due recognition to the difficulty in distinguishing obligated time from free time (Pigram and Jenkins, 1999).

Leisure means different things to different people, and thus there are many definitions or conceptualisations of leisure (e.g. Pieper, 1952; DeGrazia, 1962; Parker, 1971; Kaplan, 1975; Godbey and Parker, 1976; Patmore, 1983; Lynch and Veal, 1996). However, three main aspects are commonly noted. First, leisure equates with the enjoyment and satisfaction derived from free-time activities. Second, leisure represents a spiritual condition or state of mind, with the emphasis on self-expression and subjectively perceived freedom (Neulinger, 1982). Third, leisure, in one or more of the above contexts, may be associated with activity.

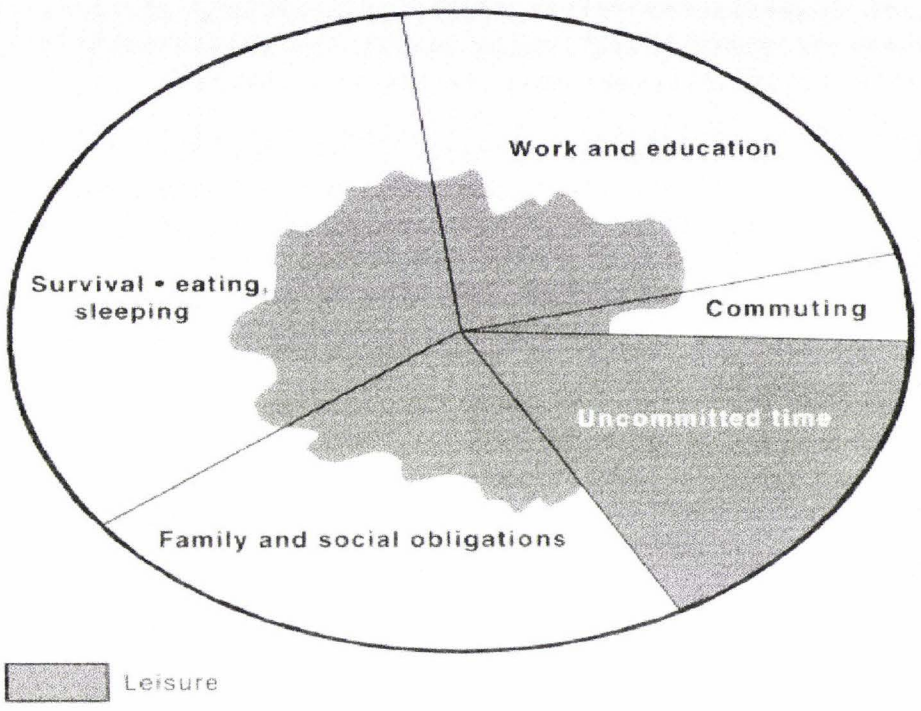
For the purpose of this study, Kaplan's (1975:26) definition of leisure is adopted in this thesis:

"Leisure consists of relatively self-determined activity-experience that falls into one's economically free time roles, that is seen as leisure by participants, that is psychologically pleasant in anticipation and recollection, that potentially covers the whole range of commitment and intensity, that contains characteristic norms and constraints, and that provides opportunities for recreation, personal growth and service to others."

At the individual level, perceptions of leisure depend very much on a person's subjective, individual and social/political circumstances, and on their view of the world (e.g. Parker, 1983). The sharp distinction implied between discretionary time and time needed for existence is blurred, as leisure is seen to overlap with other uses of time (See Figure 1.6). Despite these qualifications, it is probably true to say that for most people, leisure remains closely associated with uncommitted time (Pigram and Jenkins, 1999). As a basis for this review, 'leisure' is defined as a quality of experience for the individual rather than the more popular usage of the word to describe 'activity' or 'time'. Leisure time is needed for psychological and physical well-being, perhaps as much as work. One of the primary needs of people is leisure that affords psychological strength and refreshment (Perez de Cuellar, 1987). Leisure is considered primarily as a condition, sometimes referred to as a state of being, an attitude of mind. 'State of being' is emphasised less than the time and activity characteristics which merit social sanction and clarify definition: activity outside the work-place and the working day, week, year

and life, bringing extrinsic as well as intrinsic benefits: bringing, for example, fitness and health as well as immediate pleasure.

Figure 1.6 The diffusion of leisure time



Source: Department of Environment, Housing and Community Development (1977:1)

The concept of recreation, like that of leisure, is personal and subjective. Thus, value judgements as to the worth or 'moral soundness' of a particular activity often are inappropriate (Godbey, 1981). Generally, recreation implies revitalisation of the individual, although purists would argue that *recreation* is. Or should be, the culmination of recreational activity – 'the activity is the medium: it is not the message' (Gray and Pellegrino, 1973:6). If this argument were to be accepted, recreation could only be defined in terms of end-results, and potentially recreative activities which, for whatever reason, fail to 'revitalise' the participant, would be excluded. Rather than attempt to split ends from means, it would seem more useful to identify leisure as a process and recreation as a response. As Owen (1984:157) puts it: 'Leisure has now come to be viewed as a process (Kaplan, 1975) and recreation as an experience (Driver and Tocher, 1974), which is goal-oriented', with participation expected to yield satisfactions (London et al. 1977), and therefore physical and emotional rewards (Shrivers, 1967).

The terms 'leisure' and 'recreation' are often used interchangeably in New Zealand and their meanings vary depending on the context in which they are used. Most New Zealanders would require no help from theorists to understand what the term, recreation, mean when it refers to informal activities such as a picnic at the beach (Torkildsen, 1983). Nor would they have difficulty in recognising recreation's formal face drawn in the 1973 Recreation and Sport Act and the institutions it established. Often the simple, common-sense definition taken from the 1974 Toronto Ministry of Tourism and Recreation, will suffice:

> *"Recreation is what a person or group chooses to do in order to make leisure time more interesting, enjoyable and satisfying."*

'Recreation' is seen as the range of activities through which the individual can achieve the leisure experience. Recreation activity can vary from passive contemplation to strenuous climbing of sheer rock faces. Recreation setting can range from crowded beaches to isolated mountain streams (Mittman, 1993). It is tied historically and culturally to certain types of activities, especially sport, art and crafts, outdoor activities, hobbies, continuing education and activities with a service orientation. It is assumed to bring personal and social benefits including the restoration of the individual and social cohesion and, as a result, qualifies for support from the state (Perkins and Cushman, 1993). Regardless of the type of recreation, across the board benefits were cited – as a tonic for physical and psychological weariness and a respite from the day-to-day routine of activities. Psychological increments to the individual include the perception of personal development and self-reliance, communion with nature, a sense of renewal and relaxation from pressures. Significantly, the priority consideration given to outdoor recreation is consistent with persons on all levels of income, education, and occupational status (Mittmann, 1993).

There is a further advantage in linking recreation to activity that is socially approved of and 'controlled' by organization: it avoids the problem, for those who would like to plan or provide for leisure, that the most popular forms of leisure are associated with T.V., drugs, gambling, sex, risk-taking and 'just being idle,' and are often more awkward to control and to approve of officially. Attempts at control and rationalisation are demonstrated in the legislation directed at gaming, pornography and drug abuse (Ministry of Recreation and Sport, 1985).

In terms of family and community that are central elements in people's lives, recreation is a primary link in building and maintaining these necessary social interactions. Family relationships are enhanced when the opportunity for experiencing outdoor recreation settings together result in eased tensions, better communication, and possible long-term behavioural improvements leading to better family cohesion. The shared enjoyments of outdoor recreation cement social relationships between existing and new-found friends in the community (Mitmann, 1993). Outdoor recreation brings joy and pleasure to many people, with the provision of appropriate recreational opportunities 'critical to the satisfaction of an individual's need for cognitive and aesthetic stimulation, one of six needs identified by Maslow (1954) as basic to human well-being' (Faulkner 1978, in Walmsley and Jenkins 1994:89). Economic benefits resulting from outdoor recreation include improved health and job productivity. Increased tax bases for community services and increased regional income can be brought about by preservation of the resource for recreational activity. Outdoor recreation is a multi-billion dollar industry that provides jobs, and produces goods and services.

RECREATION NON-PARTICIPATION AND LEISURE CONSTRAINTS

Recreation need is characteristic of all human beings, but as Veal (1994:189-90) so coherently stated:

"Every individual is unique and so could be said to have unique leisure requirements. In family settings and some organisational settings this uniqueness can be catered for, but human beings are social animals with interests, demands and needs in common...Classifying people into groups and considering their common characteristics and needs is not therefore to deny their individuality; in fact, it has been failure of providers to consider the common needs of some groups which has, in the past, denied members of such groups their individuality. As a result of campaigns, regulations, research and spread of ideas such as 'market segmentation' and 'niche marketing', some of these problems are beginning to be overcome."

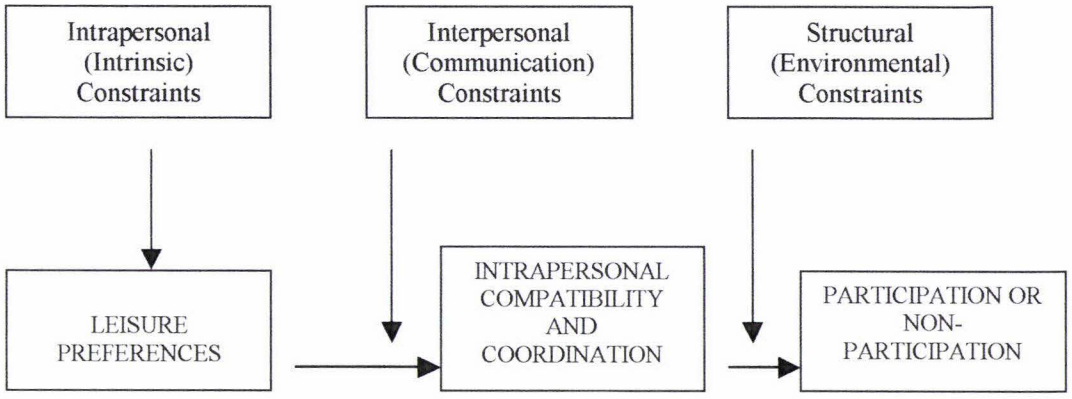
While there are many benefits associated with leisure participation (Kelly, 1990; Kraus, 1984), some people are unable to experience certain leisure activities because they face constraints or barriers to their leisure. Both Kennedy, Smith and Austin (1991) and Crawford, Jackson and Godbey (1991) developed models detailing barriers or constraints to leisure behaviour.

Part of this study also explores the benefits of leisure and recreation from outdoor recreation as that in the Manawatu river, as well as the constraints or barriers that prevent people from full leisure and recreation participation and enjoyment. A constraint to leisure is defined as anything that inhibits people's ability to participate in leisure activities, to spend more time doing so, to take advantage of leisure services, or to achieve a desired level of satisfaction (Jackson, 1988, in Jackson and Henderson, 1995:32; also see Henderson et al. 19889:17). The constraints associated with leisure and recreation participation have been studied by several authors in general terms, and in specific terms with reference to special groups, including people with disabilities, youth and adolescents, the elderly and women with physical disabilities. In the main, two types of constraints have been identified – intervening constraints [those that come between a preference and participation and which thereby limit participation] and antecedent constraints [those that influence a person's decision and subsequently inhibit preferences] (Pigram and Jenkins, 1999).

Research on constraints to leisure behaviour and recreation participation is growing conceptually, theoretically and in practical application. Work on leisure constraints and barriers has a relatively lengthy history, with the Outdoor Recreation Resources Review Commission (ORRRC) studies in the 1960s (e.g. Ferris, 1962; Mueller, Gurin and Wood, 1962) receiving considerable prominence. Since the early 1980s, however, constraints research focused on intrapersonal, interpersonal and structural constraints.

There are some for whom participation in, and the resultant satisfaction derived from, recreation requires that special services, programmes and/or facilities be provided to ameliorate or remove leisure constraints. These people are commonly regarded as having special needs, like for example the physically challenged, handicapped or disabled. Kennedy et al. (1991) contended there are three main categories of barriers preventing people with disabilities from full leisure participation – intrinsic barriers, which are associated with a physical, psychological, or cognitive disability; communication barriers, which block interaction between the individual and his or her social environment; and environmental barriers, which include the many external forces that impose limitations upon an individual with disability. These proposed barriers (Figure 1.7) are similar to those in the model developed by Crawford and Godbey (1991) as shown in Figure 1.8 proposed by Crawford, Jackson and Godbey (1991). We shall attempt to identify the type of barriers that may constrain or limit the participation of river users at the Manawatu River.

Figure 1.7 A model of leisure constraints.



Derived from: Crawford et al. (1991) and Kennedy et al. (1991).

As illustrated in Figure 1.7, intrapersonal (intrinsic) constraints on leisure were proposed by Crawford et al. (1991) to be influential in the formation of leisure preferences or leisure interests. Most research in the area of constraints on leisure, however, examines issues related to interpersonal and structural constraints, which are proposed to only occur after a person develops interest in an activity. For example, common constraints under study include the lack of availability of other people (interpersonal), or the lack of time, money, or transportation (structural). Few studies have examined constraints on leisure that could potentially affect leisure preferences (see Raymore, Godbey, Crawford, and von Eye, 1993), and virtually no research has examined intrapersonal constraints on leisure as experienced by people who have disabilities. Leisure researchers know relatively little about the factors which influence the development of leisure preferences, both in terms of those factors which constrain leisure preference formation and factors or personal characteristics which facilitate the development of leisure preferences (herein referred to as *intrapersonal facilitators*).

These authors proposed that *intrapersonal constraints* are personal characteristics, beliefs, perceptions, or attitudes which influence peoples' leisure preferences; *interpersonal constraints* occur when individuals are unable to find others with whom they may participate in leisure activities; and *structural constraints*, are those which occur external to an individual (e.g. stopbanks, steep slopes, limited entry and exit points, etc).

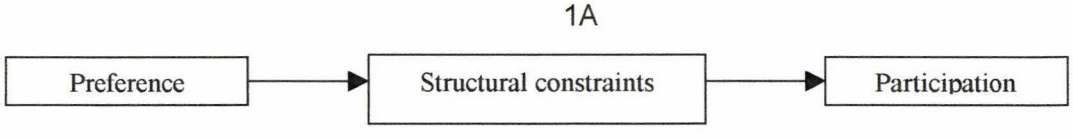
In 1991, Crawford, Jackson and Godbey revisited that formulation. In its place, they proposed a hierarchical process model (Figure 1.8), in which three types of constraints above (intrapersonal, interpersonal, structural) were integrated. They derived three positions from that model:

- leisure participation is heavily dependent on a process of negotiating through an alignment of multiple factors, arranged sequentially;
- the sequential ordering of constraints represents a hierarchy of importance;
- social class may have a more powerful influence on leisure participation and non-participation than is currently accepted (i.e. the experience of constraints is related to a hierarchy of social privilege).

According to Pigram and Jenkins (1993), Crawford et al. believe that this more recent model may help to clarify some paradoxical findings that were not fully explained previously. In particular, they noted the more frequent reporting of structural constraints among people of higher socio-economic status. They go on to point out, however, that this hypothesis is largely speculative, and that research should proceed in three main directions. First, there is a need for intrapersonal and interpersonal-level data, with investigations encompassing the entire array of constraints – intrapersonal, interpersonal and structural – simultaneously. This would permit testing of propositions that people negotiate through sequential levels of constraints, and that these levels represent a hierarchy of importance.

Jackson, Crawford and Godbey (1993) even further suggested that leisure constraints negotiation (i.e. how a person decides to experience an activity despite the constraints encountered) is the key to understanding constraints. Whatever the case, constraints to leisure (whether they lead to non-participation to less than optimal participation from the participant's perspective) stem from many factors, including biological, sociological, political and economic resources. For people to find leisure experiences or to establish desired levels of participation, planning and management to ameliorate or remove constraints are required.

Figure 1.8 Crawford and Godbey's three types of leisure constraints



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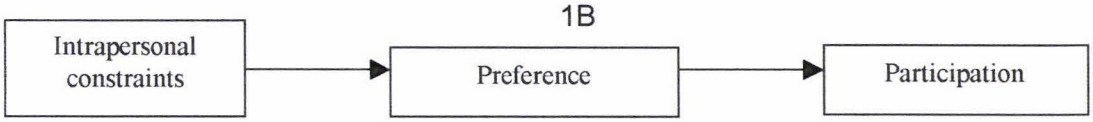

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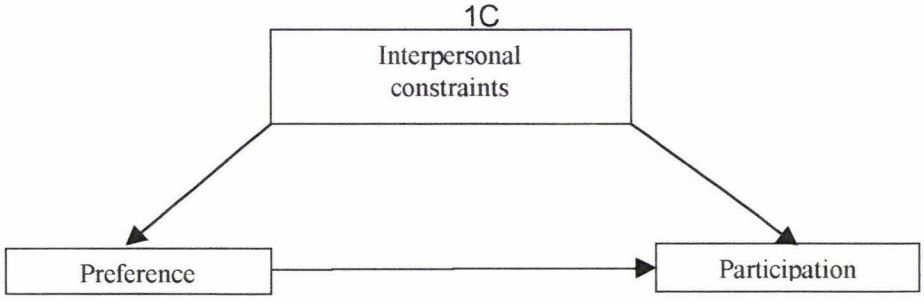


Source; Crawford et al. (1991).

NON-USE OF AN URBAN RECREATION OPPORTUNITY

Another relevant concern in the study is the issue of non-use or under-use of a given urban recreation opportunity, like a natural resource as the Manawatu River, being conveniently located in the heart of the city. Pigram and Jenkins (1999) say that failure to recognise urban recreation opportunities is not always confined to city administrators. Potential users too seem reluctant at times to avail themselves of the facilities provided. An Australian study through field observations have suggested some surprisingly low levels of utilisation of recreation space in the inner core of some cities. For example, it was found that in the inner suburbs of Melbourne, a neighbourhood park was not a 'particularly vital part of most residents' perceived environment (Cole, 1977:93). Although, considerable diversity was discovered in user groups and activities, the dislike for the park displayed by children, in particular, was traced to constraints on natural patterns of active child behaviour; possibilities for creative play in the park were virtually non-existent. It would be interesting then to find out how Palmerston North City residents perceive the river as a place for recreation and leisure, the reasons or motivation for its use, and the accessibility issues that may be raised during the conduct of the interviews, and to be reflected on various responses on the survey-questionnaires to be distributed.

The broader issues of non-use and under-use of urban parks were first highlighted by Gold (1972). Gold concluded that the major constraints could be grouped into three categories – *behavioural*, *environmental* and *institutional* (**Table 1.2**).

Table 1.2 Major causes of non-use in neighbourhood parks

Behavioural	Environmental	Institutional
User orientation*	Convenient access*	Goal differences*
Social restraints*	Site characteristics*	Personal safety*
Previous conditioning	Weather and climate	Relevant programme
Competing activities	Physical location	Management practices
User satisfaction	Facilities and development	Maintenance levels

Source: Gold (1973:103)

The ones with asterisks are the most significant in each category relative to all factors (it will be interesting to see whether the results of the Manawatu River study will reflect the same results as Gould's). Not all of these inhibiting factors are easily countered, but obviously access, site characteristics, location, level of facilities, safety considerations and management and maintenance are subject to manipulation.

Among those questions that need to be answered in this study are: How well-planned are the river environment and the adjacent open spaces (i.e. Esplanade, Ongley Park) for recreational use and enjoyment of the public? Have the concerned agencies or authorities already maximised the use and potential of the river environment as a place for leisure and recreation? And supposing they have, then, what keeps people from participating in a specific recreational activity? Have they really responded to the recreation demand of river users? What have they done so far? What is or are lacking? How can the ROS approach help improve the recreation potential of the resource?

Thus, the questionnaires for this study will be designed in such a way as to possibly group the constraints based in Gold's categories, and from there form our analysis, evaluation and recommendations. Gold's comments supports the view that non-planned designation of open space in urban areas, with little thought to effective location size and quality, will probably ensure that it remains open space – empty and ignored. Patmore (1983) pointed out to several factors impinging on patterns of use and non-use of recreation facilities. Effective access is not related to convenience of location alone. Patmore categorised four types of barriers to access:

- physical barriers – which include personal limitations and the nature of intervening spaces;

- financial barriers – which impose a direct economic constraint through high levels of admission charges or equipment costs;

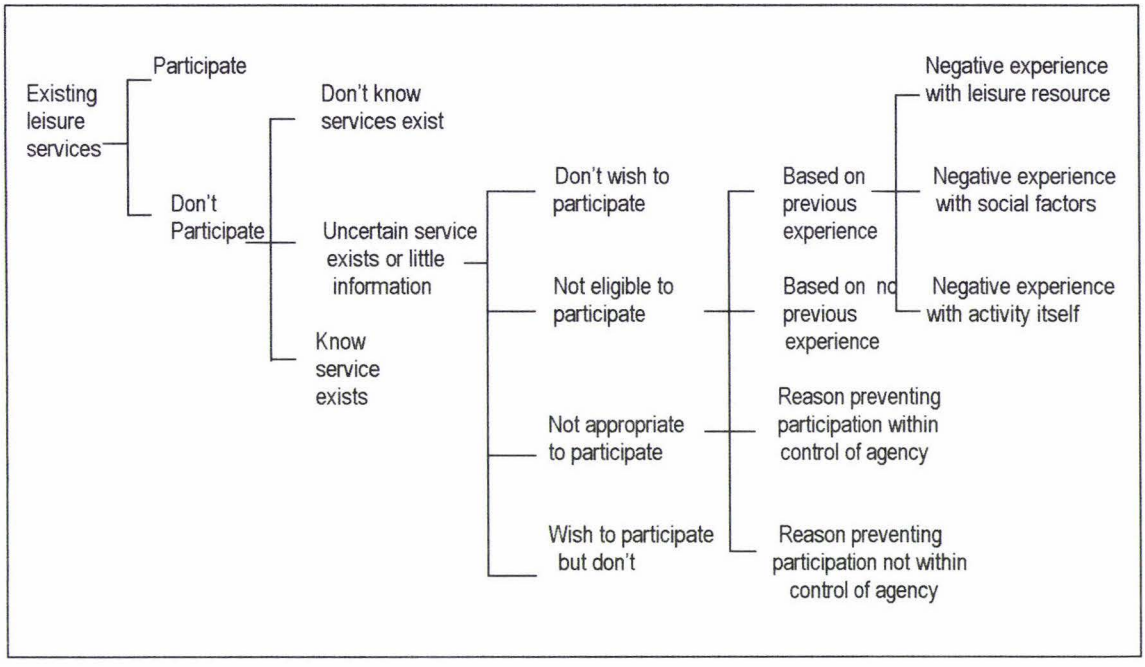
- social barriers – which arise form the association of the images of certain recreational pursuits with social status;

- transport barriers – which relate to lack of access to a vehicle and associated time/cost deterrents on participation.

Godbey (1985) translated many of these constraints on participation into a useful model for summarising the reasons why people do not participate in a specific recreational activity (Figure 1.9). The model when applied to an urban park, can identify options for management. Such remedial measures need not be elaborate and can be as simple as relocation of an entrance or better maintenance of grounds. At present, access to the Manawatu river based on previous inspection of the study site, seems to be constrained by physical (i.e. poor access and visual exposure) and transport barriers (i.e. parking areas too far from picnic areas), and Godbey (1985) asserts that there is a need to identify and redress causes of, and responses to, underuse of recreation facilities or recreation areas. Some of the techniques used to identify and redress causes of, and responses to, underuse of water storages in the US are set out in Table 1.3.

The research will examine which of these solutions have been applied by the agencies concerned, or perhaps other techniques may have been used suitable to New Zealand's experience of managing natural recreation areas set in an urban setting like Palmerston North. More generally, solutions to a lack of readily accessible recreation opportunities in cities, rest with more enlightened planning of the urban environment to provide adequate recreation space and appropriate recreation facilities to meet the demands of their citizens (Pigram and Jenkins, 1999).

Figure 1.9 A model in non-participation in leisure services



(Source: Godbey, 1985)

Table 1.3 Identifying and solving under-use of an urban park

1 Identify reasons causing underuse	2 Identify techniques/solutions	3 Evaluate feasibility & effectiveness	4 Apply techniques/solutions
Poor access and visual exposure	* Provide better access to and within area * Provide information to people about recreation opportunities at the area through the use of signs, maps, brochures and other media		
Very steep slopes and situated relatively far from the lake	* Relocate tables to more suitable locations (i.e. areas offering good views of lake and on more level land)		
Parking areas too far from picnic tables	* Provide conveniently located parking areas near picnic tables		
Heat, limited shade, lack of shelters, little greenery	* Provide shelter from heat and rain * Provide more and better land-scaping and irrigation to make the area more attractive		
Lack of group picnic area	* Provide facilities fro group picnicking, as well as single and multiple family settings		
No play area for children	* Provide play area for children		
Inadequate cooking grills	* Provide more and better grills for cooking		
High grass and vandalism	* Provide better maintenance and strict enforcement of regulations		

(Source: Pigram and Jenkins, 1999)

Many factors affect recreational motivation and choice (Pigram and Jenkins, 1999), with much debate continuing about the forces affecting recreation decision-making at the individual, group and social levels. To further explore the nature of recreation demand and participation, and the range of influences on recreation choice behaviour, Swarbrooke's (1995) identification of a number of variables to classify attractions according to their target market or markets, of which are the following:

1. age
2. sex

3. stage in the family cycle – children, young single adults, young couples, young couple with babies, growing family, 'empty nesters', and old age
4. social classes
5. place of residence
6. days visitors vs. staying visitors
7. individuals or groups
8. type of transport used to travel to the site or attractions (e.g. bicycles, scooters, cars, motorbikes, etc.)
9. when they visit the site or attractions – season, month, day of the week, and time of day
10. the personality of visitors and their lifestyle

Swarbrooke (1995) also gave other customer-oriented way to classify attractions (in this case the Manawatu River) in terms of the benefits visitors expect from visiting them. There are many such benefits but the following brief list will provide a general range among which are to be used in the study:

1. nostalgia/memories
2. learning something new
3. economy and value for money
4. good service
5. a variety of on-site attractions to satisfy a family with different tastes and preferences
6. easy accessibility
7. good catering*
8. clean environment
9. exercise
10. buying souvenir*
11. excitement
12. light-hearted entertainment

**May not be applicable in this study.*

This information will further strengthen the reasons on the range of influences and recreation choice of individuals and groups. Thus, it is important to involve in the research-survey a wide spectrum of river users. Pigram and Jenkins (1999) pointed out, however, that much outdoor recreation research is generally disjointed (e.g. longitudinal studies are lacking), and is relatively scant in such countries as Australia

and New Zealand, as compared to North America and the UK. Research reported by Hendry (1993) in New Zealand and Hamilton-Smith (1990) in Australia, suggests that the most frequent users of local government recreation services also tend to be the most well-off in the community. Access and the use by low-income groups, ethnic minorities, the Aborigines (or the Maori people as in the case in New Zealand), the aged, persons with disabilities and women are more restricted (McIntyre, 1993:33). For many categories, lack of status, money, mobility, ability and agility, access or awareness, can all inhibit the purposeful use of leisure and, therefore, knowledge of, access to, and participation in recreational activities. In short, the use of leisure, and the nature and extent of participation in outdoor recreational activities, vary spatially and temporally, and fluctuate, sometimes unpredictably, with changes in taste and fashion, and with other developments on the local, regional, national and global scenes. This study however, will not dwell on the social or economic background or issues of the river users or recreationists to be interviewed in this study. Clearly, an understanding of outdoor recreation patterns and processes requires an appreciation of such factors as:

- people's motivations, choices, participation and recreational satisfaction; and
- planning and policy-making

How these factors affect the pattern of recreation at the Manawatu River will be examined in Chapters 4 and 5.

CONCLUSIONS

If recreation is a fundamental human right, educators, planners and policy-makers must continue to probe depths of accessibility in all its dimensions, and promote an egalitarian recreation ethic which fully accepts the recreational needs of people whatever their age, race, sex or sexual preference (Pigram and Jenkins, 1999). However, this will only be possible if there is sufficient depth of understanding of leisure and recreation and of the environment where it occurs, the constraints and/or accessibility to leisure opportunities, and the resources which the public sector and communities (e.g. private groups, associations and volunteers) are willing to provide. The chapter also examines the New Zealand experience regarding recreation, as well as its development throughout the years, the administrative, legislative and policy frameworks in managing its physical and natural resources, and from them develop better strategies for recreation planning and management of a natural resource used for recreation.

Chapter Three introduces the concepts of Recreation Opportunity Spectrum and Landscape Ecology and aims to illustrate that through the use of the Recreation Opportunity Spectrum combined with Landscape Ecology, recreation planners and managers can develop an improved and better planning framework in providing a diversity of recreation opportunities at the Lower Manawatu River for the recreating public that offer quality experiences without compromising the ample protection and conservation values of a natural resource base which is utilised for recreation purposes.

CHAPTER TWO

THESIS AIMS AND METHODOLOGY

'Plan in full awareness of nature's forces, forms and features – sweep of the sun, the air currents, the peaks and hollows of the earth, rock and soil strata, vegetation, lakes and streams, watersheds and natural drainage ways – and this awareness should obviously entail planning in harmony with the elements of nature. If we disregard them, we will engender countless unnecessary frictions and preclude those experiences of fitness and compatibility that can bring so much pleasure and satisfaction of our lives'.

- J.O. Simmonds (1983), Landscape architect

THESIS AIM, OBJECTIVES AND RESEARCH QUESTIONS

The overriding aim of this thesis is:

> To investigate the Applicability of Recreation Opportunity Spectrum and Landscape Ecology for Integrating Recreation and Leisure Issues Into the Management of the Lower Manawatu River

CENTRAL QUESTIONS:

- What are people doing for recreation in and along the river? Do such factors as age, gender, income and education identify those most likely to engage in particular activities?
- How do users differ in perception and priorities with regard the recreational use of the Manawatu River? And more importantly, do decision-makers (e.g. planners, resource and/or recreation managers) possess the same perceptions as the public/river users? If not, where do they differ, and in what aspects?
- Is participation in natural resource based recreations like that in the Manawatu River growing, shrinking or remaining relatively stable? What factors affect trends in recreation?
- Would providing greater access increase participation in recreational activities in and along the river?

- Cloke and Park (1985) stated that inevitably, many forms of recreational activity are compatible with others, some are not, and they have to be specially sited. How can conflicts be resolved or avoided? What measures or strategies can be employed to settle differences and conflicts between and among users?
- How can we develop a better assessment criteria for the recreational use of the Manawatu River considering its conservation value to the individual, the community and the concerns about flooding?
- What kind of information would recreation and resource managers need in order to make good decisions that would result in presenting the best mixes of access, sites and amenities?
- Would information on recreation participation of individuals and groups suffice to make good decisions? Would it be adequate to contribute to a better policy and practice with regard river management and development of the river as a place for recreation?

This research study develops an analytical framework for decision-making in providing recreation and leisure. It offers a context for the analysis of specific individual and/or recreation groups, and reinforces the vital role of community participation in river management and development.

THE PROCESS:

To explore the potential of Gravel-Bed Rivers for outdoor and resource-based recreation focusing on the Lower Manawatu River as a case study requires consideration of the following:

1. Historical aspect of river development
2. Statutory requirements and local and central government functions
3. River control schemes
4. Environmental values of rivers
5. Recreational values of rivers
6. Land use impacts
7. Social and environmental restraints in the management of the Manawatu river

II. Research Objectives

The aims of the research are as follow:

OBJECTIVE ONE:

- To explore the Recreation Opportunity Spectrum and Ecological Planning Approaches.

Research Questions:

1. How have the ROS and Landscape Ecology evolved?
2. What are the components of ROS and Landscape Ecology?
3. How are they defined?
4. What are the characteristics of ROS and Landscape Ecology?
5. What are the applications of ROS and Landscape Ecology in recreation planning and provision?
6. What are the advantages, as well as the arguments, limitations or criticisms against ROS or Landscape Ecology, and how can they be remedied?

OBJECTIVE TWO:

- Analyse the challenges, issues and experiences faced by concerned government agencies/institutions with regard river recreation management, and why they have often excluded consideration of the recreational use of the river;
- Explore the differences in perceptions and priorities of various stakeholders (e.g. private individuals, anglers club, canoe club, walkways promotion society, jet boat association, tramping club, etc.) regarding the recreational use of the Manawatu River;
- Find out a way to include the aspect of river recreation and development as one area of interest/priorities in the management of the Manawatu River;
- To contribute a better policy and practice with regard development and management of the river as a place for recreation.

Research Questions:

1. To what extent have the ROS or Landscape Ecology approaches used and implemented by the agencies/authorities concerned, more particularly in the Lower Manawatu River?

2. What agencies or departments have adapted or used any of the two concepts or approaches, especially in recreation planning and management?
3. How have any of the two concepts helped the concerned agencies in better recreation planning and management, especially in river recreation?
4. What are the issues, challenges and experiences relating to recreation demands, provision and management encountered by concerned agencies in applying the concepts, and how were they addressed or managed?

OBJECTIVE THREE:

- To apply the ROS method and Landscape Ecology at the Lower Manawatu River that covers the area between the Manawatu Riverside Walkway and Bridle Tract, from Maxwells Line to Riverside Road to maximise the recreation potential of this river. The focus is on the setting on which river use and/or recreation occurs.
- Develop an assessment criteria for recreational use of the Manawatu River, considering its conservation value to the community and concerns about flooding;
- Discuss the vital role of community participation in river development.
- To study river-area based recreation in relation to, and in context with other outdoor resource based forms of recreation.
- To better identify opportunities for visitor activities.
- To identify key sites for the provision of basic facilities and services, especially for the elderly and the physically challenged.
- To identify the importance of specific river areas to recreation in general and to specific forms of recreation.
- To identify current and possible future trends in outdoor recreation, especially river area-based recreation.

Research Questions:

1. What constitutes a recreation resource and what factors add too, or detract from the quality of the leisure environment?
2. Why do people visit the river? What are their expectations? Are these expectations presently met or satisfied?

3. What are the conditions and/or demands of recreational users with regard recreational activity space and access on the site?
4. What mechanisms can be used or developed to promote beneficial partnerships or collaboration among user groups like iwi, outdoor recreation groups, providers of recreation equipments and the concerned government agencies?
5. What can be the best way to minimise or resolve conflicts in outdoor recreation if there is/are any?
6. How can ROS assist in planning for a more effective selection, allocation and location of recreation areas?

III. Review of Related Literature

This involves the study of various literature regarding New Zealand rivers, particularly the Manawatu River, its history, past and present management with regard to its use, conservation value and importance, and its present policy and practice regarding its management in order to come up with ways and measures in an attempt to incorporate *recreational development* in the present management of New Zealand rivers, particularly the Manawatu River as a case study.

The literature review also focuses on two major areas: the recreation opportunity spectrum method and the landscape ecology. These two concepts will be combined to develop an approach suitable for the analysis of river recreation to attain the aim and objectives of the thesis.

The application of the Recreation Opportunity Spectrum together with the concept of Landscape Ecology will be applied in this study to contribute to better recreation planning and the management of recreation resources. Booth and Gurden (1995) say that a range of research approaches may be utilised to achieve the research objectives. Bell (1995) says no single best method exists but combining qualitative and quantitative research is useful. It is hoped that the use of ROS and Landscape Ecology will result to an increased attention being given to monitoring baseline data on recreational use and patterns, as well as the recreational resource base leading to better policies and practices in recreational management.

ROS will also facilitate the analysis of the perceptions, motivations and behaviours of recreationists and users of the river, as well as barriers and constraints to leisure.

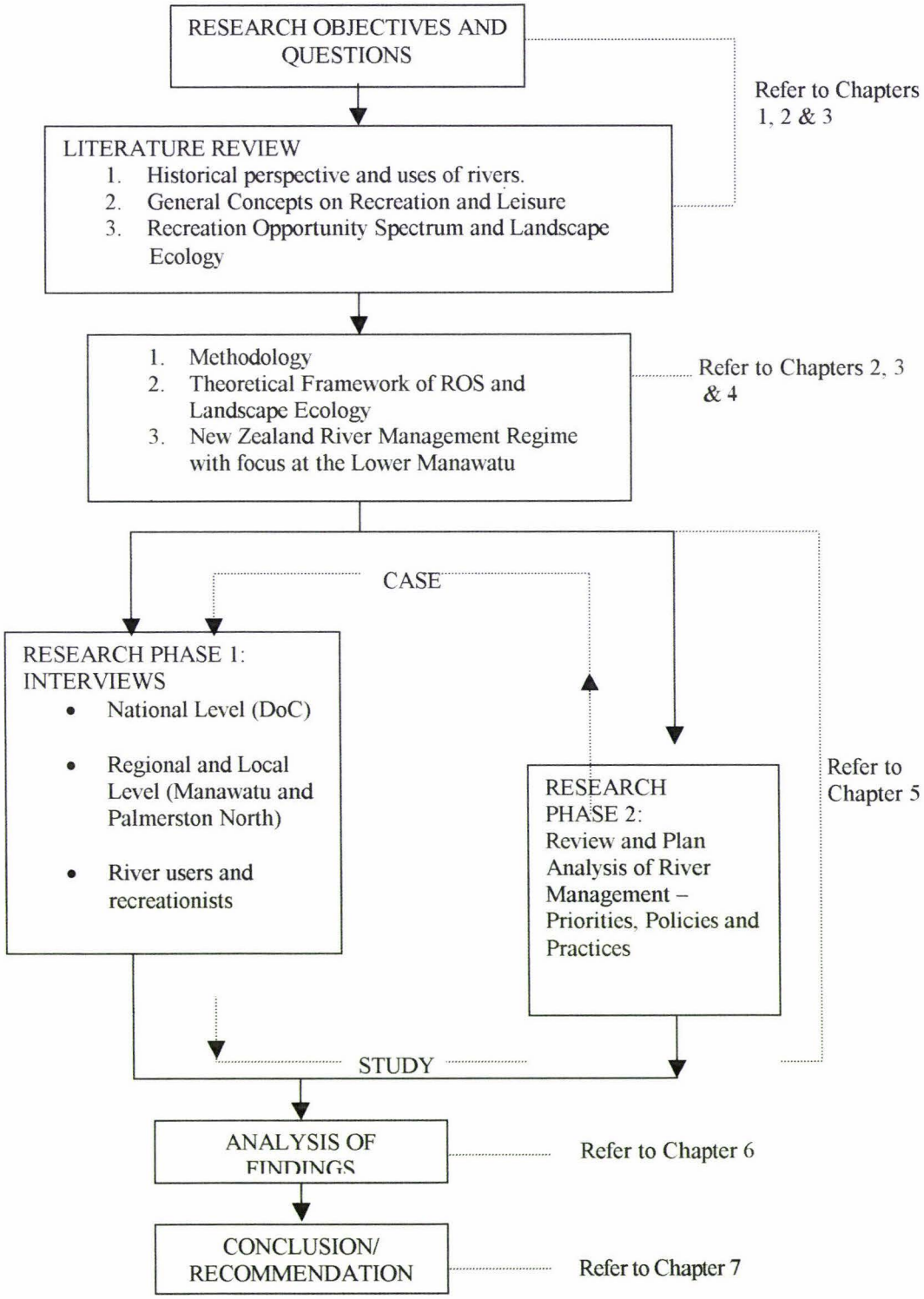
Research on recreation non-participation and constraints to leisure is growing (e.g. Kennedy, Smith and Austin, 1991; Crawford, Jackson and Godbey, 1991); Buchanan and Raymore, 1995). Such research makes theoretical contributions to the understanding of leisure choice and behaviour, and makes practical contributions by providing information which will generate or affect service delivery by way of policy-making, planning, programming and marketing (Jackson, 1990).

IV. Research Methodology

Figure 2.1 illustrates the framework for research design and methodology to be used in this thesis. Research methods have been chosen for their suitability in achieving the thesis research objectives. The research study will be of exploratory nature. It first sets out to study and understand the concepts of leisure and recreation and its development in New Zealand. Second, a review of literature pertaining to the Recreation Opportunity Spectrum and Landscape Ecology follows. ROS is considered as one of the best tools currently available for the integrated management of outdoor opportunities, while Landscape Ecology is useful in simulating natural conditions in and along the river environment so as to create an integrated and harmonious ecosystem beneficial to recreational pursuits like bird-watching, angling or fishing, aside from enhancing the aesthetic or amenity value of the river. Books and journal articles will be the main sources of information. It will also study, assess, review various statutes, regional and city/district plans and policy statements in recreation planning, and conduct interviews with various stakeholders (e.g. city/regional council staff, outdoor recreation providers, formal and informal outdoor recreation groups, individual river users, etc.) to find out the different perceptions and priorities they have about the river, its conservation and management in the New Zealand context.

Jubenville and Twight (1993) states that eighty-seven percent of our perception is based on sight. If we are to enjoy the aesthetic beauty of the environment, we must protect these important visual elements. This is where the application of the principle of landscape ecology will be useful. Where possible, we can also manipulate viewing distance, lighting, and vertical position, so that the observer's enjoyment of the landscape is enhanced. Until relatively recently, landscape has been largely ignored as part of the recreation environment. However, growing concern for environmental quality has led to the recognition of the scenic quality of landscape as a major recreational resource in its own right, rather than merely as the visual backdrop for other recreation pursuits. This, in turn, generated interest in systematic attempts to

Figure 2.1 Research Design and Methodology



evaluate scenic beauty, and to examine the features of landscapes that contribute to their attractiveness and to their resource value in outdoor recreation (Robinson *et al.*, 1976). Unfortunately, most people participate in recreational activities on typical,

regional landscapes. If we agreed with the planners' interpretation, recreation managers would be remiss in their jobs since very few superlative landscapes exist, as in the case of the Lower Manawatu River and we are already protecting many of those. At the same time we are rapidly losing the typical landscape to incompatible and often destructive changes. The authors (Robinson *et al.*, 1976) do not imply, however, for all present land uses to cease. But this, according to them, in turn lowers its quality and desirability as a place for recreational activities. To protect the treasured beauty of surrounding landscapes, these authors recommend altering many existing land use practices. In some instances, this may mean renovating the landscape to produce an acceptable visual environment. The use of landscape ecology approach for this study will aid in directing attention towards evaluation of the potential of the resource base (i.e. Manawatu River), particularly the landscapes of the river environment to support a specific recreation activity or experience at a specific site. For certain activities, conditions are necessarily more specific and closely defined than others, which are more flexible. Physical and natural circumstances will be most important for some forms of recreation, whereas for others, social factors may need to be taken into account, and created facilities and infrastructure may be mandatory for effective functioning of the recreation resource base ((Pigram and Jenkins, 1999). We shall, therefore, be also adapting in this type of approach the idea of visual resource management. It refers to the way in which the visual qualities of a landscape are handled to produce the maximum aesthetic response. This is achieved by first understanding what people are responding to in the landscape, and then mitigating the impact of man's activities on those elements. This facilitates analysis of the suitability of the Manawatu River to provide recreation opportunities and provide new information on the kind of intervention that may be deemed most appropriate for better management.

SITE EVALUATION

Assessing the attractiveness of a site for recreation is a two-stage process of identification (of the attractive features) and evaluation. The identification process is normally structured around a schedule or inventory, itemising all the essential characteristics of the site. Recreational potential is sometimes considered almost synonymous with the capacity of a site to accommodate specific activities, subject to an appropriate level of capital investment. Matching the physical characteristics of the site with specific activities is a routine stage in site evaluation. The resource requirements for most recreation enterprises can be fairly readily expressed, at least in broad terms; indeed, there are standards of provision associated with many recreational activities,

usually related to the population within the catchment area of the site (Seabrook and Miles, 1993)

In this study, the information to be gathered from the interviewees that reflect their thoughts, motivations and perceptions relating to the site's physical attributes and characteristics will be examined and re-evaluated against the sets of inventories previously listed. The use of photographs in this phase will be most useful, especially in making the site evaluation and will aid the researcher during the analysis.

The purpose of site evaluation is to assess the capacity of the site to accommodate one or more recreational uses. This will entail identifying the attributes of the site capable of contributing to its use for recreational purposes and, equally, areas of particular sensitivity, vulnerability, or physical restriction which limit the carrying capacity of the site.

If a site is to be developed for recreational use, a balance must be struck between the ability of the site to accommodate sufficient visitors to make the development worthwhile, yet not so many that the use causes unacceptable deterioration of the site. Although as a general rule, the larger the available budget the more visitors a site can be designed to accommodate, the law of diminishing marginal returns implies that there will be a financial constraint on any development.

There may be a tendency to resort to purely descriptive analysis to build a 'picture' of overall resource potential. The limitations of a pragmatic approach of this nature can, nevertheless, be reduced by adopting a systematic way of presenting the descriptive analysis in a tabular or matrix form, incorporating a scoring system of each resource component, such as a three or five point scale. Undoubtedly, there are many specialists in the various facets of resource evaluation, ranging from the ecologists to the landscape architect. Taking advantage of this expertise can be of great benefit, but the advice is likely to have its price and its cost-effectiveness should always be considered (Seabrooke and Miles,1993).

Taking into account outdoor recreations' impact on the environment (being one of the concerns aired by the concerned authorities), this study will partly dwell in avoiding, minimising or mitigating negative environmental effects. Hammitt and Cole (1987:23) have stated the primary concern of resource managers is undesirable change in

environmental conditions. However, the mere presence of human beings in recreation setting need not be the trigger for degradation.

The empirical research component of this thesis entails the investigation of one illustrative case study – the Lower Manawatu River, its river environment and recreational use. Case studies continue to be used extensively in the social science research – including the traditional disciplines (psychology, sociology, political science, anthropology, history and economics), as well as practice-oriented fields such as urban planning, public administration, public policy, management science, social work and education (Yin, 1994).

Yin (1994) further states this method is a frequent mode of thesis and dissertation research in all of these disciplines and fields. Bouma (1993) also implies that the case study method is one of several strategies that can be used to collect empirical evidence in the social science domain; in fact, the case study is the building block of research design.

Yin (1994) identifies three conditions where this type of method is the preferred strategy for research design. These are: a) the type of research question; b) the control an investigator has over actual behavioural events, and; c) the focus on contemporary as opposed to historical phenomena. In general, case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context.

The research aims in this thesis fits the three criterions above. The first criterion seeks to demonstrate how the ROS and ecological planning approaches can be applied to integrate recreation and leisure issues into management of the Lower Manawatu River. The second one clearly demonstrates that the researcher has no control whatsoever over the target persons or organizations to be interviewed, the river environment, weather and climate. Thirdly, the focus of this research is on contemporary events with some real-life context.

LITERATURE REVIEW

The literature review focuses on three major areas of the study: key concepts of leisure and recreation, historical aspect of the Lower Manawatu river, its development as a

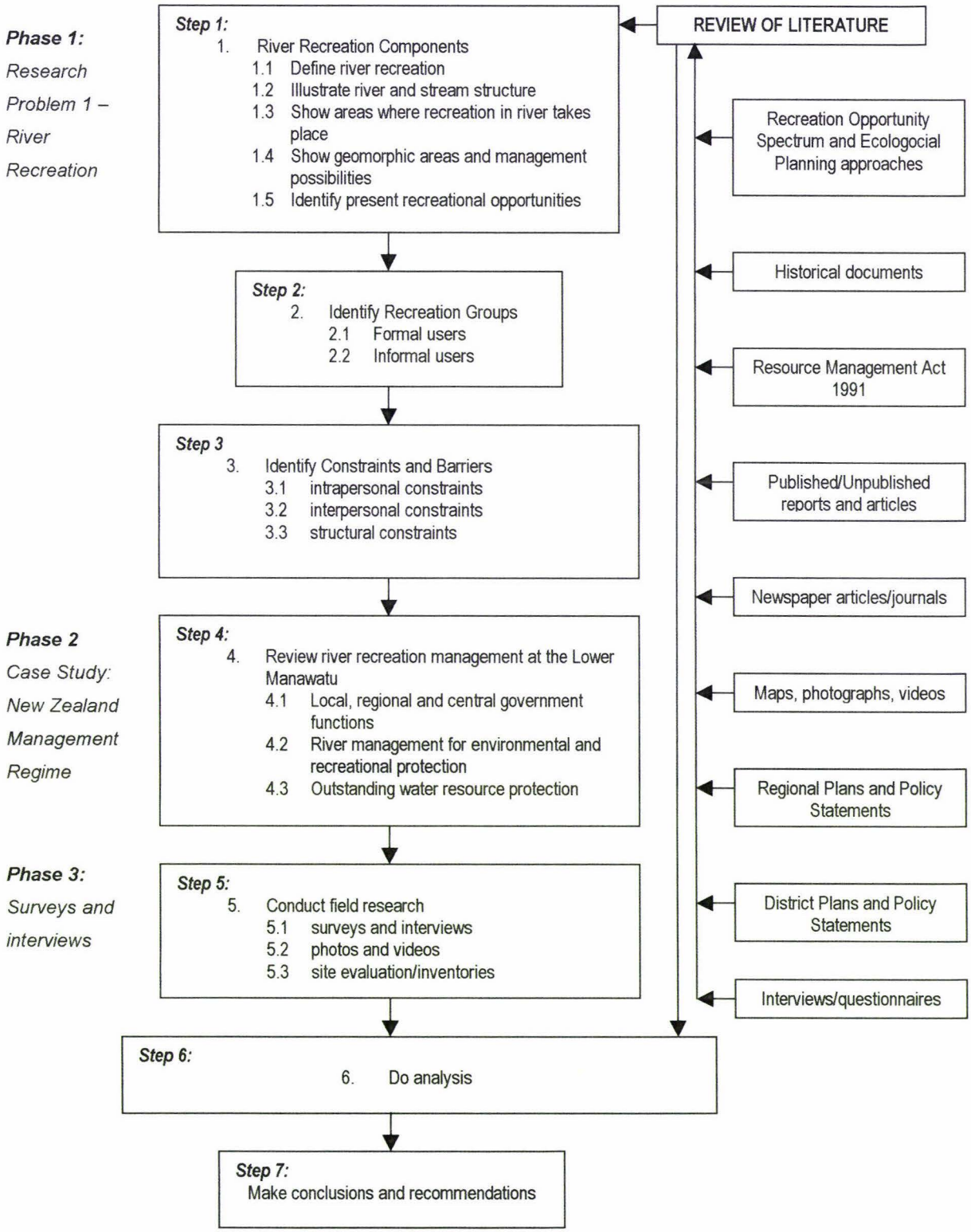
place for conservation and recreation, and theoretical concepts about the Recreation Opportunity Spectrum and the Landscape Ecology. The conceptual framework is presented in Figure 2.2 which shows the three phases from which the research is to be conducted.

The main sources of information for the first phase of the research are books, journals, historical documents about the river previously published by government departments and agencies, the Resource Management Act 1991, published and unpublished articles, previous and current recreational surveys of various government agencies and recreation organizations and associations, and newspaper articles.

Phase two and three of the research study entails the review and analysis of policy documents and various legislations pertaining to river management and recreation at the Lower Manawatu River. The dominant source for this review are the regional and district plans and policy statements of the Manawatu-Wanganui Region. This will be followed by interviews with appropriate central, regional and local authorities.

All interviews are to be undertaken as qualitative semi-structured interviews and a set of questions have been prepared for this purpose (Appendix One). This form allows for a free exchange of information following a prescribed interview guideline around the topic of focus. The interviews are to be conducted at the workplaces of government departments/agencies.

Figure 2.2 The Conceptual Framework



At the central government level, appropriate authorities from the Department of Conservation and the Ministry for the Environment being the key players in looking after the environment in New Zealand, will be interviewed. The Department of Conservation is a key player in the management of New Zealand's extensive natural areas for visitor use (primarily recreation and education); is charged with protecting nearly 30% of the country for conservation purposes, and; provides a range of facilities and services to visitors, as well as provides information and interprets places for visitors.

In addition, the Department of Conservation and the Minister of Conservation have a particular role under the RMA to keep an eye on the way the coastal environment is managed. The Ministry for the Environment on the other hand, gives advice to the government on environmental issues and helps the Minister for the Environment keep an eye on the way councils do their jobs under the RMA. The Parliamentary Commissioner for the Environment is another agency that will be looked into that has an overview role of the way the environment is managed in New Zealand.

This is to assess the present river management and practice of the concerned departments, agencies, and authorities (i.e. specific plans and programmes for the last year and the next 2-5 years, staff employed for reserve management and protection, promotion of community recreation activities, especially water-based recreation, etc.)

At the local level, a series of interviews will be scheduled with Palmerston North City's planning officers, policy analysts and recreation advisers, while at the regional level policy analysts, river engineers and the head of the River Users' Committee will be interviewed to gather additional information regarding plans about the recreational use of the river. The survey-questionnaires (Appendix Two), combined with short interviews, will be distributed to river users/recreationists or formally-organised outdoor recreation groups and randomly-selected city residents will comprise the last phase of the research study.

Warwick and Lininger (1975) believe that the foundation of a good sample survey is the sample. A *sample* is some part of a larger body specially selected to represent the whole. For a sample to be useful, it should reflect the similarities and differences found in the total group. In designing a sample survey, it is best to assume that people are different from one another in attitudes and behaviour, even if the extent of differences is unknown and an object of study. The respondent-residents will be selected through the

"use of chance" procedures, since the authors argued that this is the most reliable way to assure a representative sample, also referred to as probability sampling. Another important point is that a sample is never adequate or inadequate in itself. It must always be judged by its usefulness for a given purpose. Sometimes it makes little difference which part of the whole is selected for the sample.

Sample selection is a highly technical task and one that should be guided by a professional statistician (Rossi and Freeman, 1993), however, due to time and financial constraints during the duration of this study, the use of a statistician will not be engaged.

A qualitative research approach will also be adopted for this study targeting formal (e.g. organized river recreation groups and outdoor sports organization and informal river users (walkers, joggers, bikers) which have been previously identified and selected for their having knowledge and experience needed for the study. Miles and Huberman (1994) remarked that these target groups -

- usually works with a small sample of people;
- nested in their context, and;
- studied in depth

This kind of approach may also be referred to as purposive sampling which draws sampling according to a specific purpose. These purposes could be according to the specific characteristics of people, recreational pursuits, park and recreation facilities, and even time periods. One use for purposive sampling is to include in the study people, activities or facilities that represents a wide and diverse range on a particular characteristics. Our series of interviews are based on this concept.

A sample survey of 100 residents each living along the river and those in the city centre respectively, will be conducted. River users will also be observed and monitored during weekends (Saturday and Sunday from July to September) to investigate the number of users and the frequency of visits to the river at specified time: morning (7am-10am); afternoon (4-5:30pm), and; evening (6-7:30pm). All research methods to be adopted will use a questionnaire style of approach. Common and differing activities, positive and negative values of the site and general user comments are expected to be drawn from the questionnaire.

These information will further strengthen the reasons on the range of influences and recreation choice of individuals and groups. Thus, it is important to involve in the research-survey a wide spectrum of river users. It would be interesting to find out how Palmerston North city residents perceive the river as a place for recreation and leisure, the various times they choose to use it, and the accessibility issues that may brought up during the conduct of the interview and survey-questionnaires.

The last phase aims to assess the perception and values of various stakeholders with regard the river, its environment and its importance as a place for recreation, how often they use the river, the type or types of activities they do with themselves or with other people, at what time or day, public *awareness* of river recreation areas, etc. Roehl (1987) says that in reality, individuals typically consider only a subset of available alternatives. For example, in any choice situation, an individual's decision will be influenced by his/her awareness set. Pigram and Jenkins (1999) further stated that information levels, as well as the ability to use that information also help structure evaluative beliefs and mental images concerning the nature and quality of anticipated recreation experiences. This relates with assessing and examining the features of landscapes which contribute to their attractiveness and to their resource value in outdoor recreation.

Pigram and Jenkins (1999) state that difficulties remain with assessment procedures because of the intangible and multi-faceted nature of landscape, which does not permit precise measurement. The resource function can take on several dimensions, depending upon which senses are being satisfied and the characteristics of the population involved. These difficulties are compounded by the assessment of recreational values. Whereas most landscapes probably have some recreation potential, this fact is not easy to establish with any agreement, because of the personal nature of recreation and the subjective manner in which it is experienced. A basic example is presented and summarised in Box 2.1 in which people experience environments. These authors add that generalisations and interpersonal comparisons are of doubtful validity, and the multiple characteristics of landscape make dissection and evaluation a risky undertaking. Thus, it is important to gather users' past and present experiences and perceptions for this research. The use of questionnaires and the conduct of chance interviews of actual river users will be employed.

For the purpose of this study, it is useful to distinguish between landscape *character* and landscape *quality*. Analysis of landscape character is essentially descriptive and

concerned with the attributes or components of landscape which constitute it as a visual entity – landform, water, vegetation, buildings and the like.

BOX 2.1 The factors that influence how people understand and experience environments

1. The senses: people's first contact with the environment is through the senses:
   - sight
   - hearing
   - smell
   - touch
   - taste

2. Needs: people have basic needs which lead to an instinctive reaction to the information received through the senses:
   - survival (physiological needs – food + water + shelter)
   - security (physical and psychological needs)
   - belonging (to a group and a place)
   - expression of individual identity (the need for the self to be worthwile)
   - experience a sense of self-fulfIment (the achievement of aspirations)

3. Desires: to fulfil these basic needs people have a built-in desire to acquire knowledge about their environment; they are driven to do this by the need to experience satisfaction: knowledge (to understand present and to be able to predict future occurrences)
4. Aesthetics: people's knowledge as well as social and cultural conditioning, and their past experiences result in their developing sensibilities: what is seen, heard, smelt, touched and tasted is filtered by past learning and experiences and judged qualitatively by the individual.

Source: Kaplan (1973)

In contrast to landscape character, landscape quality is essentially a comparative, evaluative concept, subsequent to determination of landscape characteristics. Unwin (1975) presents a three-phase process of landscape quality:

- *Landscape Description* – relatively objective inventory of landscape elements or characteristics, and classification of landscape types, without any scoring, ranking or reference to quality;

- *Landscape Preference* – establishment of visual preference ratings or indices for landscape characteristic types, based on personal value judgements or the opinions of panels of experts or representative populations;

- *Landscape Evaluation* – assessment of the quality of the particular landscapes under study in terms of the values or preferences expressed.

This research study will adopt the three process presented by Unwin (1975) to be incorporated in the questionnaires to gather user perceptions and values of the river as a place for recreation, though in simpler terms to make it more respondent-friendly and for easier evaluation.

It should be noted that all responses to environment are mediated by language, that is the way people communicate which others from their local culture and form other 'cultures'. Symbolic meanings and values have been shown by Burgess, Harrison and Limb (1988) to be important in understanding how people relate to, and use, settings (Beer, 1990). Kaplan (1973) developed a model of how people experience and make sense of the built environment. He showed the importance of being able to gather information about the environment and suggested a person's cognitive map included four domains as indicated in Box 2.2.

BOX 2.2 The domains of an individual's cognitive map

1. recognition:
   knowing where you are
2. prediction:
   knowing what happens next
3. evaluation:
   knowing whether what happens next is good or bad
4. action:
   knowing what to do

Source: Kaplan (1973)

Seabrooke and Miles, (1993) further stressed that too often, recreation resource development follows a route that allows business people who will gain most directly from the development persuade local officials or representatives (some of whom may have business connections that would gain from the development) to support the development. The development is vigorously pursued. Few questions are asked about a variety of costly social and environmental consequences. This only serves to confuse the merits of the development. Such costly side effects can be minimised with adequate planning. It is important to identify, in advance, all the stakeholder groups affected by the development, how they will be affected, and how to plan to minimise the

adverse consequences of the development to the stakeholders. It may not be immediately obvious who the stakeholders really are.

This will be combined with a winter on-site survey and spring-summer on-site surveys intended to assess the actual use of the river in relation to climatic conditions and situations and present how these affect recreation. Jubenville and Twight (1993) states that season of use are important because the contrasts that accent landscape vary considerably through weather changes. In the summer when leaves are fully developed, landscape may offer little variety because the heavy texture of the trees predominates. The colours of newly emerging leaves in the spring or frost-coloured leaves in the fall my break up the monotony of a landscape; they can also decrease the visual impact of a development and cause the line, colour, form and texture of man-made structures to blend in more naturally with the surrounding area.

The photo-shoot will be completed in two phases, parallel to the surveys. Pigram and Jenkins (1999) consider that attributes of the biophysical environment differ from place to place. Geological and edaphic conditions vary, as do terrain, hydrology, fauna and flora. The biophysical characteristics of the natural environment can also be materially ephemeral or transitory aberrations in *weather* and *seasonal* conditions. The simplest illustration of this is the difference in effect on a recreation setting of the same type and volume of recreational activity in summer and winter. The ability of the site to recover over time also varies with the season and the weather. The two field surveys should illustrate change in climate affects recreation participation and use of the river environment or landscape, and if there is a link or a differences in perception and experience of river users during a particular season.

THESIS OUTLINE

This thesis is divided into six main chapters. Chapter One begins by presenting a historical perspective and uses of rivers, its importance as a recreational resource base, and makes a brief discussion of the case study, the Lower Manawatu River, and the two approaches chosen to be used in the research study. A short introduction is presented regarding leisure and recreation in New Zealand, the opportunities and constraints faced by outdoor recreationists in using a resource base, as well as the management issues and challenges that recreation providers and resource managers have and deal with in order to provide quality environment for sustained and satisfying recreational use.

Chapter Two introduces the methodology to meet the objectives of this study. It will show why combining Landscape Ecology with ROS contributes for a more appropriate and effective management regime in recreation planning, design and management for consensual decision-making about the use of landscape, respectively, as that in the Manawatu River.

Chapter Three establishes the theoretical frameworks of the Recreation Opportunity Spectrum (ROS) and Landscape Ecology, their definitions and ideas. It then outlines the benefits and applicability of both the ROS and Landscape Ecology as allocation and planning tools in encouraging and providing diversity in outdoor recreation. It also presents the most important 'opportunity factors' and the significance of considering these specific setting attributes of ROS that can be useful in designing and conducting inventories of recreation opportunities, and help define specific management objectives for each setting.

Chapters Four introduces the case study used in this thesis and analyses the present river management regime, its policies, priorities and practices that affects recreation provision and then investigates the applicability of the Recreation Opportunity Spectrum and Landscape Ecology in developing an approach for integrating recreation and leisure issues into the management of the Lower Manawatu River.

Chapter Five presents the results of the interviews with local authorities concerned and river users, as well as the information gathered through the survey questionnaires. This aids in doing the analysis and discussion for the next chapter.

Chapter Six contains the analysis and discussion, and provides the answers to the central questions of this thesis. This chapter synthesises the research findings by drawing together Chapters Two, Three, Four and Five and discusses the feasibility of applying the theories presented in managing the Lower Manawatu River given its recreational potentials as a natural resource.

Chapter Seven concludes the thesis by revisiting the aims and objectives of the research study, and discusses the usefulness of the ROS and Landscape Ecology in planning and designing for leisure and recreation. It presents recommendations to the agencies involved in managing the Manawatu River.

CHAPTER THREE

THE RECREATIONAL OPPORTUNITY SPECTRUM AND THE CONCEPT OF LANDSCAPE ECOLOGY

THE RECREATION OPPORTUNITY SPECTRUM AND LANDSCAPE ECOLOGY

For this study, the concept of Recreation Opportunity Spectrum (ROS) and Landscape Ecology approaches will be applied. ROS is a conceptual framework for encouraging diversity in outdoor recreation opportunities. ROS is one of the best tools currently available for the integrated management of outdoor opportunities. It integrates many of the elements of outdoor recreation in a comprehensive manner. It does not answer all the questions or provide solutions but it does provide logical and consistent framework for recreation decision-making (Department of Conservation, 1993). This research study will investigate if this concept has been used and applied by recreation providers, in particular by the Palmerston North City Council and the Manawatu-Wanganui Regional Council, and how this concept has helped them meet the recreation needs of the city and of visitors coming from neighbouring districts and regions. Later in this chapter, the concept of Landscape Ecology will be discussed in full but as the chapter goes on it will relate its importance in relation with the ROS in providing a quality environment not only for leisure and recreation purposes, but also towards the preservation and protection of natural waterways like the river.

THE RECREATION OPPORTUNITY SPECTRUM CONCEPT (ROS) AND ITS APPLICATION IN NEW ZEALAND

The recreation management approach used by the USDA Forest Service is called the "Recreation Opportunity Spectrum" (ROS). The ROS provides a framework for stratifying and defining classes of outdoor recreation environments. It can be applied to all lands regardless of ownership or jurisdiction (USDA Forest Service, 1982). This is important in New Zealand where over 30 percent of parks and reserves is in public ownership that has conservation as its first priority. What is more, the ROS framework systematically and explicitly recognises and organises accessibility as a primary

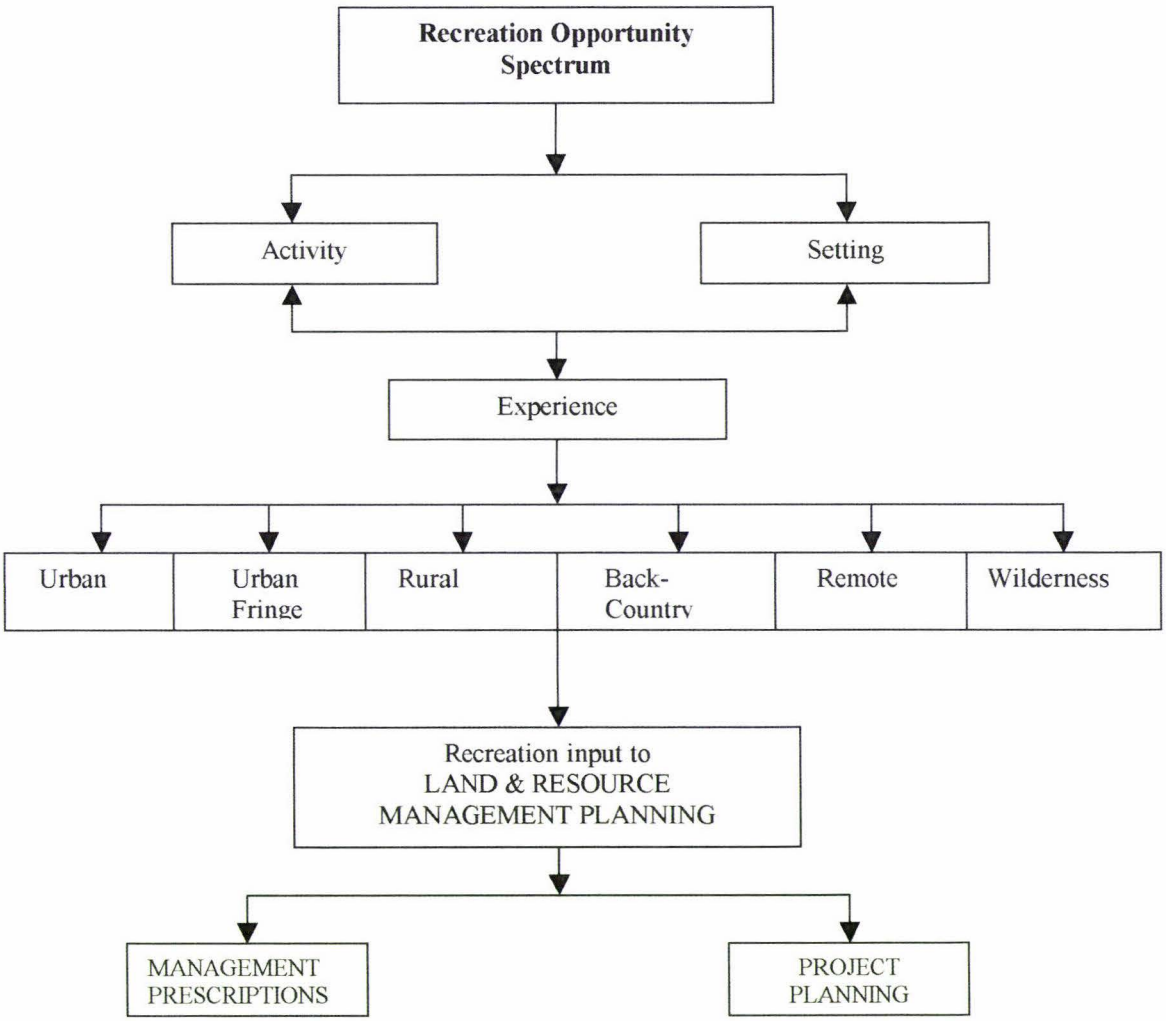
recreation expectation of all people, irrespective of ability, which is one of the major interests of this study.

The concept of ROS was seen as applicable to New Zealand but the major land management agencies, the Department of Lands and Survey and the New Zealand Forest Service did not apply it until 1986 when the first full ROS survey was undertaken. In New Zealand, the ROS framework is based on a continuum of possible combinations of recreation settings, activities, and experiential opportunities, as well as the resulting benefits that can be accrue to the individual (by improving physical and mental well-being) and society (Driver and Brown, 1978). The primary structure of ROS is based on the continuum of possible recreation settings. The Forest Service, in conjunction with the Wellington Regional Council surveyed the greater Wellington area as far north as the Manawatu gorge. That study has since been used in regional recreation planning issues. In 1987, when the Department of Conservation was established, ROS began to be implemented widely. Later that year, the Department decided to develop one ROS classification system and invited interested organizations to help define a New Zealand spectrum. To define and establish its own responsibilities in the wider context, the Department would map the ROS across all land regardless of tenure according to the one set of criteria. A group familiar with the ROS concept was set up, assisted by the Hillary Commission, with representation from FMC, the Hillary Commission, Lincoln University, Wellington Regional Council and the Department of Conservation (Department of Conservation, 1993). Figure 3.1 illustrates a flow chart that outlines the major components of the Recreation Opportunity Spectrum and how it relates to land and resource management, as well as project planning.

Manning (1986) affirms that ROS can be used in several ways, perhaps more importantly as an allocation and planning tool. Taking into account demands for recreation opportunities and their relative abundance, ROS can help guide allocation decisions so that each recreation area contributes to the diversity desirable in a complete system of recreation opportunities. While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager is one of providing the opportunities for obtaining these experiences. By managing the natural resource setting, the activities that occur within it, the manager is providing the opportunities for recreation experience to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting and the experience.

The following flow chart outlines the major components of the Recreation Opportunity Spectrum and how it relates to land and resource as well as project planning (Figure 3.1)

Figure 3.1 Major Components of the Recreation Opportunity Spectrum



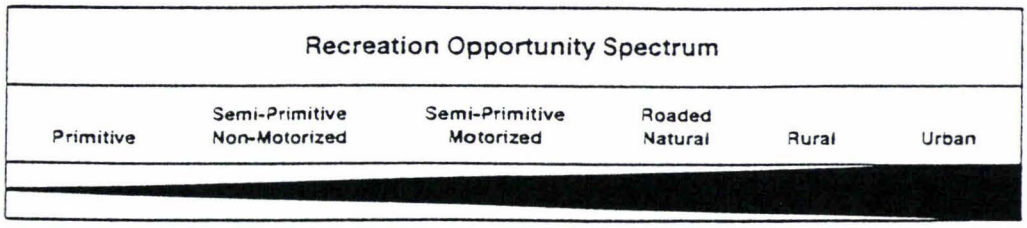
The experiences are sought and gained by the individuals and by groups of people. These experiences benefit society through mental and physical well-being of the individual, family and community and through environmental appreciation, care and responsibility.

(Adapted from The New Zealand Recreation Opportunity Spectrum, Department of Conservation (1993) and Mitmann, 1993).

For management and conceptual convenience, possible mixes of combinations of activities, settings and probable experience opportunities have been arranged along a

spectrum or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes (Figure 3.2). The six classes, or portions along the continuum, and the accompanying class names have been selected and conventionalised because of their descriptiveness and utility in Land and Resource Management Planning and other management applications (Mitmann, 1993).

Figure 3.2 Recreation Opportunity Spectrum



Source: Mitmann (1993:132)

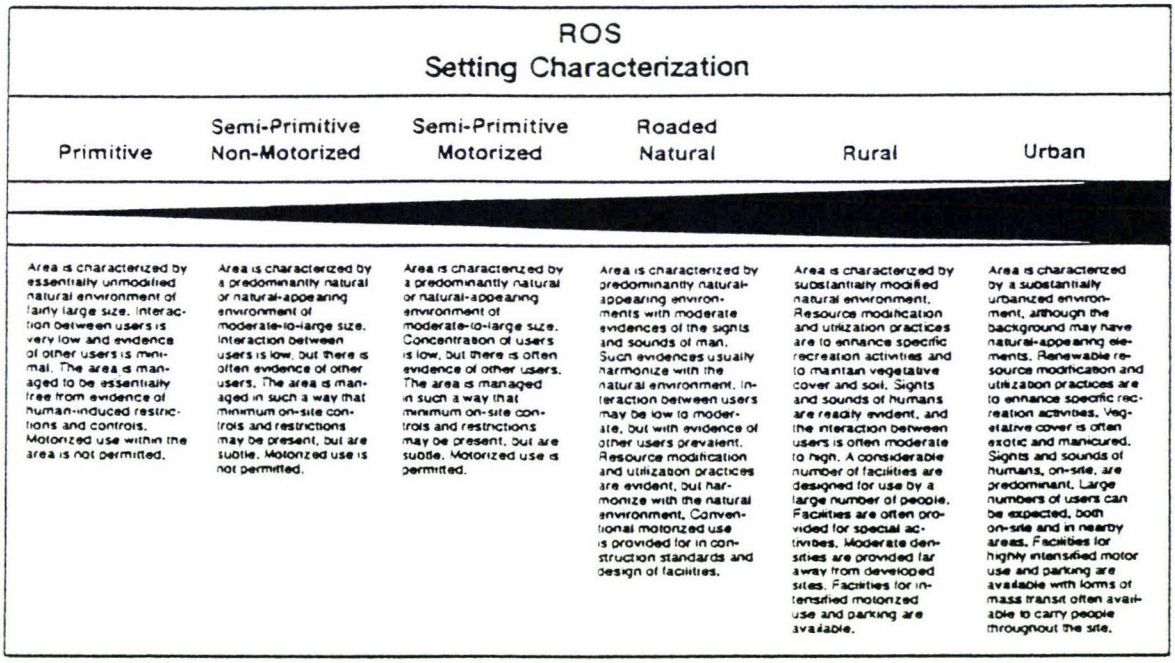
Each class is defined in terms of combination of activity, setting, and experience opportunities. Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be a further breakdown of Roaded Natural into subclasses based on paved, oiled, or dirt surfaced roads, which in turn reflects amount of use, or a further breakdown of Primitive based upon aircraft or boat use (Mitmann, 1993). Figure 3.3 summarises the different setting criteria for the six recreation classes.

Mitmann (1993) further states that in addition to the settings, the different recreation activities which people want to engage in should be considered for the entire recreation opportunity spectrum to assure consistency with the setting requirements. The activities in Figure 3.4 are shown within the spectrum of recreation opportunities for illustrative purposes. Mittmann (1993) says that additional and different types of activities must be considered for specific locations and new one must be added as they evolve.

The specific setting attributes of ROS can be useful in designing and conducting inventories of recreation opportunities. Combining the concept of landscape ecology

with ROS will not only contribute to better recreation planning and provision of recreational opportunities, but will assist in creating or providing the appropriate environment for recreation. ROS provides an explicit framework within which consequences of alternative management actions can be evaluated, considering the given conditions or situation of a resource base. And finally, ROS provides a means of matching desired visitor experiences with available opportunities. ROS provides relatively specific descriptions of available recreation opportunities so that visitors can more readily identify those opportunities likely to meet their desired experiences (Manning, 1986).

Figure 3.3 Setting criteria for the six recreation opportunity classes



Source: Mitmann (1993:132)

By combining the setting characteristics and the type of activities people want to engage in, it is possible to predict what kind of experiences they will have within the spectrum of recreation opportunities. Figure 3.5 indicates the kind of recreation experience people can expect in the different recreation opportunity classes.

Figure 3.4 Activities within the spectrum of recreation opportunities

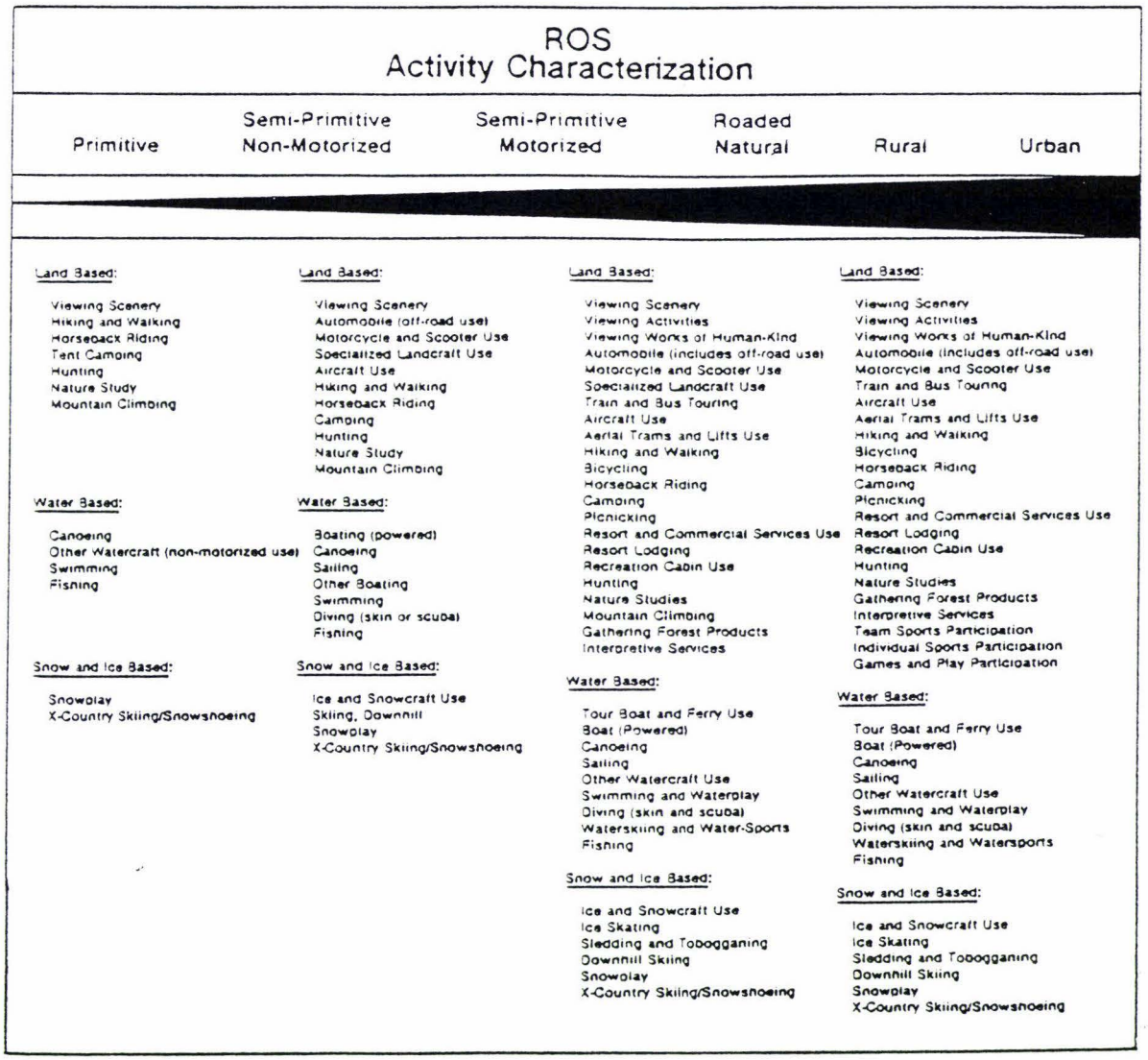
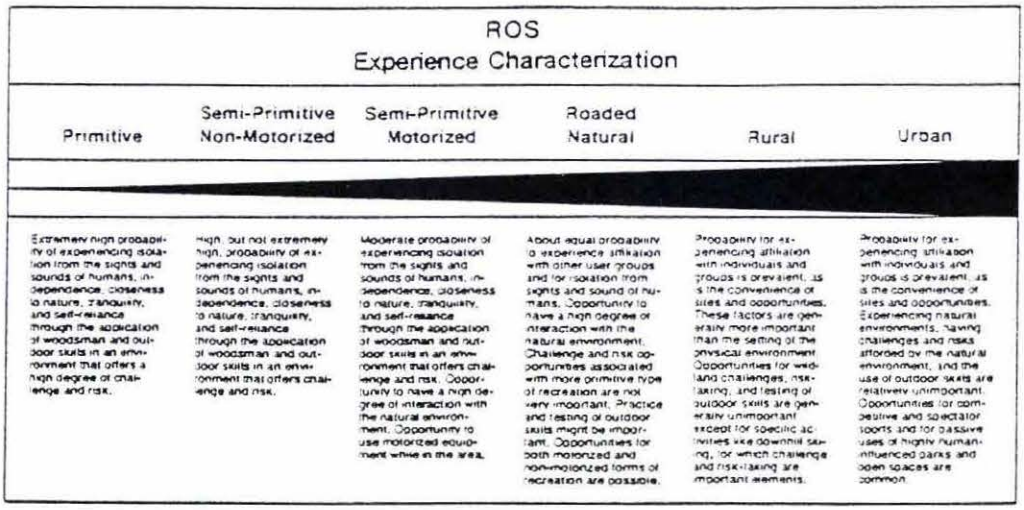


Figure 3.5 Recreation experiences in the R.O.Classes



Source: Mitmann (1993:132)

Recreation Opportunity Spectrum defined

A recreation opportunity spectrum has been defined by Stankey and Brown (1981) as:

'a chance for a person to engage in a specific recreational activity within a specific environmental setting to realise a predictable recreation experience'.

The Department of Conservation (1993), on the other hand gives the following definition:

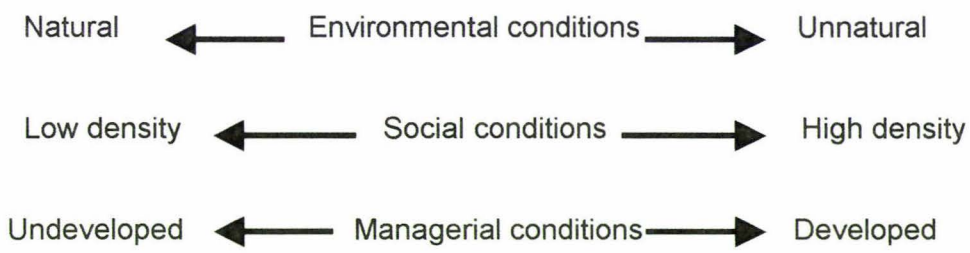
'the availability of a real choice for a user to participate in a preferred activity within a preferred setting in order to achieve a satisfying experience.'

The definition is based on the fundamental premise that people engage in various types and styles of activities in different setting to obtain a variety of experiences, satisfactions and ultimately benefits. It was developed simultaneously by two groups of researchers: Clark and Stankey (1979a) and Brown, Driver, and associates (Brown et al. 1978; Driver and Brown, 1978; Brown et al., 1979). Manning (1986) defines ROS as a conceptual framework for encouraging diversity in outdoor recreation opportunities. It explicitly recognises that experiences derived from recreation are related to the settings (refer to Figure 3.3) in which they occur, and that settings are a functions of environmental, social and managerial factors. In ROS the implicit relationship between these factors is linear as shown in Figure 3.6.

Manning (1986) believes that as environmental conditions change from natural to unnatural, social and managerial conditions change in a corresponding manner. As a result, only certain combinations of factors appear possible. The linear relationships suggested in ROS are intuitively meaningful in many or most cases but theoretically, at least there is no reason that natural environments cannot, or should not, support relatively high-density use under highly developed conditions.

Inventorying the present recreation opportunity supply involves examining existing physical, social and managerial settings. The existing supply might differ significantly from what is potentially available (the capability analysis) due to social and/or managerial factors (Stankey and Wood, 1982). Clark and Stankey (1979a) are most specific in defining these factors and the resulting recreation opportunity types, and suggest the management factors (Figure 3.7) be used to define recreation opportunity settings.

Figure 3.6 Linear relationship between environmental, social and managerial conditions as suggested by ROS.

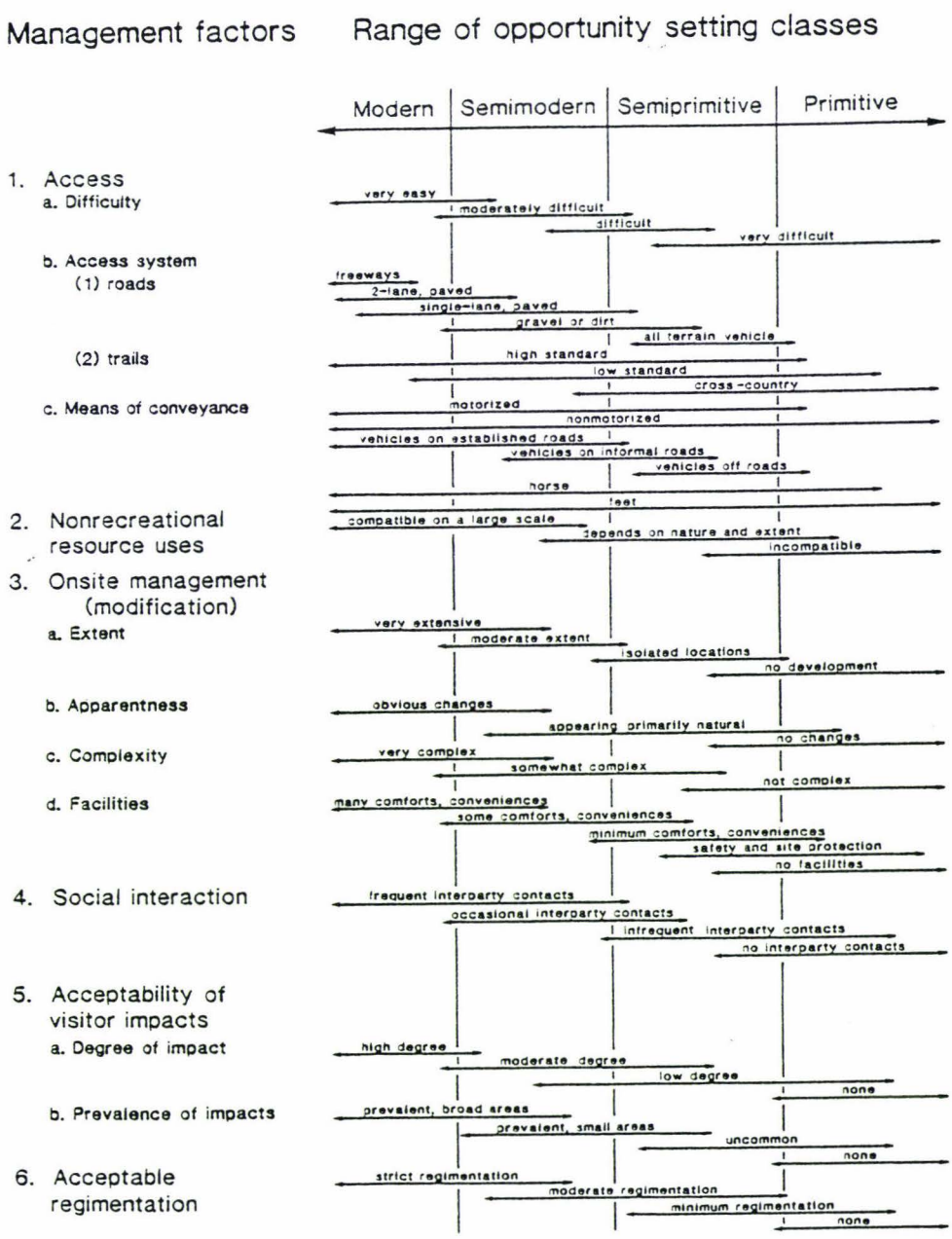


Source: Manning, 1986.

The range of opportunity factors to which an opportunity factor can be subjected, and the way each can be managed to achieve desired objectives are shown in Figure 3.7. by packaging a recreation opportunity setting in some combination of the six factors described, a variety of recreation opportunities or options can be generated, and the ROS materially enlarged. In their scenario, the authors present only four generic types, arrayed along a 'modern to primitive opportunity continuum'. However, within each, there is scope for many complex combinations, thus providing even more diversity.

ROS also allows an examination of opportunity settings with respect to the capability of potential users to avail themselves of the opportunities presented. Limited resources, and perhaps, lack of awareness or imagination mean that, generally speaking, the established recreation system caters for the majority, on the premises, apparently, that everyone is young, healthy, ambulant, educated, equal and possesses the means to participate. The reality in fact, is very different (Pigram and Jenkins, 1999).

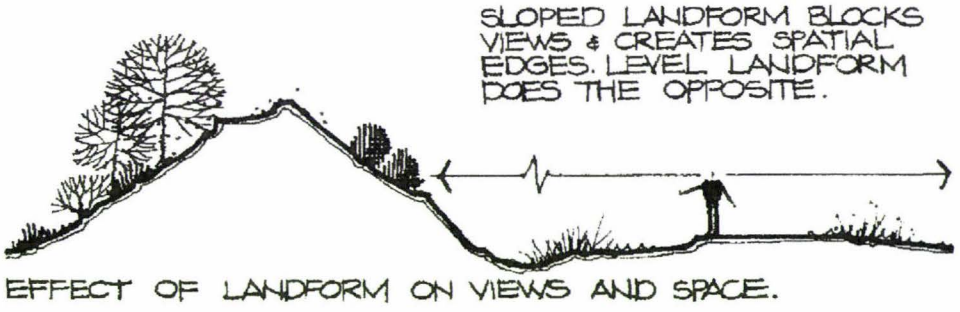
Figure 3.7 Management factors defining recreation opportunity settings
[Source: Adapted from Clark and Stankey (1979:15)]



SETTING CHARACTERISTICS OF A RECREATION OPPORTUNITY

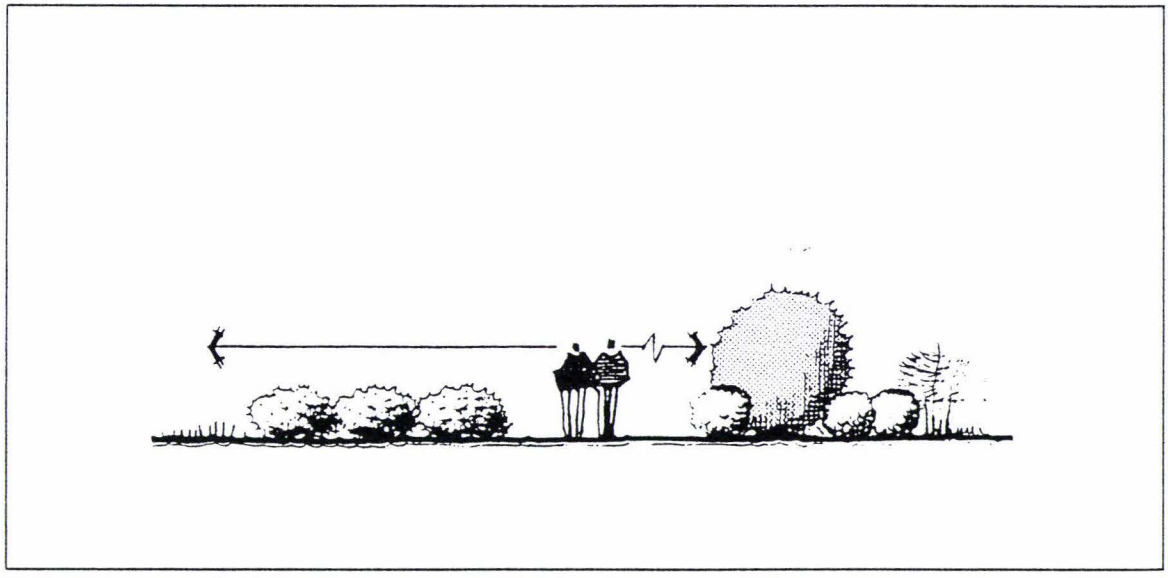
The setting characteristics of a recreation opportunity are the most obvious identifiers. These are the *physical*, *social* and *managerial* characteristics. The *physical characteristic* are a measure of accessibility, size and modification. *Accessibility* is measured in terms of distance, topography, vegetation and difficulty of travel. Distance is the limiting factor for a variety of reasons, such as physical, financial or social. Topography features play an important part in forming visual and physical barriers. A sloped landform, ridge line or a river closes in an opportunity, whereas an open plain extends it (Figure 3.8). Vegetation works in collusion with topography; tall, close vegetation restricts an opportunity (Figure 3.9), while low, open vegetation extends it (Figure 3.10). The influence of human alteration on the landscape will be reduced in flat topography if shielded by vegetation (Booth, 1983).

Figure 3.8 Effect of landform on views and space



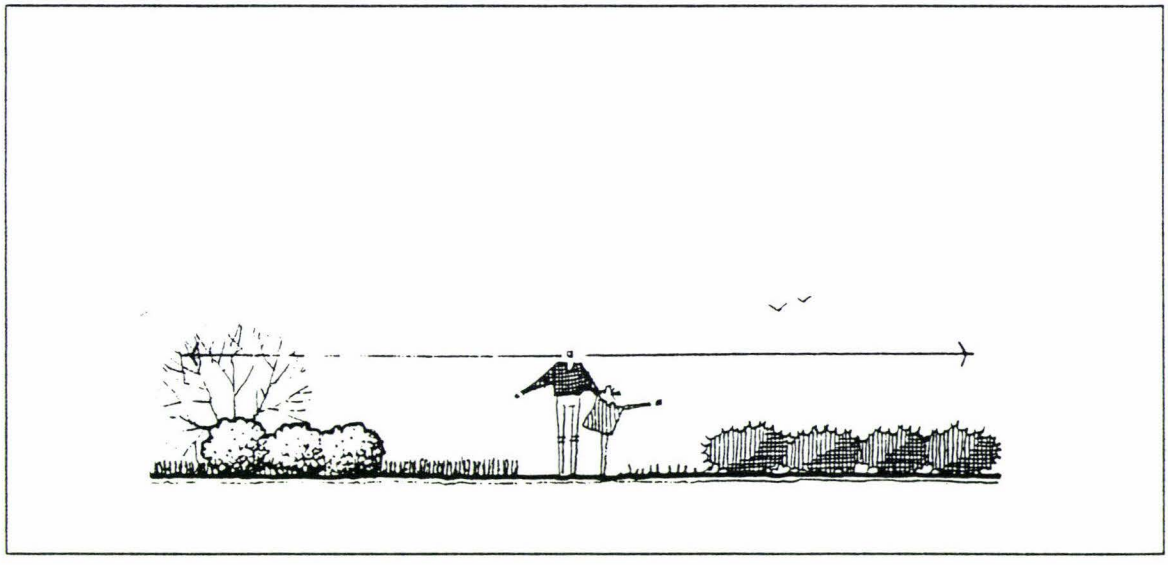
Source: Booth, (1983)

Figure 3.9 Partially open space; orientation to open view



Source: Booth, (1983)

Figure 3.10 Open space created by low shrubs and ground cover

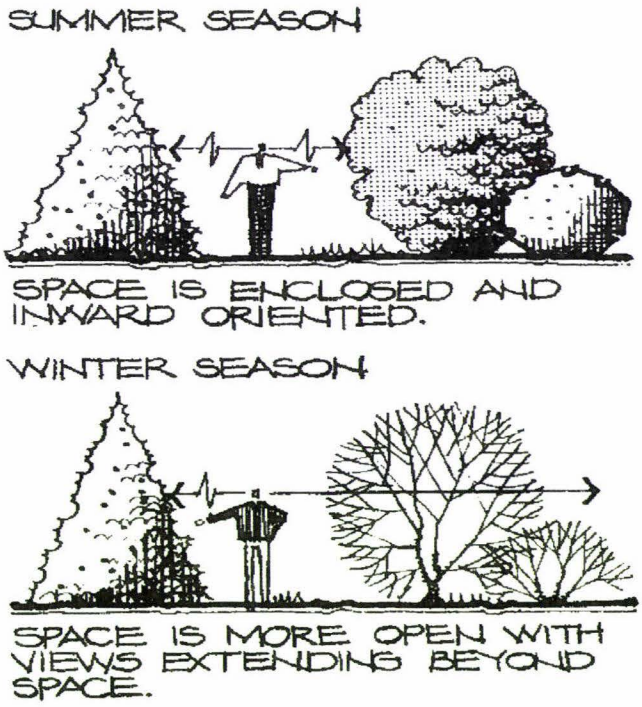


Source: Booth, (1983)

The foliage mass of plants is the second means for influencing the vertical plane of spatial enclosure. The density and height of the foliage mass affects the quality of the space. The taller the plant and the larger and more closely its leaves or needles are spaced, the stronger the feeling of enclosure. One definite change of enclosure is apt to occur with seasonal variation in deciduous foliage. In summer, a space may be completely enveloped with foliage, giving the space an inward feeling of isolation. In winter on the other hand, the same space may by comparison seem larger and more open with views extending some distance beyond the limits of the space itself. Spatial definition in winter is implied by the branches and trunks of the plants (Figure 3.11).

Evergreen plants provide the strongest year-round definition of space in the vertical plane. The mode and difficulty of travel also influences accessibility. Factors such as whether it is possible to drive to the location readily or walk or tramp with a higher commitment of time, skills and other resources will all influence accessibility. *Size* of an opportunity will be significant; it is a combination of area and scale. An area must be of adequate size to be self-sufficient. *Modification* is the evidence of human interaction with the environment and the naturalness of the environment. The size and scale of the human alteration and modification is also a factor. Modification in some areas will be more significant than in others. Modification to the environment is also considered under the managerial setting where facilities and services are defined (Department of Conservation, 1993).

Figure 3.11 Seasonal variation in deciduous foliage



Source: Booth, (1983)

Social setting reflects the amount and type of interaction with other users. These are identified through the numbers or density of users and the conduct of users. High densities will tend to shift the opportunity classification towards the urban end of the spectrum. Conduct or behaviour of users will influence the opportunity. Visit duration increases with a shift towards wilderness opportunities. Tolerance towards other users and uses increases towards the urban end of the spectrum, though the sheer volume of users highlights incompatibilities. The *managerial setting* is the extent to which

management facilitates, restricts, and directs what occurs in an opportunity. Facilities to recreation opportunities are included here though they could be considered in the physical setting. Other managerial characteristics that help define an opportunity are services, level of rules and regimentation and maintenance work. The degree to which rules are present and operate will be more apparent towards the urban end of the spectrum. As a larger number of users and uses compete for smaller areas, regimentation will be more apparent (Department of Conservation, 1993).

In identifying the current situation at the Manawatu River, the information on all or some of the following factors may be useful, and Clark and Stankey (1979) suggest that the most important of these 'opportunity factors' are:

- access – including the type of access to and within the area and the type of travel permitted;
- non-recreational resources – including both the activity and the scale at which it occurs;
- on-site management – including the types of facilities and extent, apparentness and complexity of the modifications;
- social interaction – including the amount and type of inter-party contact;
- acceptability of visitor impacts – including the assessment of the type (both resource and social) and amount; and
- acceptable regimentation – including the nature, extent and level of management control over recreation use.

For this reason, the landscape ecology is chosen to be combined with the ROS method to reinforce objectives set in this study.

Manning (1986) cautions that potential users of ROS should be made explicitly aware of the wide-ranging ways in which environmental, social, and managerial factors can be combined to produce diverse recreation opportunities. This seems in keeping with the intentions of the designers of ROS; publications describing the concept emphasize the need for diversity and caution that the guidelines offered to illustrate ROS, such as those contained in Figure 3.7. By describing the ranges of these factors, ROS together with the landscape planning process will illustrate the potential diversity of recreation opportunities in the Manawatu river and its surrounding areas. It is envisaged that landscape improvement, which is one of the broad objectives of landscape

management, would lead to the identification of visual features along the banks and environs of the Manawatu river which detract from landscape quality, so that such 'eyesores' can be removed or modified.

But Pigram and Jenkins (1999) note that linear recreation resources such as streams and scenic routes frequently call for specialised application of evaluation techniques. These methods seek to identify and measure or rank those physical, cultural and aesthetic attributes of a river and its environment which are considered significant when assessing its recreational value. Typically, the river/stream is divided into manageable segments, for analysis from maps, air, photographs and on-site inspection. An element of subjectivity is inevitable in judgements concerning the features to be assessed, the recreation activities envisaged, and the scoring and weighting procedures adopted. Most of the methods focus on relatively remote river resources, although some attempts have been made to develop and apply criteria for evaluating urban settings for recreational use, close to the centre of the river recreation opportunity spectrum. It is clear that there is still some way to go before development of an effective technique that will allow for the dynamic nature of the river resource and its potential users, and that is capable of being replicated in many different river situations. The Manawatu River and its environment has been assessed before as 'dull' and 'uninspiring'. This researcher observes that too much emphasis has bee given to the physical characteristics of the Manawatu River which results to the authorities concerned overlooking its other attributes as a recreational resource.

As shown in Figure 3.7, opportunities for outdoor recreation experiences can be defined and classified along a continuum, from urban to wilderness. Each of the opportunities along the continuum can be defined in terms of the experiences that the visitor should gain in the particular environmental setting, along with the likely activities that contribute to each opportunity experience. This continuum spans all environments. Land-based opportunities are the most clear; offshore coastal opportunities are less readily definable; aerial opportunities are generally only defined to the extent that they make contact with the land-based opportunity. ROS does, however, provide an ideal surface based planning frame for integrating aerial activity to recreation activity on the ground.

While this continuum can be defined in many ways (Stankey et al., 1977), the ROS continuum is defined primarily in terms of perceivable modifications of the natural environment, e.g. the presence of roads and trails or the existence of buildings, facilities and conveniences (Marshall, 1993; Wagner, 1966; Driver and Brown, 1978 and; Clark

and Stankey, 1979). These definitions are based on researcher preferences rather than conceptual differences, and are described in greater detail by the USDA Forest Service (1990).

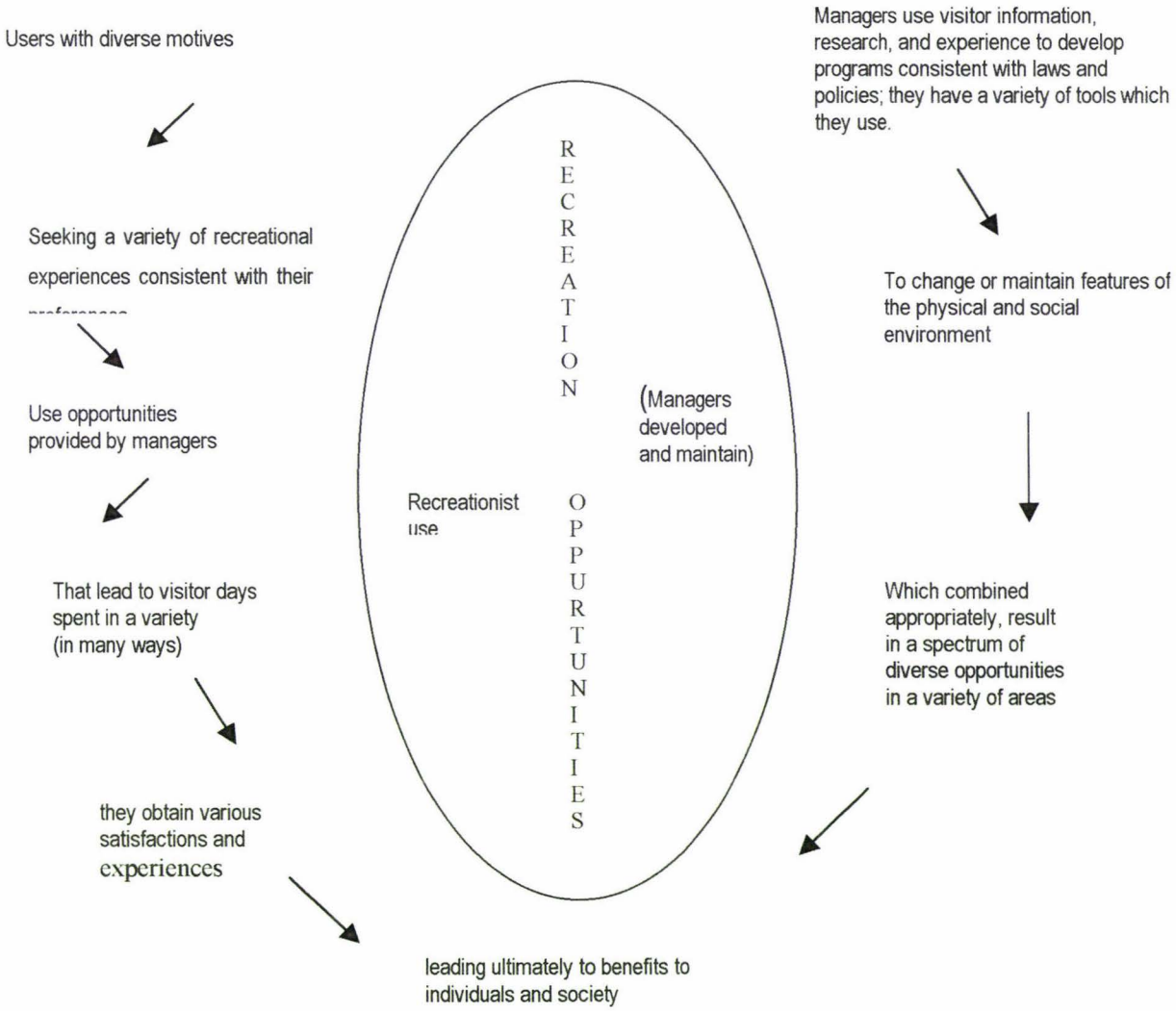
The basic premise underlying the concept of the ROS is that a range of such settings is required to provide for the many tastes and preferences that motivate people to participate in outdoor recreation. Quality recreation experiences can best be assured by providing diverse set of recreation opportunities. The task of the planner and manager is to provide various combinations of activity and setting opportunities in ways to facilitate the widest achievement of desired experiences (Stankey and Wood, 1982). Moreover, once an appropriate opportunity type has been chosen, ROS can help define specific management objectives for each setting attribute. Failure to provide diversity and flexibility ignores considerations of equity and social welfare, and invites charges of discrimination and elitism (Clark and Stankey, 1979). A sufficiently broad ROS should be capable of handling disturbances in the recreation system. These might stem from such factors as social change (e.g. in demographic characteristics) or technological innovations (e.g. all-terrain recreation vehicles) Stankey, 1982).

Within this conceptual approach, a recreation opportunity allows the individual to participate in a preferred activity, in a preferred setting to realise a desired experience (Driver and Brown, 1978). The focus is on the *setting* on which recreation occurs. Recreational settings are defined as the combination of physical-biological, social and managerial conditions that give value to a place (Clark and Stankey, 1979a). The recreation resource manager (Figure 3.12) manages settings, but does so in order to provide satisfying experiences for the individual and society (Department of Conservation, 1993). The ROS describes the range of recreational experiences which could be demanded by a potential user clientele if a full array of recreation opportunity settings was available through time. Clark and Stankey (1979:1) define a recreation opportunity setting as:

"...the combination of physical, biological, social and managerial conditions that give value to a place (for recreation purposes). Thus, a recreation opportunity setting includes those qualities provided by nature (vegetation, landscape, topography, scenery), qualities associated with recreational use (levels and types of use) and conditions provided by management (roads, developments, regulations). By combining variations of those qualities, management can provide a variety of opportunities for recreationists."

Jubenville and Becker (1983) emphasise the desirability of this management approach. If recreation resources are consistently managed for a defined opportunity type which is made known to the public, this is likely to have substantial benefits to both visitors and managers. Visitors are more likely to be satisfied with the opportunities they find and managers are less likely to have to resort to regulatory measures designed to control inappropriate visitor use.

Figure 3.12 Areas of Application of ROS



Source: Australian Parks Recreation, 1982

Despite its inherent appeal as a means of facilitating choice in outdoor recreation, specific application of the ROS approach have attracted criticisms. Manning (1986) says that for some managers of recreation sites, the concept has been treated as a 'blueprint', from which little deviation was possible or desirable. In other situations,

there has been a reluctance to amend the range of opportunity settings from that initially created, so as to allow some flexibility, in keeping with the dynamic aspects of the recreation environment and the preference of users. Indeed, there appears to be relatively little consultation with potential visitors to identify preferred recreation settings. Previous records (e.g. Water Board District, Palmerston North River Users Association) showed minimal participation of river users in consultation-meetings, and in the past, only a small number of those meetings were held, and not on a regular basis. The present practice on consultation with stakeholders will be explored in this study.

THE USEFULNESS OF LANDSCAPE ECOLOGY

Definition: any area of ecosystem or habitat (e.g., a patch of bush, a wetland, a river) does not occur in isolation, but is a part of a larger landscape with which it interacts or connects in a variety of ways. Landscape is simply the visible environment – the product of physical, biological and cultural features and processes. These connections are very important in the functioning of ecosystems and habitats; they may be simply physical connections, such as a stream flowing into a wetland, or more complex and relate to transfers between parts of the landscape (such as the transfer of genetic information through pollen and seed movement). The background using this criterion comes through the science of landscape ecology (Forman and Godron, 1986 and Hobbs, 1995). The understanding of its application is relatively new to New Zealand and it is suggested that ecological context is a key criterion for assessing significance in the context of Section 6(c) RMA (Noss and Cooperider, 1994). Applying ecological principles can provide a basis for developing alternative methods of managing landscapes which, for socio-economic reasons, are no longer managed in traditional ways (Bradshaw, Goode and Thorpe, 1986).

The growing emphasis on environmental protection means that landscape issues are increasingly high on political agenda. As land becomes even more scarce, it must be better and more efficiently used and better designed. The scarcity of available land will doubtless raise the financial stakes, and may provide ever greater funds with which to realise creative dreams (Blake, 1999). In the proceeding discussion, it is appropriate to get familiar with the terms such as landscape architects, landscape scientists, and landscape managers. Appendix Three provides the definitions of these terms. The scope or area of the research study may be insignificant in size or scale, but Cole (1986) contends that semi-natural habitats of urban areas (like the Manawatu River) with existing habitats are worthy of conservation and can provide immense opportunities

for community involvement and formal and informal environmental education. Because a river is an open system, its open nature makes restoration probably easier to achieve rather than in relatively-closed, self-contained ecosystems like forests (Moss, 1986). Successful application of landscape design to a water system must therefore take account of the distinctive ecology of aquatic vegetation. In new developments, this can be done at the design stage through depth, exposure and water quality specifications. In existing waters the feasibility of modifying these factors may be limited but at least these limits should be defined and taken into account.

Although design aims may be stated quite easily in such terms as integrated attractive appearance, textural diversity, stability and minimum maintenance, water differs so much from land as an environment for plant growth that the means of achieving these aims may require special consideration separately from those employed for the surrounding land. This can be a major challenge to the skills of the landscape designer. The challenge is increased by the fact that nowadays most waterbodies have multiple uses so that landscape considerations may have to be set alongside the needs of such other functions as water storage, stormwater balancing, land drainage, effluent disposal, navigation, angling, nature conservation, and public access and safety, each of which imposes ecologically-important effects on aquatic vegetation. A few of these conflict almost intractably with landscape aims, but most can be accommodated or even used supportively. The rewards of success are great when ecologically-satisfactory 'waterscapes' are created which powerfully enhance the landscape.

The use of landscape ecology in this study can be best justified from Nan Fairbrother's much acclaimed book *New Lives, New Landscapes* (1972), wherein he relates that planners and designers should work with rather than against nature; they should use ecology as the cornerstone to design. Landscape design involves detailed data collection and assessment and pays regard to the utility, durability and aesthetics of the proposed landscape. Furthermore, much attention must be given to the overall coordination of the design elements to create a unified whole; a whole that must fit in with, and enhance, the wider landscape setting (Blake, 1999). In simple terms, an ecological approach requires designers to act as accelerators in the natural succession process, by carrying out amelioration work to promote plant growth and by speeding up plant introductions. At the same time, the designer and land manager may be required to influence the development of introduced plant communities to meet specific user and aesthetic requirements. The outward expression of an ecological approach, therefore,

will be the creation of a range of semi-natural plant communities adapted to the prevailing site conditions and proposed site.

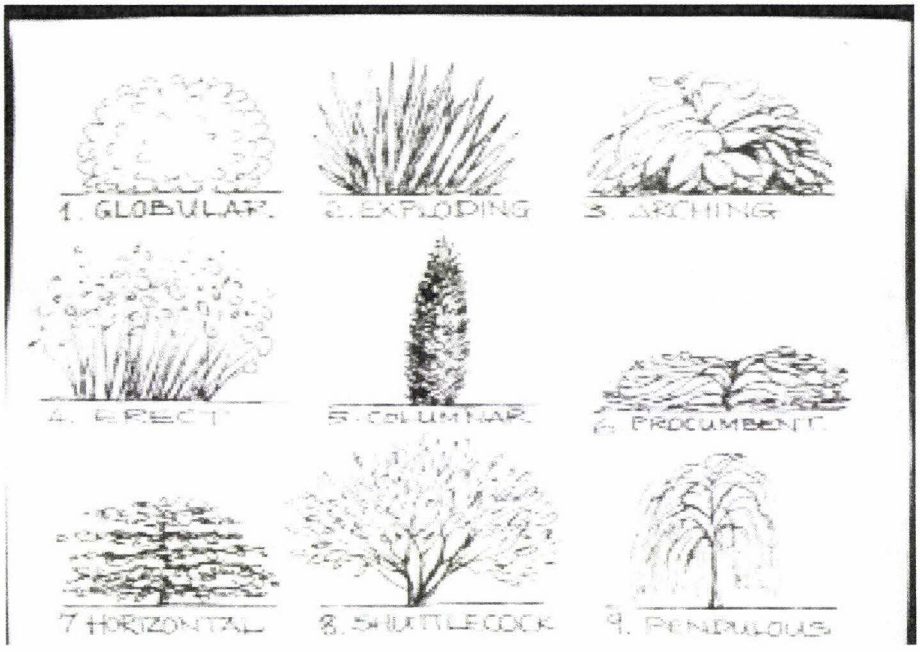
The principles of landscape design and construction is presented and discussed in Appendix Four. Given sufficient time, the initial vegetation of any scheme will come to reflect its environment and management. It should be a golden rule to avoid the inappropriate use of exotic species. The native plants of any country are the base for its indigenous fauna. If we want our landscapes to be alive with birdsong, butterflies and beetles, we must maintain a rich diversity of native food-plants for the herbivores at the bottom of the food chains. Species selection at the establishment stage can favour the spread of individuals of less vigorous species if aggressive species are omitted from the initial mixes (Baines, 1986).

From the above statement, it is important for a designer to fully understand the communities of plant materials that may exist on any proposed project site. Any preplanning effort that involves the analysis and inventory of a resource base should be first supplemented by an investigation of plant ecological regions. Only with this broader understanding will it be possible to gain an adequate interpretation of the local plant communities (Austin, 1984). Austin (1984) also says the dynamic relationship between the various vegetative systems found on a project site, or those that might be introduced in the design, are governed by a number of ecological factors: climate, physiography, and soil. In order to focus specific attention upon the individual species used in the project, a careful review of these ecological factors is important. For it is these factors, more than anything else, that will determine the geographic range and possible design functions of a natural vegetative community.

As mentioned in Chapter One, the river environment of the Manawatu has been modified over the years by river engineering works like embankment and piling to reduce the risk of flooding, and through the introduction of willows along its bank that has created low diversity, and reduced landscape and conservation interest. Fully-coherent softwood stands like willows are considered to be good protectors of banks, even on the outside curves of strongly-flowing rivers where erosion is most severe. Here, the alternative of reinforced planting with selected species may offer landscape, ecological and economic advantages if appropriate techniques can be developed (Bonham, 1980; Bache and Machaskill, 1981). Precisely-deployed plantings create some of the ecological character of a more natural waterway (Eaton, 1986). Figures 3.13 to 3.17 are meant to illustrate the various uses of plants in improving visual

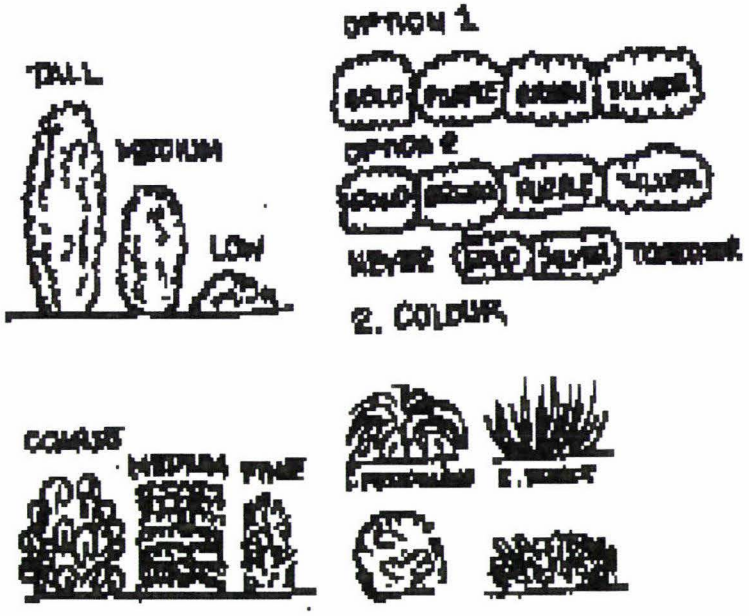
amenity or creating landscape character. Pfeiffer (1978) suggests that periodic vegetation maintenance is needed to preserve diversity. Although restoration is a technical possibility, Moss (1986) says perception of its need and the degree of restoration felt are political matters.

Figure 3.13 Plant Form. The many different plant forms should be juxtaposed and contrasted as much as possible to achieve the best effect. Form and habit are traditionally separated but when looking at individual plants it is usually one of the two that dominates the plant's character and determines how it should be used.



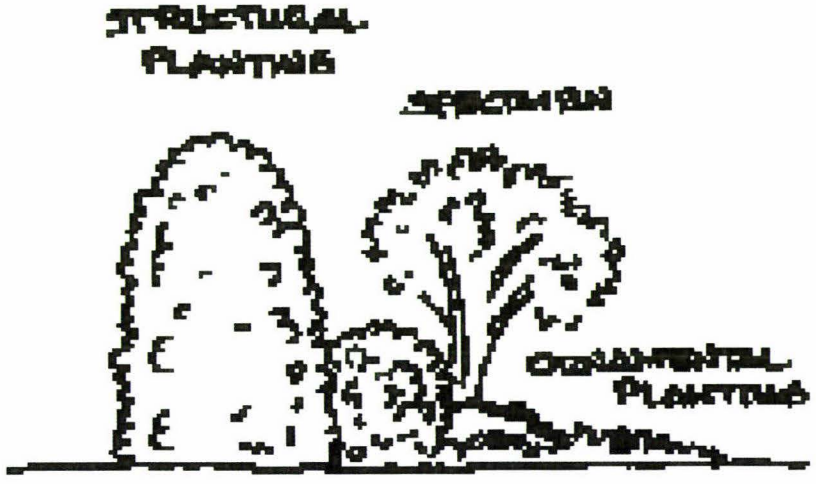
Source: Blake, 1999

Figure 3.14 Primary Design Criteria. **The most effective planting designs are those with plants selected to have the greatest number of contrast.**



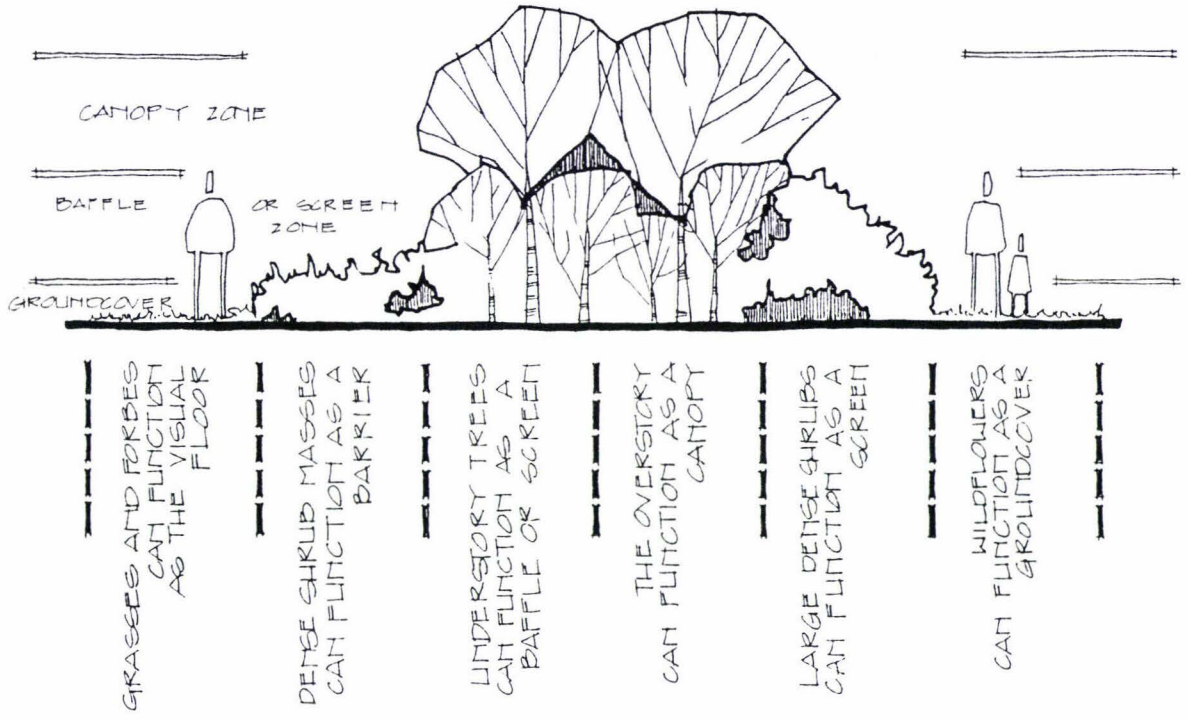
Source: Blake, 1999

Figure 3.15 Types of Planting. 1. Structural planting will be tall, bold masses of mostly evergreen planting to create and define space. 2. Further layers of ornamental planting which can be deciduous and include herbaceous material, are set against the structural planting. 3. Specimen plants of architectural form or seasonal colour.



Source: Blake, 1999

Figure 3.16 The five architectural forms of plant materials can be easily recreated in the natural landscape if different planting space is available.



Source: Blake, 1999

Figure 3.17 The combination of a canopy, screen, barrier, baffle and ground cover can be used in one plant mass in the natural landscape. (Courtesy of Johnson, Johnson and Roy, Inc. Ann Arbor. Michigan).

Source: Austin, 1986

THE ISSUE OF COST

It is understandable for government departments and agencies to be concerned about the costs of services, facilities and/or maintenance works on parks, open spaces or reserves. Disregarding the benefits to nature and nature conservation, Cole (1986) cites that the ecological approach has one major advantage over formal landscape designs, namely that of cost. For example, natural woodland blocks and meadow land can initially be established at 25% of the cost of formal planting schemes (Corder and Brooker, 1981). It is also argued that similar financial arguments exist for long-term management of new ecological landscapes. For example, the slow-growing native grasses such as *Deschampsia flexuosa*, which are best adapted to low nutrient status of most wasteland sites, require only limited cutting by comparison to a ryegrass sward.

Under current methods of urban space management, with work studies and bonus schemes on the one hand and restrictive work rotas on the other, cheap maintenance often equates with unskilled, easily programmed repetitive mechanised tasks, such as grass cutting, and not with infrequent but intensive tasks, such as hand scything or woodland thinning. In addition, aesthetic requirements, especially on small urban sites, may require constant intervention and management species diversity and the general attractiveness of the site Cole, 1986). Cole (1986) also suggests that in the management of small-scale sites, emphasis should be placed on high diversity and interest, either through the creation of a microcosm of semi-discreet habitats (such as have naturally developed on sites like native shrubs or trees) or through the intentional 'window dressing' of one or two habitat types (for example, the planting or creation of highly species-rich grassland along the riverbanks).

Cole (1986) says such sites will probably require sensitive and personalised management in the early years of establishment, to ensure that the distinction between habitat types, diversity and interest are maintained and enhanced. However, it should be stressed that if a local site is adopted and managed by a local school or community group, considerations of aesthetic acceptability may become less important, as the *raison d'etre* of the site and, therefore, its general acceptability will rest on the emotional commitment of the adopting body to the site in question. On larger sites, the aesthetic appeal is likely to rest on the creation of broad zones and blocks of different types of vegetation types merging one with another. Following such an approach, local diversity need not and should not be ignored.

Another cost-effective way to manage and maintain a natural resource or public open space that can be applied in managing and maintaining the river environment is through naturalistic maintenance rather than the formal way being adopted by many local authorities, as proposed by Parker (1986). Although a change to a more natural management may not necessarily reduce costs it does alter the nature of the maintenance tasks. This in turn can increase the opportunities for making use of more voluntary help and community involvement. The main differences in the work tasks are shown in Table 3.1.

An examination of these differences clearly indicates that very few people can be involved in formal low cost main maintenance. It can have very little attraction to volunteers who are seeking the satisfaction of 'making a show' and the companionship of a work team. In simple terms, a few days mowing is much less fun than clearing scrub and having a good bonfire (Parker, 1986). The involvement of volunteers and the adoption of naturalistic management programmes is very different from the routine maintenance by direct labour as it is practised in most local authority open space departments. This departments have often developed sophisticated and carefully controlled systems that rely on a well motivated staff concentrating on a relatively narrow range of routine maintenance tasks (Ellison, 1982). The costs generally are low and the biological expertise tends to be concentrated in a very small number of managers or technical assistants (Parker, 1986).

Table 3.1 Comparison of maintenance tasks involved in formal and naturalistic managements

Formal	Naturalistic
Frequent and regular	Infrequent and irregular
Highly mechanised	Lower mechanisation
Small use of hand tools	High use of hand tools
Repetitive	Little repetition
Few people involved	Large work teams possible
Low biological knowledge	Higher biological knowledge
Routine use of herbicides	Selective use of herbicides

(Source: Parker, 1986)

Maintenance of natural character requires higher level of expertise than general 'green area' maintenance. Therefore, the agency managing the area faces higher costs. It is not surprising that most work on open spaces has been carried out by volunteers and is centred around special restoration projects or on a countryside conservation, rather than the long-term care of public open space (Blencowe and Wood, 1983).

In an age of increasing leisure and/or unemployment this could mean opportunities will be, and are being, missed for making open spaces more attractive by topping up the very basic maintenance regimes that are provided by the local authorities. To alter the situation there has to be an initial rethink on the design and layout so that more volunteer work can be accommodated in a productive way. Secondly, the managers must alter their ways of working and organization. Finally, the volunteers have to be seen as aids rather than supplanters of the existing paid labour. This perhaps is the most difficult problem of all. It needs a great deal of persuasion and trust between the staff and managers and can only be seriously attempted where there is already a background of good industrial relations (Parker, 1986).

CONCLUSION

Planning for leisure and recreation can be improved and enhanced by combining the planning process with other methods or approaches, as the merging of the ROS with Landscape Ecology. Aside from just focusing on creating and providing a diverse range of recreational opportunities, the understanding and combination of these two approaches will contribute to, and will result in simulating the natural conditions of the natural environment that create an integrated and harmonious ecosystem that will increase recreational opportunities and contribute to better recreational experiences. On the other hand, adopting the ecological approach to landscape design will facilitate creative and sound landscape management. It will help promote environmental protection and conservation. It is also cost-efficient and cost-effective by using the appropriate plants and vegetation and has illustrated to improve the visual amenity of a place and to create landscape character. Two management options were also presented in maintaining open spaces that can be adopted in managing the study area which is the river environment of the Lower Manawatu River. As stated by Bradshaw, Goode and Thorp (1986), a landscape based on nature will be more resilient and require less maintenance than one that is artificial. The agencies involved in managing and maintaining the river environment can learn from the approaches presented in this chapter. It has illustrated the need to involve and employ the various disciplines of ecology and landscape design in planning for receration towards an integrated approach to landscape management that will aid in providing better recreational experience and opportunities.

CHAPTER FOUR

INSTITUTIONAL FRAMEWORKS IN THE MANAGEMENT OF NEW ZEALAND RIVERS AND THEIR EFFECTS ON RECREATION

'It is a very easy thing to devise good laws;
The difficulty is to make them effective.'
-Viscount Bolingbroke (1678-1751)

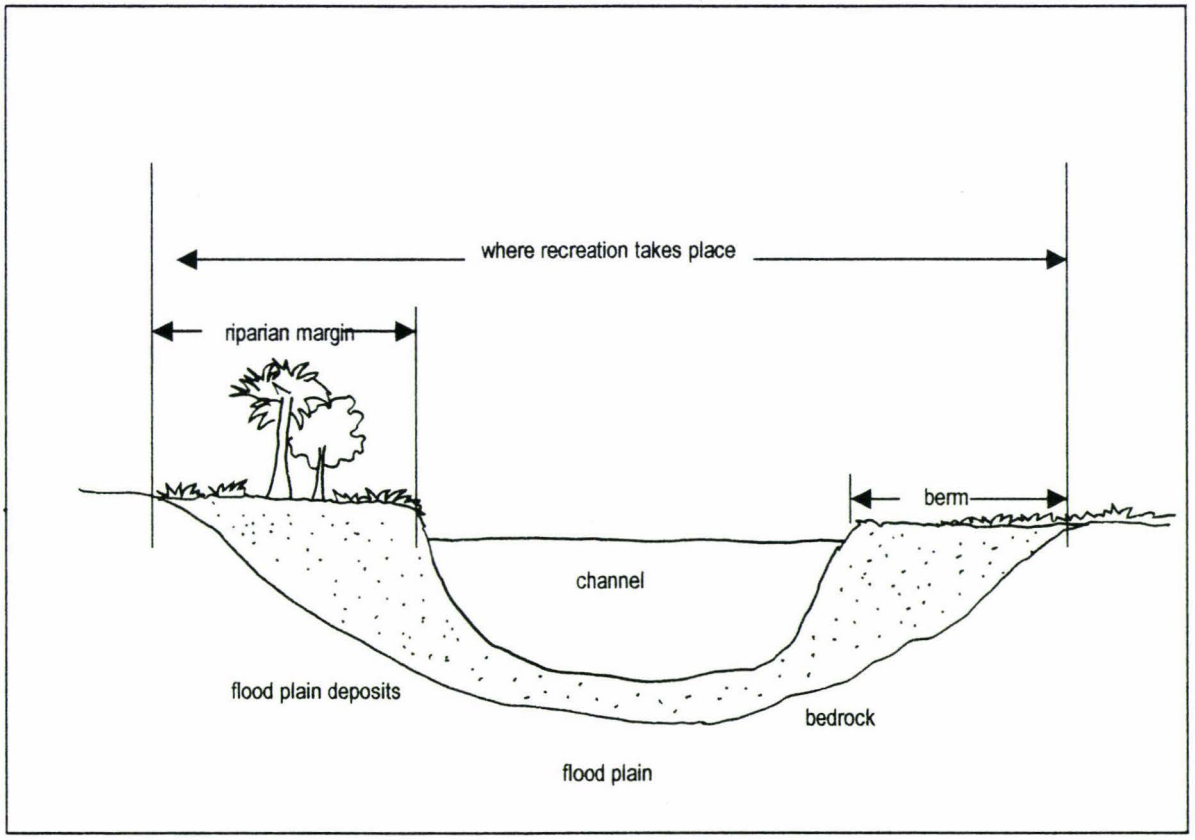
Chapter Four introduces the case study in this thesis, the Lower Manawatu River, identifying opportunities and impediments in its management, both for conservation and recreation purposes. The chapter also discusses the institutional framework provided by legislation, property ownership, and policies that have the potential to facilitate recreation or act as a constraint on recreation. This chapter forms the basis for Chapter Five in the analysis of the effects of river management on recreation at the Lower Manawatu River, identifying the priorities, policies and practices that promote or frustrates recreation. In Aotearoa-New Zealand, as elsewhere, there are no universally accepted definitions of leisure or recreation (Cushman, 1995). For the purpose of this review, broad definitions of leisure and recreation outlined in Chapter One are adopted, and thus it is not necessary to develop or defend single operational definitions of these terms. In this research, we shall refer to *river recreation* as those activities that take place somewhere between the stopbanks of a river, on adjacent berms, or in the river itself (Figure 4.1), which is adapted from the Malborough Rivers Survey (Robertson, 1986).

THE RECREATIONAL VALUE OF THE MANAWATU RIVER

The recreational use of the Manawatu River has been an important utilisation of the resource. In 1973, the Water Board saw fit to establish a Water Users Committee

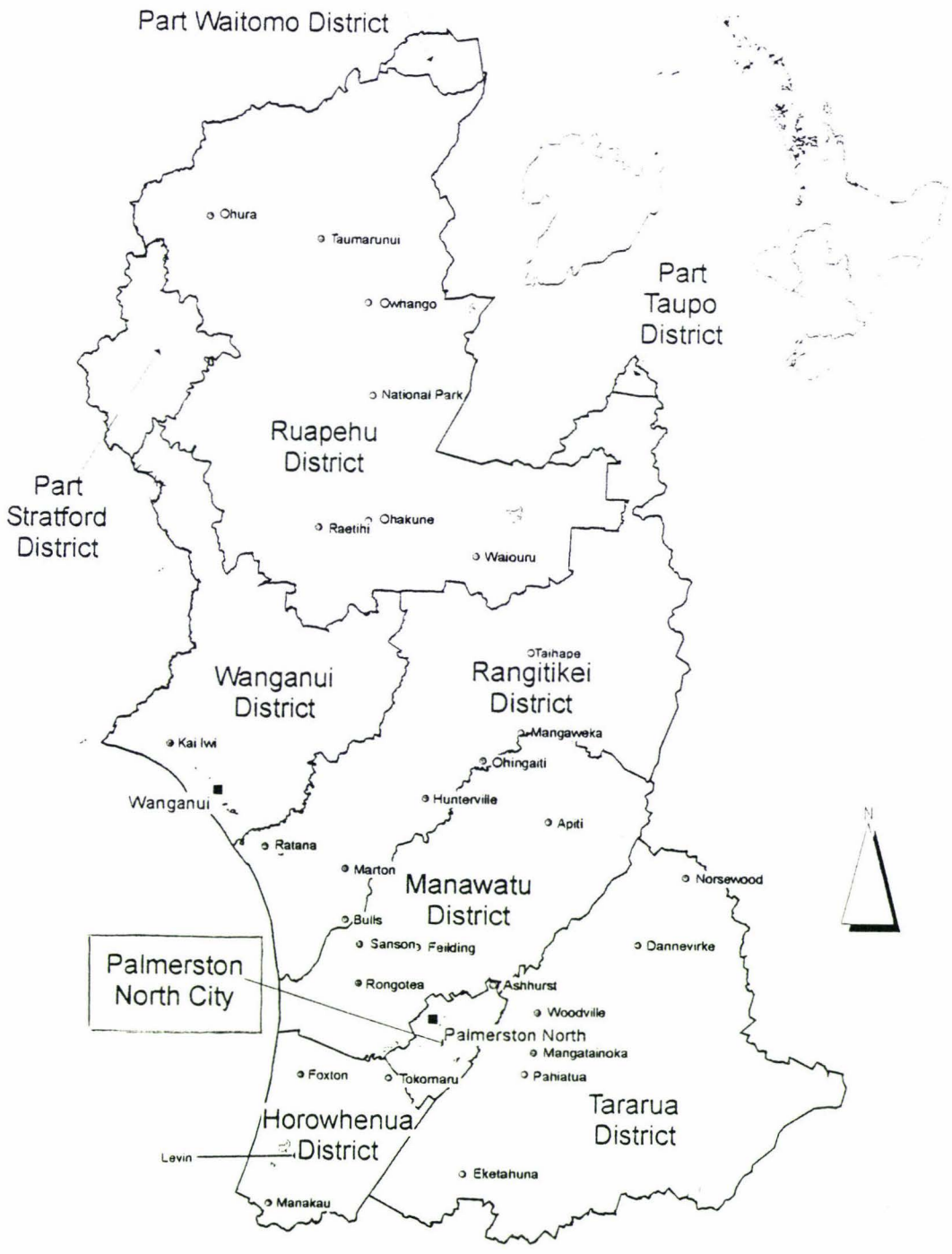
From the monitoring report conducted in March 2000, the Palmerston North City Council considers a possible increase in the access to lakes and rivers for recreation purposes but the report does not include a strategy on how to achieve this. It is hoped that this research will provide ideas for PNCC, Horizons.mw and river user groups to increase the number of recreation activities and the quality of people's experiences along the Manawatu River. Figure 4.2 illustrates the potential of Palmerston North to be developed as a centre for recreation and sports within the Manawatu Region, considering its proximity to several town and counties. Local authorities need to recognise the potential of the Manawatu River as an ideal place to be developed for recreation despite its small area and lack of amenity values. The river could benefit the city economically through the promotion of sports and recreational tourism. To achieve this the necessary facilities, services and the ideal environment for recreation need to be provided by the local authorities. This is where the usefulness of the ROS and Landscape Planning concepts will be applied and evaluated in the study.

Figure 4.1 Cross-section of a river where recreation takes place



Adapted from: Taranaki Regional Council

Figure 4.2 Location of Palmerston North in the Manawatu-Wanganui Region



Source: Manawatu-Wanganui Region (1999)

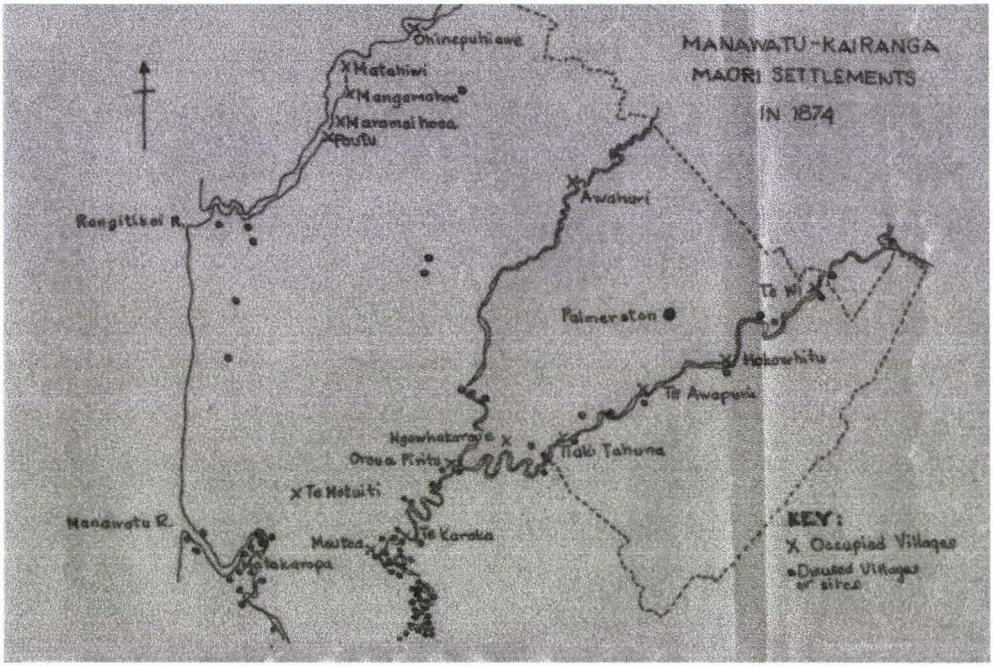
THE LOWER MANAWATU RIVER IN PALMERSTON NORTH

The city of Palmerston North (refer to Figure 4.2) is the Manawatu-Wanganui Region's largest city with a population of 75,000. Palmerston North springs from the banks of the Manawatu River. Appendix Five gives further description of the Manawatu River. The Maori name for the river, *Manawatu*, translates as "still breath". It comes from an *oriori* (lullaby chant) of the coastal tribes from the west coast of the lower North Island, telling the story of Hau's journey to reclaim his wayward wife. Hau named many of the rivers he had to cross on his long journey from the Taranaki to Wellington, where he finally found his wife and her lover. When Hau came to the Manawatu River, it was so wide and deep and cold that it made his breath stand still. So he called it still breath – *Manawatu* (PNCC, 1999).

The river traverses through the city of Palmerston North about 81/2 kilometres from Maxwell's Line down to Riverside Road which originates from the Rangitikei River and downstream to the smaller Oroua River (Manawatu Catchment Board, 1982). Both sides of the river are characterised by a thick vegetation of willow trees and some native trees or bushes, particularly podocarp and totara. The local iwi, Rangitane, have resided in the area for hundred of years and trace their decent from the Kurahaupo and the Aotea wakas. In planning for recreation it is also important to consider the cultural and spiritual values the Maori have for rivers. Further studies will be needed to explore iwi values and needs for recreation. This history of the river provides material to enhance people's perception of river values.

The Manawatu-Kairanga Maori settlements along the Manawatu River in 1874 is shown in Figure 4.3. At that time, this area was a forest of pukatea (yellow pine), tawa and kahikatea(white pine). Until 1890, the designated reserve was leased to various settlers for farming purposes and as a result most of the bush was destroyed. European settlement grew after the initial subdivision of the city in 1886 (Manawatu Catchment Board, 1982).

Figure 4.3 The Manawatu-Kairanga Moari settlements along the Manawatu River in 1874.



Source: History of the Manawatu River and the Manawatu Catchment Board, 1982

WATER QUALITY IMPROVEMENT IN THE LOWER MANAWATU RIVER

Figure 1.2 in Chapter One illustrates that land use in the region is predominantly agriculture and pastoral in nature that are vital to the economy of the region. Gow (1995) reports that up to 30 percent of New Zealand's pastoral land practices are probably still unsustainable. Non-point source of pollution from application of fertilisers and run off from intensive dairying has created pollution of water courses, and still poses some problems. Other environmental concerns and issues like low river flows, water allocation and gravel extraction and flooding are of great concerns for recreational use and stream life. This has brought about special management issues and means to monitor them.

For many years, the region's waterways were seen as convenient and cheap open sewers for disposing waste. This is now far less acceptable and gross water pollution is now a thing of the past. Less than 45 years ago, the Manawatu River was far more polluted than now. Excerpts from the 1957 Report Pollution in the Lower Manawatu and Oroua Rivers[6] show the river's visual conditions underlined the prevalent open-sewer

[6] *Pollution in the Manawatu & Oroua Rivers.* A report prepared for the Pollution Advisory Council by the Ministry of Works in Co-operation with Health & Marine Departments &DSIR, 1957.

mentality. High loading in 1956 came from the municipal septic tanks, not always kept in good condition, and straight industrial discharges with little or no treatment from the different abattoirs, freezing works and seven dairy companies in the area. The report calculated the total loading on the Lower Manawatu (not including the heaviliy polluted Oroua River) from these sources alone was equivalent to sewage from a population of 212,000 people. Efforts were made over the years to clean up the river. Water right conditions were tightened n 1964/65 and early 1980s. Reducing the organic waste load reduced the extent of the river zone affected by sewage fungus from approximately 6 kilometres below the Longburn discharge in 1982/83 to 2.5 kilometres when the freezing works met its water right in summer 1983/84.

Since then, extensive rationalisation of the primary processing sector has removed nearly all the discharges contributed from specific sources. With the freezing works closed, the dairy companies first refocused on the Longburn factory. In the last few years, nearly all milk has been transported out of the region to Hawera for treament. Municipal sewage is now treated to a far higher standard and resource consents will require further upgrading and reduction in discharge in the next few years. Total loading on the same river is now only two-fifths of 43 years ago – 88,170 persons equivalents, even though actual population has almost doubled. Sewage fungus is now no longer found in the Lower Manawatu River (Manawatu-Wanganui Regional Counci, 1999).

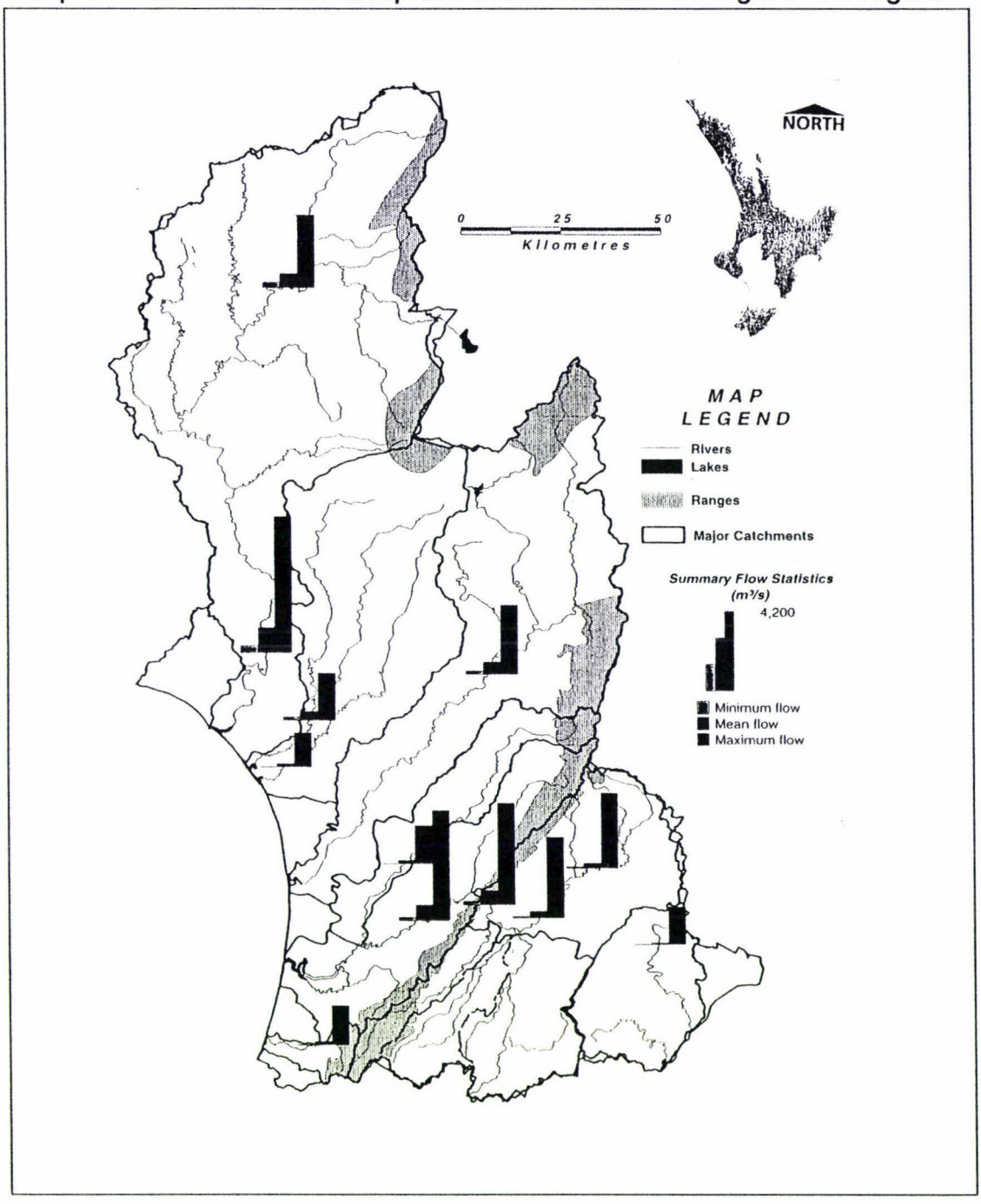
Recreational users, environmental groups and individuals have expressed concerns to the Manawatu-Wanganui Regional Council about the poor water quality in the Manawatu River, particularly between Palmerston North and the Foxton Estuary. The concerns primarily relate to observed degradation of the river environment, including effects such as sewage fungus and algal growths, and the public health risk associated with bacterial populations in the water. The Act imposes a significant regulatory framework regarding water quality. If a plan is not prepared, all discharges to water in the Manawatu catchment require resource consents (see Section 15 of the Act), unless they are allowed by the General Authorisations in the Transitional Regional Plan (Manawatu-Wanganui Regional Council, 1998).

RECREATIONAL USES

The Lower Manawatu River in Palmerston North will be the focus of this study. The central location of this river in Palmerston North makes it an interesting topic for urban

setting. From Ashhurst to Palmerston North, there is a good flow of water in this section of the river and can accommodate the use of drift boats, rafts and canoes/kayaks. Mean river flows at representative locations throughout the region are in Map 4.1 showing modified flow regimes. The Manawatu, Rangitikei and Whanganui Rivers have similar normal flow characteristics: higher flows in the winter months and low flows in February and March. Flood flows can be 30 times greater than normal flows. As a result of typically unsettled weather in December, the Manawatu River often experiences relatively high flows in early summer. There are, however, few rapids apart from the shingle shoals and they are easily run by the cautious novice. As for motor launches, some limited use could be made of the river but there are numerous shingle banks to be avoided and the river is not used to any great extent. Jet boats can be used, although the enforcement of speed restrictions limits it use. Not many people swim in the river although there are a few local 'swimming holes' throughout the catchment, particularly at the lower reaches. Not a length of the river is considered of great value and certainly not very exciting. The scenic value is regarded as uninspiring and the recreational value as intermediate (Manawatu Catchment Board, 1982). The Centennial Lagoon, an oxbow which was once a part of the river channel and is now bypassed and the associated public amenity area has high recreational value. It is an attractive urban park popular for walking, and where the most popular activities associated with the water are canoeing, kayaking and feeding the ducks (Manawatu-Wanganui Regional Council, 1995).

Map 4.1 Mean river flows at representative locations throughout the region



Source: Horizons.mw, 1999

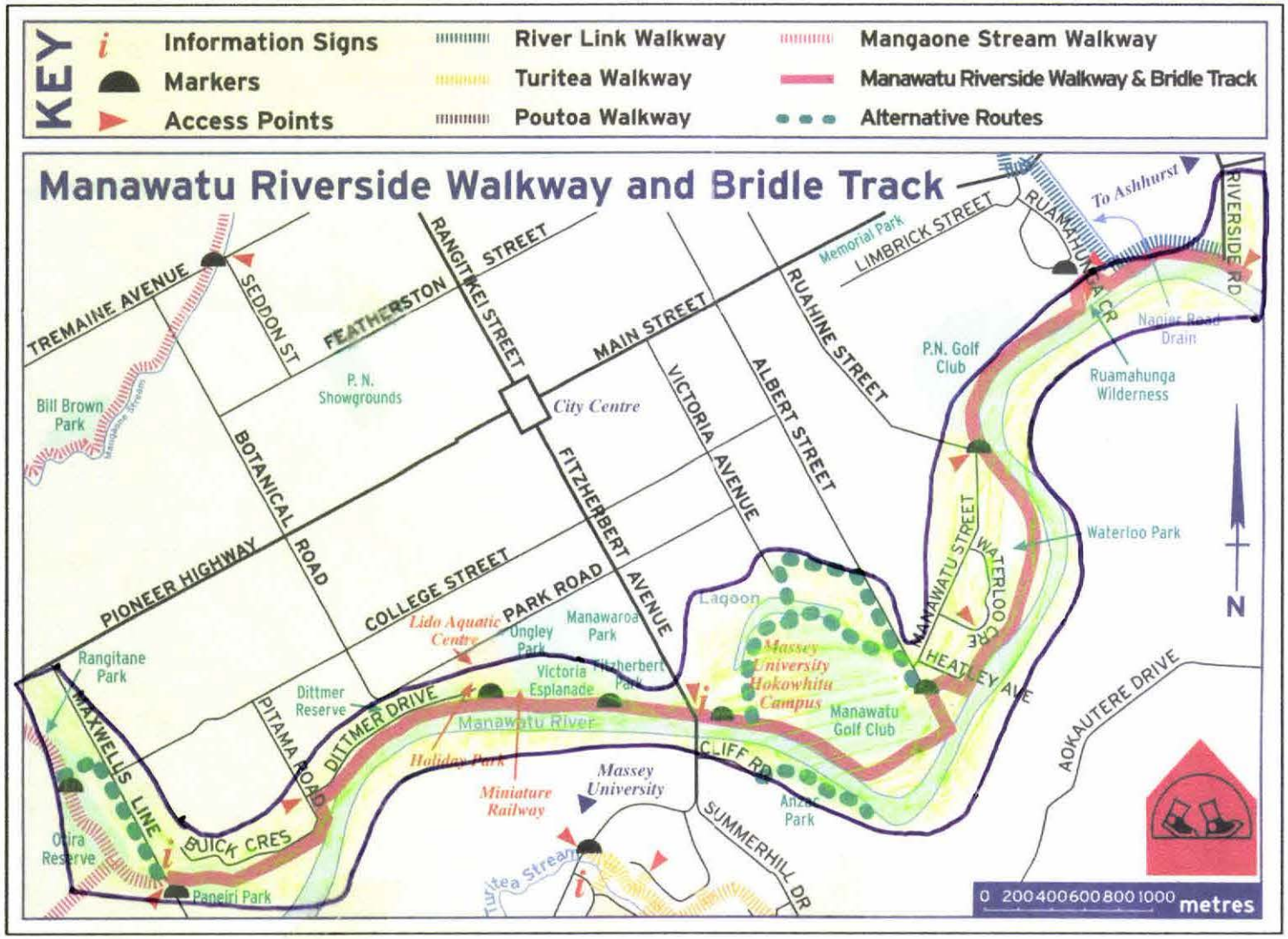
Although previous studies had been conducted about the recreational value of the Manawatu River, this had been done on a wider scale. The research study focuses on just one small area which is the short stretch of the Lower Manawatu River within Palmerston North (refer to Figure 4.2), possibly a key area for recreational development. Unlike previous research studies, this one gathers the personal views,

opinions and perceptions of Palmerston North residents who utilise the river for leisure and recreation. It attempts to show to the agencies concerned the degree of importance that the recreating public have for the river as a recreational resource despite past research studies that highlighted the river's poor environmental and recreational quality (see Egarr and Egarr, 1981) with the intent of drawing out a proposal for its development to improve and enhance the recreational opportunities and experience by 'opening up' the river, improving its visual amenity, and landscape character.

The Palmerston North City Council can be credited through the years for having provided recreational grounds and facilities for its constituencies, thus increasing leisure opportunities. Reserve land is acknowledged to contribute in creating a sustainable environment to live in that contributes to the health and well-being of its residents. The Council has also provided unique public spaces in which people can meet and interact. Therefore, the quantity and quality of reserves has a significant impact upon the quality of life of Palmerston North residents (PNCC, 2000). In relation to this, the PNCC has invested considerable resources to ensure a network of tracks taking in many attractive areas of the city. The Manawatu Riverside, Mangaone Stream and Riverlink Walkways connect to provide a circular route around Palmerston North. Thirty-two KiwiWalks are within this network. In addition another 12 KiwiWalks are provided elsewhere within Palmerston North (PNCC, 1999). Appendix Six presents an illustration of these walkways system in the city.

THE STUDY SITE

For the purpose of this study, the areas between Paneiri Park at Maxwell's Line leading to the Victoria Esplanade, up to Waterloo Park ending at Riverside Road has been selected due to its proximity and good access points to the river. The Manawatu riverside walkway and bridle track (9.6 km.) runs beside the Manawatu River, stretching from one side of the City to the other, from Riverside Drive to Paneiri Park (refer to Figure 4.4). Most often following the stopbank, this track meanders through riverside environment parks and reserves, and residential areas. The whole walk is within 2.5 hours of good walking. The respondents interviewed for this study are those that frequent the riverside walkways.



Sourced from: (Poncianito, 2002)

THE IMPORTANCE OF LOCAL GOVERNMENT IN ENVIRONMENTAL AND SOCIAL SERVICES PROVISION

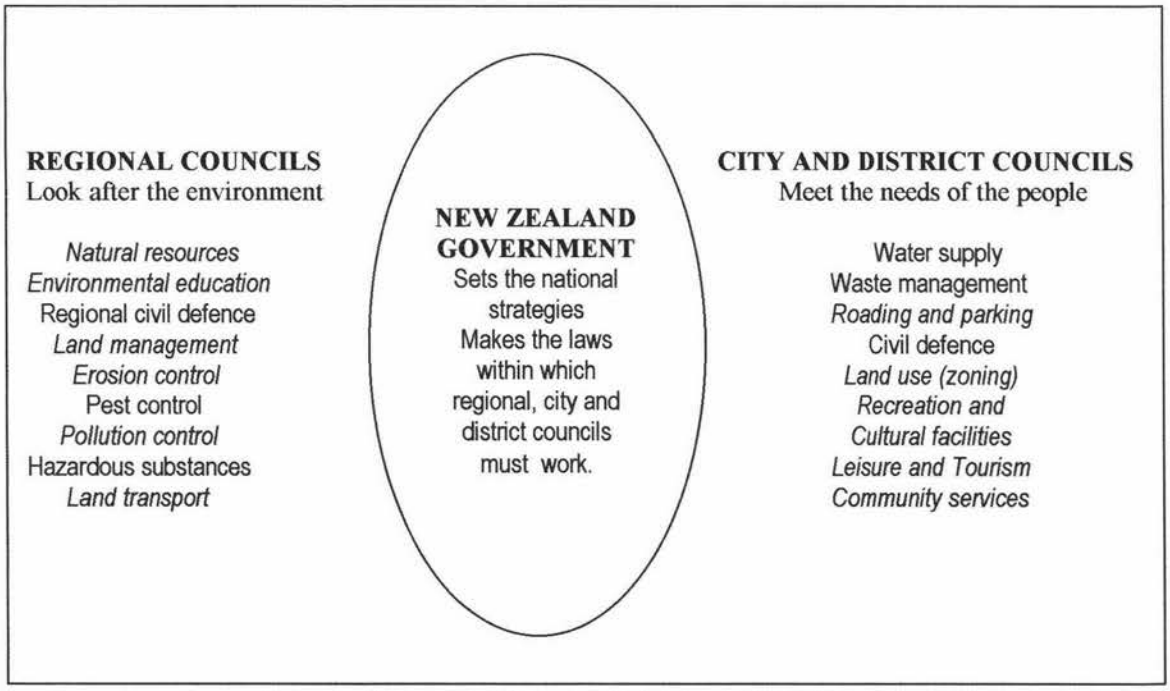
The Government recognises that local government is a key partner in delivering national goals and priorities. Local government is the most appropriate level at which to deliver environmental and social services to increasingly diverse communities (Elwood, 1998), and its capacity to deal more effectively with its increased responsibilities for such matters as environmental regulation and the quality of the environment (Parliamentary Commissioner for the Environment, 1998). It acknowledges local government's responsibility to meet specific needs of its communities throughout the country (Department of Internal Affairs, 2001). It is the arena where many, if not most, day-to-day planning issues are dealt with (Macbeth, 1996). Local authorities get their authority and functions from various Acts of Parliament. The Resource Management Act sets out some of their functions with regard to the management of the area's natural and physical resources (Ministry fro the Environment, 2000). The Act complemented local government reform in 1989 by devolving many decision-making functions to local authorities. Figure 4.5 sets out the rights and responsibilities of the central government, territorial and regional authorities. It also shows where issues and concerns that my affect recreation may be taken up or discussed (in italics), aside from those functions already given to the district councils that deal with recreation, leisure provision and tourism. Through the reforms in the Local Government Act, leisure and recreation provision is fully integrated in the city and district plans and strategies. Appendix Seven presents a discussion of the significance of RMA 1991 and the Local Government Act 1974 in the sustainable management of physical and natural resources. The Reserves Act 1977's contribution to enhance recreational experience and improve or provide recreation opportunities will be discussed later in the chapter.

RECREATION IN PALMERSTON NORTH

Recreation plays an important role for many residents in Palmerston North. It is a significant contributor to the quality of life and level of physical, social and cultural well-being that people within the City experience (PNCC, 2000). Currently, recreation reserves within the City offer a wide range of recreation opportunities (e.g., walking and organised sports) and encompass a variety of environments, extending from the multi-purpose recreational facilities such as the Showgrounds, through to neighbourhood parks and playing fields to the extensive walkways system. These reserves give life to the city by adding to its diversity and interest, while the recreational and cultural facilities

located on them are valuable in attracting residents and visitors alike. Areas such as the Victoria Esplanade, Ashhurst Domain and Bledisloe Park, also have important local amenity and/or conservation values which in turn contribute to the quality and variety of recreation experience in the City (PNCC, 2000). Of these reserves, the Victoria Esplanade is the main recreation venue of the City and has a wide variety of attractions. Such attractions include extensive native bush and flower gardens, children's play equipment, a small swimming pool, an aviary, fish ponds, attractive lawns, a large national rose garden, a begonia house and other features. The Esplanade, which totals just over 82 acres in area abuts the Manawatu River and is flanked by major playing fields and sports grounds. The area is centrally located and accessible to a large proportion of the City's population (PNCC, 1972). The river area alongside the Esplanade makes a good area for development which will be explored in this study. The relation of the Esplanade to other city reserves and their relative functions has been described in some detail in an earlier Research Report [4].

Figure 4.5 Responsibilities of Central Government in relation with the Regional and District/City Councils.



Source: Manawatu-Wanganui Regional Council, 2001

Central Government

Central Government is national level government. The Resource Management Act involves primarily the Minister for the Environment and the Minister of Conservation,

[4] "Parks, Reserves, Playfields and Open Spaces in Palmerston North" Report No. 23, July 1970.

and their respective Departments, the Ministry for the Environment and the Department of Conservation. The Minister for the Environment's role is an overview and monitoring one, with some areas of direct resource management responsibility. The Minister of Conservation provides a management framework for the coast through the New Zealand coastal policy statements (Ministry for the Environment, 1991). Their specific functions, powers and duties are set out in Appendix Eight. Policies and plans are structured in a hierarchy with the RMA, and each must "not be inconsistent" with those above it. Central government policies are on top, regional policies below them, regional plans next, and district plans at the lowest level. Central to the development of the plans is the consultation with regional government's constituent stakeholders (Commission on Sustainable Development, 1997). Regional and local councils are required to monitor the outcomes of policies and plans prepared under the RMA.

Regional Councils

Regional councils have the main responsibility for managing water and the beds of water bodies, controlling discharge of contaminants, and land use effects of regional significance. Certain activities on the beds of rivers and lakes will always require consent form the regional council unless expressly permitted by a regional plan. Such activities are specified in section 13. They share responsibility with water bodies and land use with territorial authorities and for coastal marine areas with the Minister for Conservation. Regional councils must produce regional policy statements. They may produce plans for the management of the region's natural and physical resources (Ministry for the Environment, 2000). Furthermore, the regional council is specifically empowered to control the passage across beds and the disturbance of plants and habitats of plants and animals in, on, or over, river and lake beds through regional plans. Any controls the regional council imposes through plans or on consents must relate to the primary functions of regional councils (section 30).

Territorial Councils

Functions of territorial authorities include land use consents under the Resource Management Act, noise control, litter control, roading, water supply, sewage reticulation and disposal, rubbish collection and disposal, parks and reserves, libraries, land subdivision, pensioner housing, health inspection, building consents, parking controls and civil defence (Commission on Sustainable Development, 1997). The district plan is designed to assist territorial authorities in carrying out their functions under the Act (Ministry for the Environment, 1991). It complements the role of regional councils on

some issues such as natural hazard mitigation and hazardous substances (Commission on Sustainable Development, 1997).

MANAGEMENT OF RESERVES

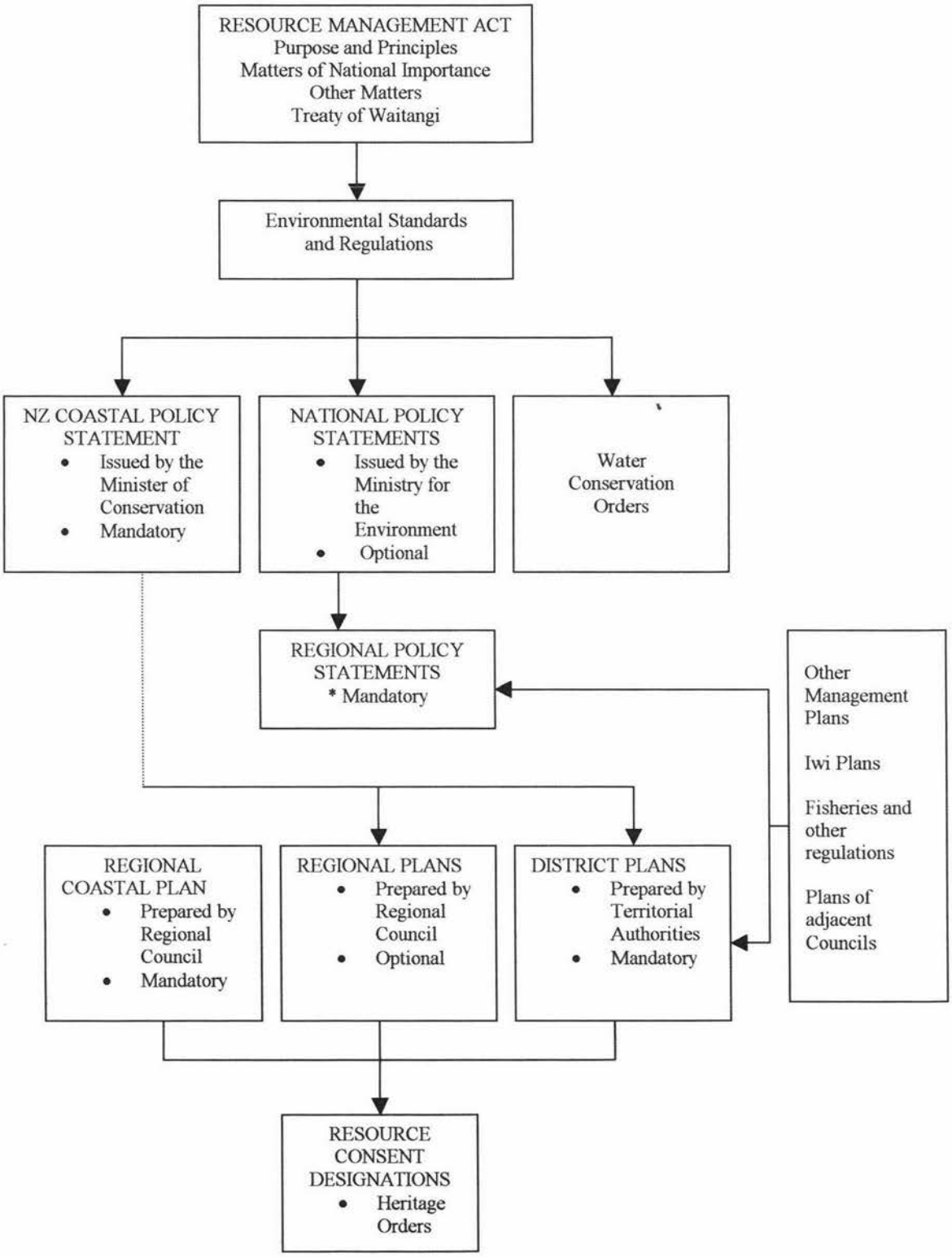
At present, the management of reserves many of them used for recreation purposes, is influenced by three main statutes:

- The Resource Management Act 1991
- The Reserves Act 1977
- The Local Government Act 1974

RESOURCE MANAGEMENT ACT 1991

The Resource Management Act of 1991 provides a framework for integrated resource management and integrates existing laws, the purpose of which is the sustainable management of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health (RMA, Section 5). The environment is looked at as a whole when authorities are planning and making decisions, particularly, those that relate with resource use and development. Figure 4.6 illustrates the policy and planning framework established by the Act to achieve integrated management. It enables the local authorities to carry out their functions under the Act. This framework is established through a hierarchy of planning documents at various levels of Government. The context of this policy statement and framework is presented in Appendix Nine.

Figure 4.6 Policy and Planning Framework



(Source: Manawatu-Wanganui Regional Council 1997)

RMA provision for access to rivers and lakes

The Resource Management Act 1991 makes provision for access to rivers and streams by way of 'esplanade reserves' and 'esplanade strips' that can be created through subdivision or by negotiation (see Appendix Ten for definitions of esplanade reserves and esplanade strips). Increasing the number of esplanade reserves and strips and fully developing linkages increases the quantity and quality of access to rivers and lakes (RMA, Section 6). Unless provided otherwise in a district plan, a 20 metre width esplanade reserve is taken by a territorial authority alongside all rivers more than three metres wide, lakes of more than eight hectares, and the coast when the land is subdivided. Currently, the width of esplanade reserves in Palmerston North is from a minimum of 10 metres to a maximum of 50 metres. The esplanade reserve is a local purpose reserve under the Reserves Act. Any land within the lake or riverbed, or below the mark of mean high water springs is vested in the Crown unless the Minister of Conservation waives the vesting. The esplanade reserves along the Manawatu River is administered by PNCC. The PNCC administers a total of 22 esplanade reserves within the City boundary. These reserves total an area of 23.47 hectares. This presents an increase of 28% since 1999. The increase is attributed to a combination of improved and more accurate reporting, and recent subdivision activity in Kelvin Grove, the Turitea Valley and Aokautere (PNCC, 2000).

RESERVES ACT 1977

The Reserves Act 1977 requires that reserves be managed for the purpose for which the reserve was classified. Management requires enabling the use, enjoyment, development, maintenance, protection and preservation in a way that is consistent with the purpose of the reserve. Accordingly, great emphasis must be placed on the correct classification for any reserve. Management of many reserves has been delegated to territorial authorities. Many of the delegated reserves are in riparian zones. Improving conditions in streams and rivers through riparian management is consistent with the aims of New Zealand resource laws. The RMA promotes the sustainable use of resources while "avoiding, remedying, or mitigating any adverse effects on the environment". Riparian management is an important tool for resource users and managers to meet their obligations under the Act (Department of Conservation, 1995). Well-managed riparian areas can enhance recreation experience and enjoyment in and along the river environment. The benefits of riparian management will be further discussed later in the chapter.

Although, the Resource Management Act 1991 is the principal resource management legislation, other legislation impinges upon resource management activities. These must be also be taken into account when resource policy is being formulated. Reference is made to these other statutes where either complementary action is required to enact a policy, and/or implementations is most appropriate under another Act (Manawatu-Wanganui Regional Council, 1995). For this study, a list of statutes that may be relevant to affect provision of leisure and recreation is presented in Appendix Eleven.

PNCC's classification of recreation reserves

The PNCC recognises that in addition to its responsibilities under the Resource Management Act 1991, many of the City's recreation reserves are controlled through the Reserves Act 1977 and a need to adopt an integrated management approach. The classification, management and control of reserves is undertaken under Part IIA of the Reserves Act 1977 which requires that reserves be classified according to their principal purpose and that management plans be developed. Such reserves must be administered and maintained in accordance with this requirement. In order to facilitate the management and development of these areas, the PNCC through its District Plan has classified the recreation reserves into five distinct zones while ensuring any adverse effects are appropriately managed (Table 4.1). By adopting these distinctions, the Council considers that it will be able to respond to changing recreational trends and community needs and the development of an appropriate mix of recreation activities, recreational environments and supporting facilities (PNCC, 2000). Note that in four of the five recreation zones classified which excludes the Racecourse zone, the Manawatu River itself has not been considered or included as having high environmental or amenity values that could form basis of a wide range of recreational activities are provided. Although the City Walkways system traverses along the Manawatu River, it has been referred to only as a link to other open space areas within the city.

Table 4.1 PNCC classification of the five recreation zones

RECREATION ZONE	PURPOSE	COVERAGE
1. Recreation Zone	To provide for active sport, recreation and community activities.	Includes local reserves which are of limited size and cater for fewer recreational needs. Examples: Milverton Park and Ongley Park
2. Conservation and Amenity Zone	Seeks to recognise and protect the values of these areas by restricting the range of activities and associated development permitted within the zone.	Covers those natural areas which have been identified as having high environmental or amenity values and which are generally in Council ownership. It includes areas of significant flora and fauna

		and important scenic areas. Examples: Bledisloe Park, McCrae's Bush (Ashhurst), Keeble's Bush (Linton), and City Walkways system.
3. Water Recreation Zone	To provide for a limited range of water-related recreation activities on the surface of waterbodies.	Covers the fresh water surface areas of the Manawatu and Pohangina Rivers, Hokowhitu Lagoon, the Turitea, Kahuterawa and Mangaone Streams within the Palmerston North City boundary.
4. Racecourse Zone	To recognise the two sites' multiple functions as racecourse, race training facilities and as sites for a variety of recreational, entertainment and leisure activities. It also recognises a number of activities which have historically established sites.	Covers the existing Awapuni Racecourse property at Awapuni and the Manwatu Harness Racing Club site on Pinoneer Highway.
5. Showgrounds Zone	Accommodates a wide range of activities ranging from national and international sporting fixtures, through to the A & P Show and a range of other shows, trade exhibitions and conventions.	The site contains large array of facilities including stadiums, pavilions, the Grandstand and Oval, community halls, playing fields, a speedway track, administration offices and parking areas.

(Source: PNCC, 2000)

Restrictions on public access to rivers and lakes

The protection of the natural character of wetlands, waterbodies and their margins and the maintenance and enhancement of public access to such areas are recognised as matters of national importance under Sections 6(a) and 6(d) of the Resource Management Act 1991. Restrictions to public access occur for various reasons. Public ownership of riverbanks and lakes edges is one of the reasons. A significant portion of access to and along the rivers and lakes in the Region is over private property and access is in accordance with the discretion of the landowner (van Essen, 1996). Restrictions of public access over private lands may occur for reasons like public safety and/or legislative requirements. With regard to the waterbodies themselves, the PNCC's responsibility is confined to controlling the activities on the surface of the water and this focuses its concerns on recreational activities. Therefore, the focus is on the effects of the use of the surface of the water, particularly noise. The Regional Policy Statement[5] also recognises the need to manage the water quality of these waterbodies

[5] Under Section 59 of RMA 1991, through the Regional Policy Statement, Regional Councils are required to provide policies and methods to achieve integrated management of the natural and physical resources of the Region. The concept of integrated management is the basis of sound resource management and achieving integration is critical to effective resource management.

and to recognise their ecological significance. The Act gives the primary responsibility for the management of this matter to Horizons.mw (PNCC, 2000).

It is important to recognise that both Regional and District Plans have an effect on the nature of recreation planning. An effective reserve management plan must sit closely alongside the District Plan, upholding the objectives, policies and rules within that plan. Its central concept of sustainable management encompasses the themes of use, development and protection. Instead of prescribing what activities should or should not be allowed, the Act places emphasis on the effect a proposed activity will or might have on the environment (Ministry for the Environment, 1999). While New Zealand is not lacking from attractive and natural settings for recreation, the Act 's focus on the effects of certain activities on the environment will certainly affect or limit the provision or creation of recreational opportunities.

EFFECTS OF LAND USE ON WATERCOURSES

A recent nationwide survey of resource managers highlighted widespread concern about the effects of land use on watercourses and the need for guidelines on how adverse effects may be reduced (MAF, 1993). Research and monitoring results clearly show that such concern is well-founded, with water quality and biological communities of many New Zealand watercourses being adversely impacted by removal of native forest and development of their catchments, particularly pastoral agriculture (Viner 1987, MAF 1993, Quinn et al. 1993). Accompanying this land use change has been the introduction of around 70 million grazing animals (mostly sheep, beef and dairy cows), introduction of nitrogen-fixing plants such as clover, the annual application of around 50,000 tonnes of phosphorous and 90,000 tonnes of nitrogen fertilizer, artificial drainage of poorly-draining soils and swamps, extensive channel and riparian engineering works for flood protection purposes, and urbanisation and industrial development (Department of Conservation, 1995). All these have caused the deterioration of water quality and damage to aquatic and riparian habitats that happens to be important pre-requisites for outdoor recreational pursuits, especially water-based recreation.

FRAMEWORKS FOR MANAGING RIVER AND LAKE BEDS TO IMPROVE WATER QUALITY FOR CONTACT RECREATION

One way to control and monitor use of water resources is through regional plans which deal with specific resource management issues. Regional and local councils are required to monitor the outcomes of policies and plans prepared under the RMA. The

Manawatu-Wanganui Regional Council has prepared a Regional Plan under the provisions of the Resource Management Act of 1991. The Plan provides for the sustainable use of resources in the beds of rivers and lakes by avoiding, remedying or mitigating the effects of activities and ensuring the use of resources is sustainable. Activities involving the use and development of beds and rivers and lakes can cause adverse environmental effects, particularly on riverbed, channel or bank stability resulting in flooding or erosion. For example, the placement of structures in the bed can have these effects (Horizons.mw, 1995). The regional council also manage the associated activities of the damming and diverting of water, and some activities on land adjacent to the bed (outside the bed). The Regional Plan for Beds of Rivers and Lakes and Associated Activities (BRL Plan) is one of the key regional plans aimed to maintain and enhance values of rivers and lakes in the region. The other regional plans that are crucial for contact recreation are the Manawatu Catchment Water Quality Regional Plan and the Land and Riparian Management which will be discussed in detail later in the chapter. Figures 4.7 and 4.8 illustrates the riverbed and adjacent land controlled in part by this Plan which may limit the recreation potential of river and its environment because of structural barriers. This Plan has effect on over these areas throughout the Region, except in the coastal marine area (CMA).

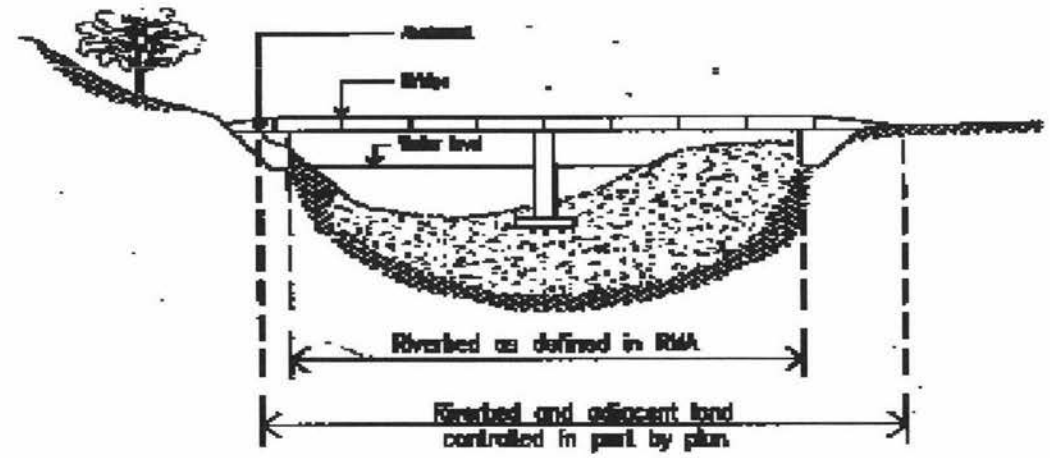
The issue of environmental effects on uses of river and lake beds

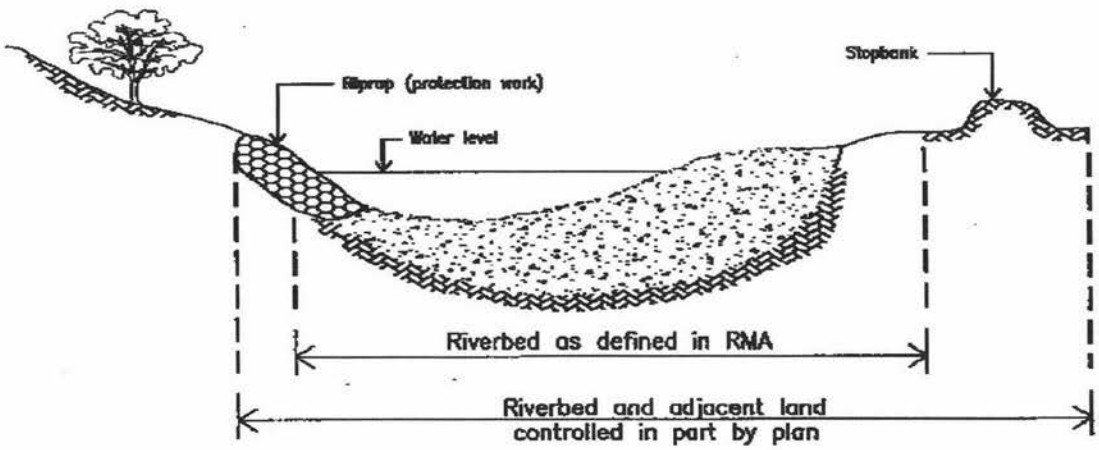
The Region's river and lake beds have a wide range of use and demands. Some uses may have adverse effects on the environment, the resources themselves or the values of those resources to other people, like for example the iwis. Other uses may be directly conflicting or competing. The continued use and development of river and lake beds provide significant benefits to people and communities. However, the Act requires that environmental effects of activities are effectively avoided, remedied or mitigated. These are just one of the important issues to be explored in this thesis.

If particular uses are having adverse effects on the environment, or on the resources themselves, continued use may not be sustainable. In some situations, some existing resource use may not be sustainable. In some situations, some existing resource use and the management of the use may need to change, as in restricting or prohibiting fishing, or speed boats in certain areas along the river, thus, affecting recreational pursuits. In such situations there will need to be provisions to enable users to make the transition to more sustainable management regimes. Another example of where this may have to occur is in the management of the extraction of gravel. However, in many

cases the uses that people make of the beds of rivers and lakes may able to continue unchanged.

Figures 4.7 and 4.8 Riverbed and adjacent land controlled in part by this Plan





(Adapted from the Manawatu-Wanganui Regional Council, 1997)

The Plan provides the framework for managing the effects of activities by adopting effects based rules for many of these activities. This includes rules that permit or enable certain activities provided adverse environmental effects are avoided, remedied or mitigated. By doing so, the Council aims to achieve the desirable environmental outcomes and sustainable resource management as required by the Act (Manawatu-Wanganui Regional Council, 1997). Adopting the effects-based rules on certain activities will definitely restrict the very purpose and objectives of the Recreational Opportunity Spectrum proposed to be used in this study.

The scope of the Plan is focused on several Sections of the RMA. These are:

- restrictions on activities in the beds of rivers and lakes (Section 13);
- the damming and diversion of water (Section 14 (1) and associated discharge of excess water (part Section 15 (1));
- restrictions on land use (Section 9); and
- the functions and responsibilities of Regional and District Councils (Sections 30 and 31).

The Plan applies to all activities that occur in the bed of a river or lake, as defined in the Act. The Plan contains to manage land outside the bed (as defined in the Act) where activities have effects on flooding or erosion, and on the mitigation of flood hazards. This is consistent with the Regional Council's functions relating to soil conservation and flood protection. The specific land areas managed by provisions in this plan include:

- areas that the Regional Council has required to be designated or zoned for river control (flood protection or erosion control) purposes in operative and/or proposed District Plans (consistent with the responsibilities for flood hazards as defined in Policy 31.1a of the Regional Policy Statement);
- stopbanks and other embankments intended to contain or channel flows in rivers or lakes and on any land between the inland toe of the stopbank and the river or lake bed; and
- land immediately adjoining the river, where activities, structures or the foundations of structures such as bridges piers or abutments, are located on the bank or area of land immediately adjoining the bed (refer to Figure 4.7 and Figure 4.8). This kind of institutional arrangements, however, limits the capacity and capability of district councils to manage recreation activities.

Uses and demand for water

Water may be consumed, damned or diverted or used to assimilate and transport waste. Often when it is consumed in large quantities there is a corresponding need to discharge and assimilate waste water. Diversions may be of three types:

1. water returned to the river after a short distance
2. water transferred to another watercourse within the region

3. water diverted out of the region

Rivers and streams may be damned to enhance consumption, to assist diversion, reduce flood hazard, or create wildlife and recreational features. Resource use is managed by the consent process. Abstractions of surface water less than 15m per day and dams less than three metres high are permitted activities. They are therefore not part of the consent process. There are also many small dams throughout the region. The majority store water for on-farm use. No information is available on the effects of any of these dams, nor are records kept on small abstraction (Horizons.mw, 1999).

a. The Regional Plan for Beds of Rivers and Lakes and Associated Activities (BRL Plan)

The Regional Plan for Beds of Rivers and Lakes and Associated Activities (BRL Plan) is one of seven regional plans. The plans all help ensure that natural resources are sustainably managed. The BRL objectives complement and help achieve the objectives of the Manawatu Catchment Water Quality Regional Plan and the Regional Coastal Plan. The BRL ensures that there is no inappropriate use or development that could modify river and lake habitats and ecosystems, modify physical characteristics of rivers and result in the decline of physical resources (Manawatu-Wanganui Regional Council, 2001). Table 4.2 show the activities covered by other regional plans while Table 4.3 presents those activities covered and not covered by the BRL Plan and its effects on river recreation. There should be sufficient volume of water during normal years to permit, during recreation season, full enjoyment of water-related outdoor recreation activities (US Department of the Interior, 1970). At the same time, the BRL concentrates on four objectives designed to avoid, mitigate or reduce adverse effects of various activities on rivers and lakes of the Region. The objectives are set out in Appendix Twelve.

The Regional Council has also adopted a management regime of regulatory and non-regulatory methods to implement the policies of the Plan. The regulatory and non-regulatory methods of regional rules are in Appendix Thirteen. Review of these methods show that these policies may have significant effects on recreation planning and provision on and along the river.

Table 4.2 Activities covered by other regional plans

Regional plans and strategies	Purpose/concerns
Regional Policy Statement	Gives an overview of the resource management issues and how horizons.mw intends to achieve integrated management of natural and physical resources.
Land and Water Regional Plan	Discharges to land and water, surface water takes and uses, groundwater and land management.
Manawatu Catchment Water Quality Regional Plan	Water quality standards and restrictions on discharges to land and water catchment.
Oroua Catchment Water Allocation and Rivers Flow Regional Plan	Minimum flows levels for the Oroua and Kiwitea Rivers.
Regional Air Plan	Discharges to air that result in objectionable odour and dust and agrichemical spray drift.
Regional Coastal Plan	Dealing with activities in the 'wet' part of the coast.
Land and Riparian Management	Addresses accelerated erosion, soil degradation, effects of land use on water quality and the state of riparian margins.
Whanganui Catchment Strategy	Promotes land use decisions based on the inherent capability of land in the catchment and monitoring of water quality.
Lake Horowhenua Catchment and Hokio Stream Management Strategy	A joint strategy between horizons.mw, the Horowhenua Lake Trustees, Horowhenua District Council and Department of Conservation to address water quality in the catchment.

Table 4.3 Activities covered and not covered by the BRL and its effects on river recreation

Activities covered by the BRL	Activities not covered by the BRL	Positive effects on river recreation	Negative effects on recreation
-taking gravel from rivers; -damming or diverting a river; -building structures in or across rivers; -maintaining and removing structures in, on, under or over river; -reclamation or drainage of rivers or lakes; -laying lines, cables or pipelines in, under, on or over rivers and lakes; -planting or removing plants in, on river and lake beds; and -flood protection and erosion control activities.	-minimum flows; -artificial water courses; and -taking or use of water * these activities are provided for in the Land and Water Regional Plan	-can provide and improve access on, to and from river. -sound riparian management can improve water quality and improve habitats, control erosion, provide shelter and shade enhancing enjoyment of both physical and ecological attributes of river.	-can affect water quality (e.i. clarity, purity and temperature) and quantity (e.i. water level distributions or fluctuations) reducing user satisfaction and enjoyment of the resource for leisure and enjoyment. -can adversely affect habitats/ecosystems; loss of visual amenity afforded by rivers and streams in their natural state reducing, even depriving leisure and recreational opportunities for nature study, fishing, birdwatching, painting and sketching, etc. -flood protection and erosion control works can block view of river, limit access and movement of users, can impinge on functional effectiveness of the recreation resource base.

Prior 1985, Manawatu gravel extractors relied heavily on river deposits and Lower Manawatu extraction averaged 150,000-200,000 m3/year. Today, channel extraction is being reduced, extraction below water level has been prohibited, and increasing control is exercised over extraction sites. Extraction can increase floodway capacities and

assist river control (McLennan, 1984). Therefore, this either allows or makes possible other developments to take place along the river (i.e picnic tables, gazebos, etc).

b. Manawatu Catchment Water Quality Regional Plan

Aside from the BRL Plan, the Manawatu-Wanganui Regional Council has also adopted the Manawatu Catchment Water Quality Regional Plan. The Plan applies only to the Manawatu Catchment, and addresses issues relating to degraded water quality. It aims to address the effects caused by discharges to water, and discharges to land where that discharge may enter water in the Manawatu Catchment. The Plan will enhance water quality in the catchment to make it suitable for contact recreation within fifteen years, which means it will considerably affect a number of recreation pursuits in and along the river for quite a long period of time. It contains policies, rules and non-regulatory methods that will enhance water quality in the Manawatu Catchment and affects the whole of the Manawatu River and all its tributaries.

Rules adopted in this Plan include performance conditions relating to the maintenance and enhancement of water quality. Water quality standards adopted in the Plan will ensure that during low flows water in the Manawatu River and its tributaries will be suitable for swimming and other recreational activities. Table 4.4 shows the key terms used in the Plan while Table 4.5 shows what the Plan aims to achieve from 5 to 15 years with regard the quality of surface water in the river.

Degraded water quality reduces the life-supporting capacity of the water body, and its actual or potential uses and instream values. The recreational values and aquatic habitats of many of the rivers in the Manawatu catchment have been adversely affected by poor water quality, in particular the lower Manawatu River (van Essen, 1995). Water for recreation use (e.g., boating and bathing) should not only be free from colour, odour, or anything visible of an objectionable nature (such as sludge banks, suspended matter, floating material or oil) but also should not contain anything injurious to public health (Klein, 1962). Many rivers are polluted by sewage and may be unsuitable for bathing unless a bacteriological analysis has shown them to be reasonably safe, as what the Regional Council does among other things, to ensure it reaches the water standards it has set for the purpose of contact water recreation.

Although the Council has taken action appropriate action to treat discharges to improve the quality of effluent reaching the river form point sources, water quality in the

Manawatu catchment requires further improvement. While point source contamination can be managed on a case by case basis, non-point source discharges, such as sedimentation from erosion effects and runoff from wastes discharged onto land require a management approach integrated with land management and soil conservation (Manawatu-Wanganui Regional Council, 1995).

Table 4.4 Key terms used in the Plan
(Source: Manawatu-Wanganui Regional Council)

- **Permitted Activities:** These activities area allowed without a resource consent, provided conditions are met.
- **Controlled, Discretionary and Non-Complying Activities:** A resource consent must be obtained for these. They can cause adverse effects on the environment.
- **Prohibited Activities:** These activities cause unacceptable environmental effects and must not be undertaken under any circumstances.

Table 4.5 Quality of the surface water at the Manawatu Catchment from 5 to 15 years (Source: Manawatu-Wanganui Regional Council)

Within five years	• water with dissolved oxygen and temperature levels healthy for fish • the catchment will be free of discharges that cause oil or grease films, scum or foam on the surface; colour changes; bad smells; or water unfit for farm animals to drink; or that damage aquatic life.
After five years	During the periods of low flow • Water clear enough for swimming, fishing, boating and other contact recreation • Acceptable levels of fungal slimes and bacteria
After ten years	During periods of low flow • Significantly reduced risk of infection to water users • No adverse effect on aquatic life from organic matter deposited on the beds of rivers
After fifteen years	• No reduction in water quality from point source discharges • Fewer aadverse effects on water from farm runoff and stock access to rivers • Less sediment deposited in rivers • Water quality compatible with values held by the tangata whenua

WATER QUALITY MONITORING

Water quality monitoring data from the Manawatu River show that the scale of nutrient contamination increases with the increased river flow. At Palmerston North, the standard for dissolved reactive phosphorus is often breached when flows are higher than half the median flow. This contamination is believed to be caused by increased overland flow following rainstorms. Point source discharges affect water quality less than non-point source discharges at these times because they are diluted by the increased flow (Manawatu-Wanganui Regional Counci, 1998).

Degraded water quality reduces the life-supporting capacity of the water body, and its actual or potential uses and instream values. The recreational values and aquatic habitats of many of the rivers in the Manawatu catchment have been adversely affected by poor water quality, in particular the lower Manawatu River (van Essen, 1995). For the purpose of contact water recreation, the Plan aims to achieve the following water standards in the Manawatu:

- contaminants must not make the water unsuitable for bathing
- the horizontal visibility shall be 1.6 metres or greater
- slime growths in mats or plumes shall not be visible
- organic matter shall not exceed 5 g/m average concentration
- median concentration of enterocci shall not exceed 33 per 100 ml.
- Periphyton mats shall not exceed 40% cover on stram beds
- The average concentration of phosphorous (DRP) shall be less than 15 mg/m

c. Riparian management

Improving conditions in streams and rivers through riparian management is consistent with the aims of New Zealand's resource laws. Riparian management is an important tool for resource users and managers to meet the obligations under the Act. One of the solutions to achieving sustainable land use is to harness the natural abilities of riparian zones to absorb excess nutrients and to process waste materials before they enter

watercourses. This provides the opportunity to manage zones for the benefit of the river system while still allowing productive use of the land and, potentially, the development of alternative forms of income (e.g., agro-forestry), not to mention recreation. In addition, riparian zones strongly influence life in streams and rivers by providing shade and food and are often unique habitat in their own (Department of Conservation, 1995). Box 4.1 enumerates the importance of riparian zones while Figure 4.9 shows the cross-section of a well-structured riparian zone showing diverse vegetation and physical relief. This zone affects the river or stream in a number of beneficial way. Human manipulation of the channel and its vegetation to increase these benefits forms the basis of riparian management (Department of Conservation, 1995).

BOX 4.1

Why riparian zones are important

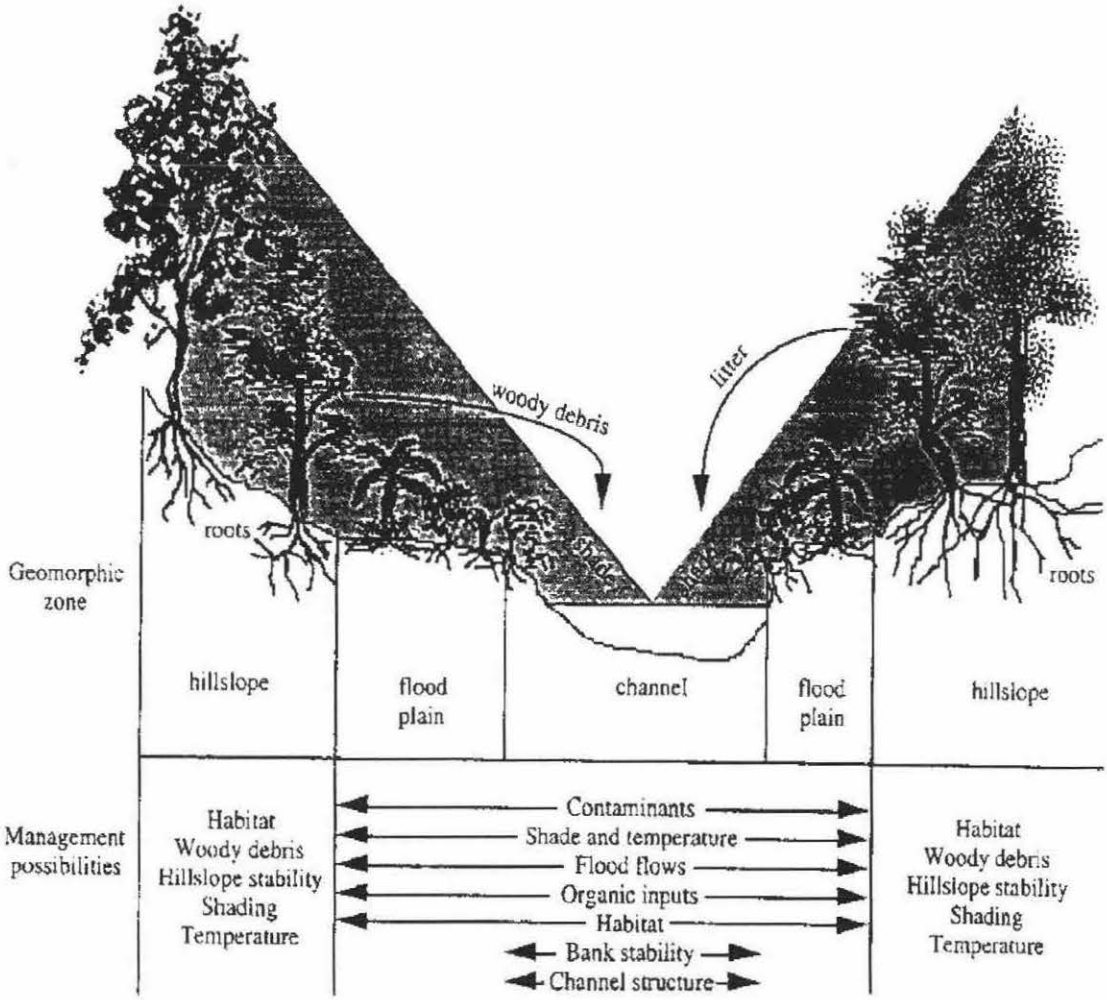
- riparian zones are three-dimensional zones of direct interaction between terrestrial and aquatic ecosystems (Gregory et al. 1991).
- Appropriate changes to the management of riparian zones can be a very effective means of reducing the impacts of catchment development on watercourses while still maintaining production.

Because riparian

- ones occur where major ecosystems – aquatic and land-based meet, they provide habitats not found elsewhere which are important for the survival of a number of native plants and animals.

The ecological functions that riparian zones can perform and the in-stream benefits that might accrue are summarised in **Table 4.6**. Since physical and natural circumstances are important for some forms of recreation, especially those that utilise water or the river environment as a backdrop, the care of water resource is of great importance.

Figure 4.9 Conceptual diagram of a stream and its riparian area showing geomorphic zones and management possibilities



Source: Department of Conservation, 1995

Table 4.6 Summary of riparian zone functions that potentially buffer streams from various land use effects

Riparian zone function	Potential in-stream effects
• buffers banks from erosion • buffers channels from localised changes in morphology • buffers input of nutrients, soil, microbes and pesticides in overland flow • denitrifies groundwater • buffers energy inputs • provides in-sream food supplies and habitat • buffers floodflows • maintains microclimate • provides habitat for terrestrial species • maintains dispersal corridors	• reduces fine sediments levels • maintains water clarity • reduces contaminant loads • prevents nuisance plant growths • encourages growth of bryophytes and thin periphyton films • maintains lower summer maximum temperatures • increases in-stream habitat features and terrestrial carbon inputs • maintains food webs • reduces floodflow effects • increases biodiversity

Source: (modified from Quinn et al. 1993)

As Table 4.6 shows, appropriate riparian management would reduce bank erosion, nutrient inputs and maximum water temperatures. The dappled light filtering through riparian vegetation to small streams would deter algae and aquatic weeds from proliferating. A biological community would develop in which thin algal layers on stones and leaves from riparian plantings provide food for a diverse community of aquatic insects which, in turn, provide food for fish and birds. Wood, fallen from riparian trees and retained in stream channels, would reduce substrate movement and increase the habitat available to fish. A diverse terrestrial fauna would colonise planted riparian areas, utilising the foods supplied by streams and rivers, and using the riparian zones as corridors for movement up and down catchments. Plantings of appropriate native species would provide habitat and lead to an increase in native biodiversity (Department of Conservation, 1995).

The limitations of riparian management

Improving the riparian management is a long-term task requiring investment in effort and materials. It may take many years for the benefits of riparian management to become apparent, especially when initially few landowners within a river system will adopt this approach advocated here. In this situation results will be achieved locally

before they are noticed on a wider scale. There are limits to what riparian management can achieve. Realistic targets need to be set, especially in water quality management. It is also wrong to treat one target in isolation from the rest. Limited success in one area can be compensated for by unexpected success elsewhere. Small steady improvements in how the river and stream banks look have added capital value to many a property. In the case of this research study, a good riparian management project will enhance the landscape or environment of the Manawatu River, as well as improve the quality of leisure and recreation aspired for by river users, and encourage others to engage in more passive or active forms of recreation along the river.

Importance of riparian vegetation

- using riparian zones for the rehabilitation of in-stream ecological values and improvement of water quality depends primarily on effective management of riparian vegetation.
- The influence or riparian zones is much larger than would be expected from their size relative to the rest of the catchment.

Riparian zones can influence channel and bank stability, contaminant and nitrate levels reaching water course, light climate, water temperature, the type and amount of terrestrial carbon inputs to streams, the duration and magnitude of floodflows, and habitat for aquatic and terrestrial plants and animals. Vegetation is the easiest riparian attribute to manage.

Importance of water course size

- Riparian management will generally exert a relatively larger influence on stream functioning when carried out alongside small streams than it will alongside large lowland rivers.

- Improvements in lowland rivers are often achieved through riparian management upstream.

The influence of riparian zones on adjacent watercourses declines as watercourse size increases. This is a fundamental premise of the River Continuum Concept (Vannote *et al.*, 1980). Riparian zones along larger streams and rivers consist of two distinct parallel bands separated by the channel itself. In small, well-vegetated streams a functionally

continuous canopy usually exists over the channel. As stream-bed area increases relative to the extent of overhanging vegetation with distance downstream, light penetration increases, and thus may lead to greater in-stream production by aquatic plants and higher water temperatures.

The production of aquatic plants such as algae in small streams is supported by nutrients arriving from the land. As a river system grows in size the recycling of nutrients already in the system becomes more important. Similarly, the relative importance of terretrial carbon inputs (leaves, plants and animal detritus) to the production of invertebrates and fish usually declines with distance downstream. An exception to this is where there are extensive lowland riparian swamps. Many of the conditions prevailing at a particular site along a river will reflect the processes occurring upstream. Thus, influencing lowland rivers through riparian management often requires that conditions upriver are managed. For instance, lowland river substrates are partly influenced by the erosion and transport of soils from upriver, and river temperatures can be influenced by riparian shading upriver.

Managing the light climate in a river reach requires management of the immediately adjacent riparian zone, however. Riparian zones along large rivers also provide important cover and habitat for fish and birds. Watercourse sizes are frequently referred to throughout this plan in terms "stream order". According to Strahler (1957), a first order stream is the smallest tributary of a river system with permanently-flowing water. A second order stream is formed by two first order streams coalescing, a third order stream is formed when two second order streams merge, and so on. When a second order stream flows into a third order stream, the receiving stream remains third order (Department of Conservation, 1995).

CONTROLLING THE RIVERS

River control works or flood control schemes may directly or indirectly affect recreation on or along the river. This was illustrated in Figure 3.8 in Chapter Three where sloped landform blocks views and creates spatial edges. In some other way, however, river control improves the viability and profitability of a district well beyond areas of land rated for, or benefiting from, scheme works (Evans, 1984). In New Zealand, catchment authorities have responsibility to provide this solution in the form of flood protection with flood control works. The most obvious of these is the use of *stopbanks* to physically confine the river, although this is only one of a number of means available. Depending

on the particular circumstances, an authority may improve the river's channel, construct flood gates, or practise soil and water conservation in the upper part of the catchment to inhibit the run-off of water into the river. The choice of method will be partly influenced by records of such things as previous flood, the duration and intensity of storms, and the heights floodwaters have reached in different parts of the river catchment.

Horizons.mw manages a large network of monitoring stations, river control schemes and flood protection systems. The lower Manawatu catchment is protected by the largest flood control scheme in the region. The scheme protects a total of 280 square kilometres of the Manawatu Plain, including much of Palmerston North, from flooding. The recent upgrade in protection for the city secures it from an event with a predicted recurrence of over one in 1000 years. Smaller schemes provide flood protection and erosion control in the upper catchments. Conditions in the Manawatu catchment have been relatively benign in recent years, particularly in respect to rainfall. Should rainfall patterns return to those experienced almost 50 years ago, prior to the inception of the schemes, protection works and flood control measures my repay their investments.

Stopbanking

Stopbanking is the most efficient and economical way of protecting flood-prone areas adjacent to many New Zealand rivers. This is especially true in urban areas like Palmerston North where the value of the protected assets is very high relative to the cost of stopbanks. Banks are constructed to provide a channel capable of carrying the design flood without being over-topped. This usually means setting them well back from the banks of the river, otherwise they might need to be excessively high to carry the required flood.

Prohibited activities on or along stopbanks

Stopbanks are not immune from damage in the event a flood and, apart form the risk of being over-topped, they can also fail in other ways. They may be weakened by seepage, for example, or they may be eroded because they are insufficiently protected. It is important to ensure that livestock, if they graze on stopbanks, are not permitted to denude them of vegetation. Horse riding along the stopbank may be prohibited. Access to stopbanks by vehicles such as motorbikes and cars is also usually limited because of the risks of damage. If stopbank is known to be vulnerable to damage from floodwaters at certain points, short, spur groynes constructed of earth or shingle are

sometimes constructed out from the bank to break up the river flow at appropriate intervals.

Figure 4.10 A typical stopbank cross section (a normal 'defence against water' structure)

TYPICAL STOPBANK CROSS SECTION

Other guidelines concerning stopbanks

These guidelines are not part of the BRL Rule 23 (see Appendix Thirteen) but are intended to indicate the type of structures, fences or planting that may be permitted in those areas covered by BRL Rule 23. Generally the greatest concern is with structures, fences or planting in that area that will impede floodwater. Horizons.mw (1995) gives the following guidelines:

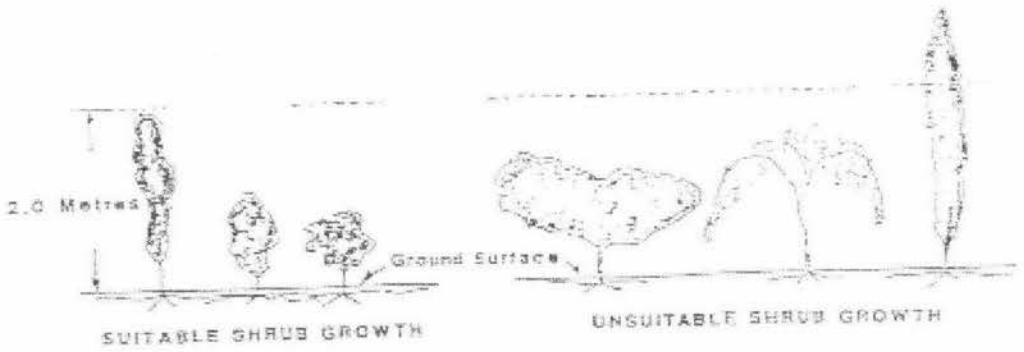
1. **Trees** should not be established on stopbanks, terrace, slopes or the top edges of terraces. Trees can severely damage a stopbank, terrace slope or the top edge of a terrace, if they are uprooted. This can allow erosion to commence on the water side of a stopbank or terrace slope. Trees on top of stopbanks, if uprooted, could lower the stopbank, possibly below the design flood level. Trees on the land side of the stopbank if uprooted can intercept the seepage path and cause stopbank collapse. Trees on stopbanks and terrace slopes, or even in the close proximity to them, can encourage the development of seepage paths along the root zones.

2. **Shrubs.** Permission will generally be given for the planting of shrubs on stopbanks or terrace slopes, which **do not** grow taller than two (2.0) metres (Figure 4.11). It is imperative that shrubs be of shallow rooted species. They may be used to provide a dense ground cover but branches and foliage should

not extend beyond their root area. It is essential that bare ground, without roots to hold the soil together, is avoided on stopbanks or terrace slopes. Bare ground can lead to erosion and damage. Shrubs should be grown with their root systems interlocking or with a solid sward of grass.

3. In the area between the inland toe of any stopbank or top edge of any terrace or bank and a line 8.0 metres from the inland toe of any stopbank or top edge of any terrace or bank, both trees and shrubs may be planted. Very large trees with a deep rooting system should be avoided as such trees may interfere with the design flood seepage path. Garden centres and nursery personnel should be consulted on trees most suitable for sites where deep rooting habits are to be avoided.

Figure 4.11 Suitable and unsuitable shrub growth



4. In Palmerston North, many stopbank areas are difficult to mow, hence a neat sward of grass cannot always be maintained. Owners or occupiers may wish to use another form of planting cover on a stopbank. Any planting cover should have strong roots that can cover the stopbank surface in the same manner as grass. Bare patches or areas without root protection on the stopbank must be avoided. Garden centre and nursery personnel should be able to assist with plant materials suitable for stopbank sites.

5. **Steps** on a stopbank may be permitted if they are not excavated into the top or land side of the stopbank. Steps on the water side of a stopbank or terrace slope should be cut (excavated) into the stopbank or terrace slope so that they do not reduce the integrity of the stopbank or terrace slope or impede the

movement of the floodwater. Steps should be constructed of permanent material like concrete.

6. **Fences and hedges**, on a terrace slope or the water side of a stopbank, should be constructed or planted in such a manner that water can flow though them, i.e. they must no be an obstruction to the movement of floodwater flows parallel to the fence. Concrete block, brick or reinforced concrete walls will not be permitted as they could operate as groynes thus deflecting floodwater or causing downstream scour.

7. **New structures and Fill.** Only in exceptional circumstances will new structures be permitted on a stopbank or terrace or within that area defined by a line 0.3 metres from the inland toe of as stopbank or top edge of a terrace or bank. If an owner or an occupier wishes to erect a retaining wall some distance away from the inland toe of the stopbank and fill between the wall and the stopbank, the wall and filling may be permitted under the following conditions:

    a. the wall and filling will only be on the land side of the stopbank;

    b. the new fill must be placed using material and methods which will be outlined in the 'Regional Council' consent, generally:

        (1) the new fill must not have a slope greater than 1 to 2 (this means one metre gain in height for every two metres of horizontal distance, in any direction); and
        (2) the wall will need to be properly designed and able to resist the loading due to saturated fill and saturated ground under the wall (the 'Regional Council' may require a Registered Engineer's certification of the wall).

CONCLUSION

The whole chapter can be summed up by this definition of resource management by O'Riordan (1971:19) that encompasses all the aims and objectives of this thesis. He defines resource management as '*a process of decision-making whereby resources are allocated over space and time according to the needs, aspirations, and desires of man within the framework of his technological inventiveness, his political and social institutions, and his legal and administrative arrangements.*' He argues that the emphasis in resource management should be 'upon flexibility and minimisation of long-term environmental catastrophes, like the river engineering schemes done along the Manawatu River (e.g., stopbanks), while maximising net social welfare over time'. O'Riordan (1971:19) says that resource management is 'becoming increasingly concerned with the protection and enhancement of environmental quality and the establishment of new guidelines for the public use of such common property resources as air, water, and the landscape'.

The chapter has demonstrated that legislations and plans controlling the character of the river, water quality and the nature of river margins have substantially limited the nature of recreation on and beside the Manawatu River. Recreation activities are often not explicitly provided for in plans, especially where river access is required in areas that may be affected by floods, stopbanks and other legislative requirements for safety and protection purposes.

Chapter Five presents the results gathered through interviews and the use of questionnaires from local authorities and river users/recreationists. The next chapter aims to analyse the issues and challenges faced by local authorities with regard recreation provision at the Manawatu River, and explore the perceptions and priorities of stakeholders regarding the recreational use of the Manawatu River.

CHAPTER FIVE

RESEARCH RESULTS

"Urban public space is the single most important element in establishing a city's livability. A centrally located public space can function as the "heart" of the community, generating positive energy and a sense of membership."

- Henry and Suzanne Lennard, in 'Livable Cities Observed.'

This chapter presents the findings from the research investigations and responds to Objective Two set out in Chapter Two of the research study. The findings are presented in two main parts: interview with local authorities comprises the first part, and interview with the river users/recreationists, second. Figure 5.1 shows how the gathering of information was conducted and achieved for this purpose.

The Department of Conservation (DoC) is no longer a key interviewee as planned because the Conservancy has advised that it is not actively involved in river management although there are some reserves along the river. However, the DoC is happy to delegate land management issues to local authorities.

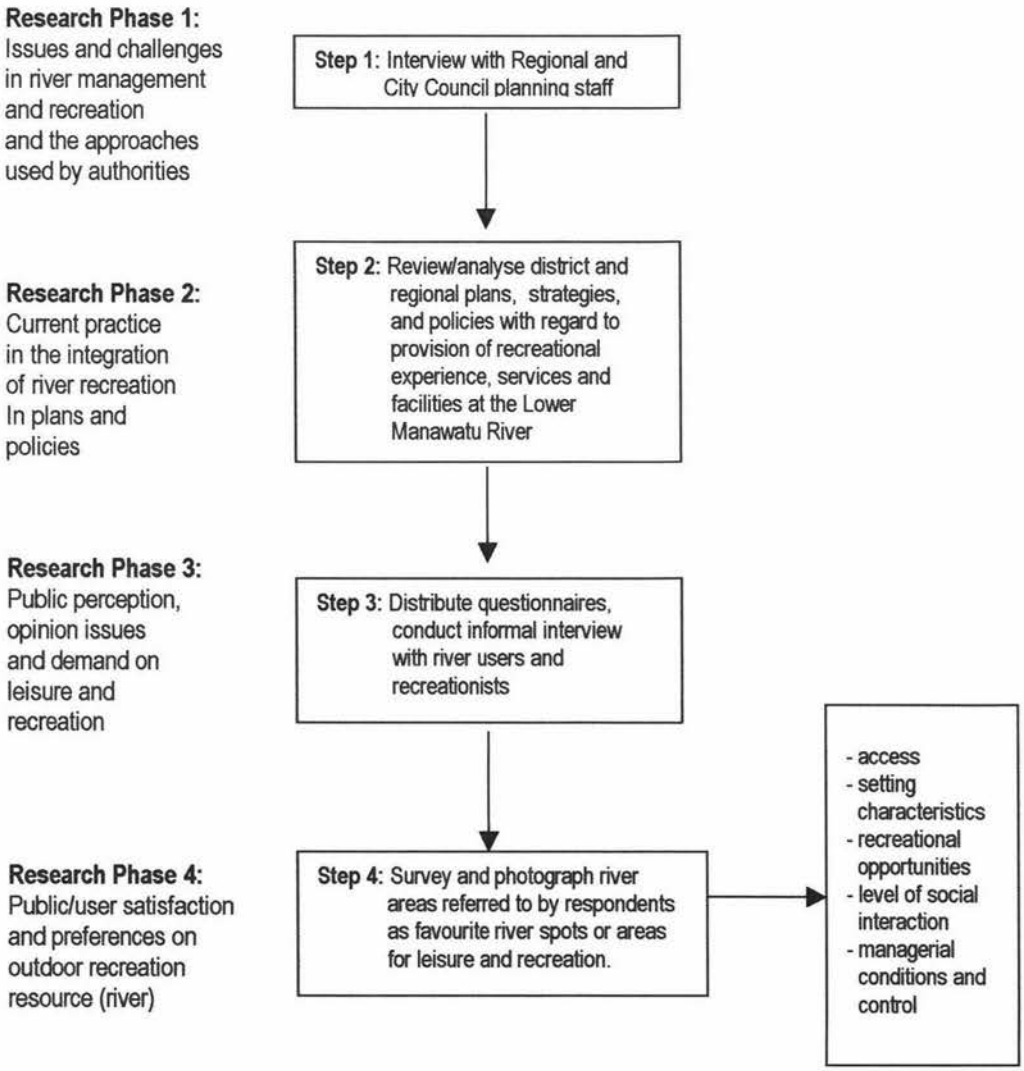
The findings are presented under several key headings. The headings follow the sequence of questions that were asked in the interviews with local authorities (see Appendix 1), and adhering to the procedures layed-out in Figure 5.1 for the gathering of other significant data and information

Phase One:

Involves interviews with local authorities and review of plans and strategies adopted by government providers for leisure and recreation purposes and aims to explore and examine –

- The degree to which leisure and recreation programmes, particularly those that utilise the Manawatu River and its environs are taken into account and integrated in plans and strategies by both City/District and Regional Councils;
- To identify the current practice and/or pattern on the provision of recreational opportunities at the Lower Manawatu River;
- The process and/or level of interaction and coordination between or among agencies and authorities concerned that affect leisure and recreation provision;
- The level of public involvement and participation in plans and strategies in the recreation planning process, and;
- The issues and challenges faced by recreation service providers in improving and enhancing recreation experience and opportunities for the public using the river environment.

Figure 5.1 Procedural framework in gathering of data



Phase Two:

Employs interviews with river users and recreationists at the Lower Manawatu River the purpose of which are –

- To the identify the river users and recreationists in terms of age, sex, status and membership to clubs and organizations;
- To find out reasons why people recreate along the river and its environs, the users' preferences and needs that affects and relates to their leisure and recreation in the study area;
- To identify current patterns of use from which constraints and opportunities to leisure and recreation can be established, as discussed in Chapter One;
- To provide suggestions that can be incorporated in the recreation management of the Lower Manawatu River by concerned agencies/department that contributes to better policy and practice in river management and development.

To facilitate the gathering of information, the research investigation is divided into four phases (refer to Figure 5.1), and is hereby presented in Table 5.1 for easy reference.

Table 5.1 The information-gathering process

	Activity	Target	Objectives
PHASE 1	**Interview**	Planners, policy makers and the head of the River Users' Advisory Committee from the Manawatu-Wanganui Regional council, otherwise known as *Horizons.mw*,; Planners, policy makers, recreation and project officers from the Palmerston North City Council.	(1) To get the type of approaches and current management practice/s adopted by government authorities regarding recreation and other related issues and concerns; (2) To investigate the degree to which leisure and recreation programmes, particularly those that utilise the Manawatu River and its environs are taken into account and integrated in plans and strategies by both City/District and Regional Councils; (3) To identify the current practice and/or pattern of recreational opportunity provision; (4) To identify the process and/or level of interaction and coordination between or among agencies and authorities concerned that affect leisure and recreation provision; (5) To investigate the level of public involvement and participation in plans and strategies in the recreation planning process, and; (6) To identify issues and challenges faced by recreation service providers in improving and enhancing recreation experience and opportunities for the public using the river environment.
PHASE 2	**Review/analyse**	Regional and district plans, policy statements and strategies	To investigate the inclusion of issues, concerns, activities and programmes regarding leisure and recreation and the measures employed especially those that relate to the utilisation of the Manawatu River;
PHASE 3	**Distribute Questionnaires** **Informal interviews**	River users and recreationists (i.e. walkers/strollers, joggers, bikers, kayakers, canoeists, picnickers, etc.)	(1) To identify the current practice and/or pattern of recreational opportunity provision; (2) The process and/or level of interaction and coordination between or among agencies and authorities concerned that affect leisure and recreation provision; (3) To investigate the level of public involvement and participation in plans and strategies in the recreation planning process, and; (4) To identify the issues and challenges faced by recreation service providers in improving and enhancing recreation experience and opportunities for the public using the river environment.

PHASE 4	Photo-shoot	Favourite river areas	(1) To analyse the setting characteristics preferred by river users/recreationists; (2) To identify areas that need certain facilities and/or services to enhance river environment and make the leisure and recreation experience more pleasurable (i.e. new or better access for both people and vehicles, better walkways, park benches and tables, barbecue areas, vehicle access and others); (3) To identify river areas that recreationists believe need or require protection, maintenance, enhancement or development to widen or increase recreational choice and opportunities, and; (4) To identify river areas where recreationists prefer to be preserved and to remain undeveloped due to its 'naturalness' or visual quality.

Phase 1:

As mentioned in Chapter Three, local authorities are by far the principal providers of leisure, and that planning for leisure is treated as a minor, and not of central importance in many authorities. Information is gathered through interviews with planners, policy makers and the head of the River Users' Advisory Committee from the Manawatu-Wanganui Regional council, otherwise known as *Horizons.mw*, as well as interviews with policy makers, planners and recreation and project officers from the Palmerston North City Council, as reflected in **Table 5.1**. As previously mentioned, Phase 1 also aims to get the management perspectives and the type of approaches adopted by government authorities regarding recreation and other related issues and concerns;

Phase 2:

Review of regional and district plans and policies to investigate the inclusion of concerns, issues, activities and programmes regarding leisure and recreation and the measures employed especially those that relate to the utilisation of the Manawatu River' environment. This phase also examines how river engineering works and flood control schemes affect the pursuit of recreation at the Lower Manawatu River' and if these matter have been considered by the local authorities.

Phase 3:

Distribution of questionnaires, combined with informal interviews with river-users, outdoor-recreation groups and residents living near the river. It seeks to identify the

types of constraints to leisure and recreation as discussed in Chapter One of the research study.

Phase 4:

Preparation of photographic records of river areas that the respondents had referred to as:

- their favourite spots;
- needing certain facilities and/or services to enhance and make the leisure and recreation experience more pleasurable (i.e. new or better access for both people and vehicles, better walkways, park benches and tables, barbecue areas, vehicle access and others);
- river areas that recreationists believe need or require protection, maintenance, enhancement or development to widen or increase recreational choice and opportunities, and;
- river areas where recreationists prefer to be preserved and remain undeveloped due to its 'naturalness' or visual quality.

The author mentioned in Chapter 3 that there are tremendous opportunities to better understand the 'recreating public' aside from providing facilities for recreation. These steps will be of help in coming up with suggestions and recommendations for better management of the Lower Manawatu River and its environs employing the concepts of the Recreation Opportunity Spectrum and Landscape Planning approaches as discussed in Chapter One.

INTERVIEW FINDINGS:

Regarding use of specific planning approaches for integration of recreation in plans and policies

The first question in the interview specifically asked what type or types of approaches are employed by the authorities concerned should programmes and concerns about recreation are dealt with and considered during the preparation of annual plans and strategies either for the City or the Region, and particularly those recreational activities that utilise the city or the region's parks and reserves, especially that of the Manawatu River. The interviewee responses are recorded, with local authorities revealing the use of the consultation-dialogue approach.

Wall (pers. comm., 2001; PNCC) says part of her job is to monitor the city in terms of its recreational needs and to work on specified projects in which the Council and City has identified as being crucial and provide better recreational opportunities. The monitoring is done through a Recreational Plan that helps them set the vision for the projects wherein they work with community groups and monitor them with the key indicators they have developed in the Plan. Another method used, according to Wall, is by way of a response mechanism by way of people approaching the Council and giving their opinions and with the Council responding appropriately to them. For example, the Festival Manawatu held last year received good feedbacks from the public that they plan to hold it again this year. Wall (pers. comm., 2001; PNCC) states they plan to adopt a more 'pro-active' than the presently 'reactive' position they have in dealing with the public.

As shown in Table 5.2, none of the approaches listed are applied by the majority of the interviewees. Wall and Roberston (pers. comm., 2001; PNCC) and Harris, Quayle, Taiepa, Murfitt and Philips (pers. comm., 2001; Horizons.mw) gave descriptions how dialogues and consultations with the public which often happens informally particularly with recreation groups, are conducted. The only formal methods used to determine users' aspirations are 'submissions' and 'workshops' that enabled officers to obtain information to be included in the plan or strategies. There are also instances wherein the public sends in letters, phones-in, or drops by the City or Regional Council to give suggestions or lodge their complaints with regard recreation services or facilities. The officers also have the impression that the constituents still lack awareness about the specific functions and responsibilities of the local and regional councils. This results to both the PNCC and Horizons.mw receive suggestions and complaints that often does not concern them, or fall under their function or jurisdiction. Most of the interviewees say this often put them off-guard in dealing with the public, and this according to the authorities can sometimes get very frustrating on their part.

Table 5.2 Type of approaches that can be applied in dealing with recreation provision and in managing recreation resources

TYPE OF APPROACH	AGENCY	AGENCY
	Palmerston North City Council	Manawatu-Wanganui Regional Council
RecreationOpportunity Spectrum	×	×
Ecological Planning Approach	×	×
Landscape Planning Approach	×	×
Visitor Impact Management (VIM)	×	×
Visitor Impact Management Process	×	×
Interpretative Planning	×	×
Others (Strategic Planning*)	✓	✓

Key: ✓ - employed ; × - not employed

* In this thesis, it is assumed that the authorities concerned uses strategic planning in preparing their annual plans and policy statements based on the documents reviewed, but recreation was only a component or a small part of the whole plan and strategy, thus, interviewees could not identify or discuss as to the type of approach used in dealing with recreation provision and other related issues.

Quayle (pers. comm., 2001; Horizons.mw) narrates a historical perspective of the Manawatu River in connection with the early river users. He relates:

"...there was no organised process for the allocation of the competing resources in managing the Manawatu River, and there were some quite serious applications on the banks of the river between fishermen and water skiers, or some canoeists, and it became quite serious at the local level, and one of the councillors then said 'it is necessary that we've got to get together and sort something out', and so this committee was formed (referring to the Manawatu River Users Group) and has operated ever since and has become the practical representatives of all the recreational groups that use the river like the jet boaters, water skiers, hunters, fishermen, canoeists and triathlon groups and all those groups represented. They meet twice a year, they have a program of

main events in some year. This happened 20...31 years ago and have been sort of informal for some time and the current status of this group is a...committee of councillors...there's a subcommittee, I guess it's called the Manawatu River Users' Association (MRUA)."

The Manawatu River Users' Association (MRUA) is now incorporated in the organizational structure of the Manawatu-Wanganui Regional Council. Under the present structure, the MRUA is now known as the Manawatu River Users' Advisory Committee chaired by a regional councillor, with a harbour master functioning as a reporting officer and is composed of six members. Councillor Garry Murfitt who has headed the Committee for the past 12 years says they meet twice a year, and the group may hold other meetings as the need arises. The advisory committee serves to discuss recreational issues and to coordinate formal recreational activities on local rivers. A river users 'calendar of events' is normally prepared to prevent differing sports bodies from competing for the same stretch of river. A particularly successful project undertaken by a past member of the MRUA was the establishment of the Manawatu riverbank walkway and bridle track(MCB & RWB Report No. 67, 1985). The riverside walkway currently extends from Maxwell's line to Riverside Road.

Murfitt (pers. comm., 2002; Horizons.mw) says that at present, there are 18 river wardens that are spread over throughout the whole river system granted with 'police powers' whose job is to educate people about the proper use of the environment, and try to settle conflicts that may arise from river users. These river wardens are hand-picked by the regional council who are known as responsible and ordinary members of the community and are considered as a part of the organization of Horizons.mw. Five of the fourteen river wardens are part-time employees of the regional council, while the rest are in voluntary basis. From this interview, it was learned that there are no river wardens patrolling the stretch of the Manawatu River in Palmerston North. Councillor Murfitt also disclosed that there had been a few occasions when some river wardens turned 'overzealous' in doing their jobs that people have actually complained about them. This was dealt with by employing disciplinary actions or talking with the river warden in question.

In Chapter Three, McDermott and Forgie (1999) categorise the responsibilities or services provided by government agencies into *physical infrastructure* (i.e. roads, water, solid and liquid waste collection, treatment and disposal) and referred to as services to property, and *social infrastructures* that cover those activities that directly benefit

residents or citizens, rather than property owners. Both authors state that the provision and maintenance of sporting and cultural facilities clearly falls into this category, together with any community development programmes, and presumably includes recreation services and facilities, which are provided entirely and operated by city/district councils.

Under the Resource Management Act, regional and district councils share responsibilities for land management, which means their functions and management approaches must be complementary to achieve the purpose of sustainable development. Another example where complementary functions must be adhered to by both agencies concerned has something to do with water quality. The city/district council has to ensure that solid wastes are properly disposed to prevent groundwater contamination and treatment of liquid wastes so as not to cause contaminated water run-off to rivers and lakes, while the regional council complements this by undertaking the chemical spraying and mechanical clearance of drains, maintenance to other various drainage structures and other general maintenance. Improving the water quality of rivers encourages contact water sports that increases the opportunities on water recreation.

From the interviews conducted, it is evident that both regional and city council authorities have a good understanding of their specific responsibilities. Obviously, both the regional and district/city councils try to work closely together since many of the responsibilities and services may have a direct or indirect influence on recreation provision and services. It must be noted that regional councils are mandated by law to ensure that the physical and natural resources of their respective regions are sustainably managed (RMA, section 7). For example under section 87 of the Act, the City Council needs the consent and approval of the Regional Council prior any construction of any infrastructure (e.g. new or additional walkways, new parking spaces, a gazebo) near or along the riverbanks. Even a slight alteration or clearing of a small portion of shrubs along the riverbank to provide, for instance, an access down the river has to be first given clearance by the Regional Council, not unless any of these activities do not contravene regional plans under section 20 of the Act.

Level and nature of interaction with other agencies/departments

The second question aimed to determine how the authorities/agencies concerned liaise with other agencies/departments to achieve management objectives, and to the extent

community recreation needs are discussed or considered. Firstly, the research needs to identify the type of process and the degree of interaction and coordination that takes place between agencies concerned. Secondly, examine the integration of recreation objectives in their management plans and strategies about other matters.

A very good example to indicate the limited, or even non-communication and coordination between the PNCC and Horizons.mw relates to the Green Corridors Project being implemented by the PNCC aiming to improve and enhance the amenity, aesthetic, recreational and ecological objectives of the city in order to provide for richer, more diverse and more useful urban spaces. When asked if this is being done in partnership with Horizons.mw, Viles (pers. comm., 2001; PNCC) implies that this is purely a council project. It was discussed in Chapter Three that the regional council has a similar function concerned with improving riparian margins along rivers and streams.

Mori, (pers. comm., 2001; PNCC) believes that liaison with the regional council rarely happens, except when there are big projects to handle and a working committee is created where a representative from the regional council may be required. Blythe (pers. comm., 2001; PNCC) and Quayle (pers. comm., 2001; Horizons.mw) both observe that liaising often occur only during the submission process, but Blythe appears to presently deal more often with the regional council as part of her duty with regard to the proposed designation of new stopbanks within the urban city of Palmerston North. Harris (pers. comm., 2001; Horizons.mw) says liaison occurs between the two agencies if there are joint issues to be discussed. On the other hand, Philips (pers. comm., 2001; Horizons.mw) states that there are actually no regular meetings that occur between the two agencies, but in the case of higher government departments, there are some instances that they may rely for some technical advise, information, guidelines or tools for dealing with particular issues, for example with the the Ministry for the Environment. Their dealings with the Department of Conservation only occur if a specific issue will come up, like for example, one that relates to issues about water quality. Liaison with the City/District Council, the Fish and Game Council or the Department of Conservation, Philips adds, usually happens only when an issue arises that need to be discussed. The impression created from this interview seems to imply that communication or coordination with the agencies previously mentioned is limited and uncommon, and coordination with other agencies or departments are more often issue-based or issue-focused. All local and regional authorities interviewed expressed the same views and opinion.

Level of public input, participation or involvement and awareness of the public

The aim of the third question is to find out the degree of public involvement or levels of concern about issues and services that directly or indirectly affect recreation activities, particularly those that occur close to or within the environment of the Manawatu River as defined in Figure 3.5 in Chapter 3. The interviewees in this question gave interesting and varying responses, which will be discussed later in this chapter. It is evident, however, that the interviewees cannot pinpoint any specific or common needs or issues raised by the recreating public. This reflects and aids in measuring the level of participation and involvement given to the public in the making and preparation of plans, as well as the degree of awareness and kind of perceptions the authorities have of what the public wants to improve and enhance their recreation experience.

Referring to the current PNCC Recreational Plan, Mori (pers. comm., 2001; PNCC) said that very little feedback was received from the community. Although the Plan was advertised, the public appears to have few adverse comments regarding the Plan. When asked if the Plan actually contains the people's expressed needs and wants regarding recreation, Mori admitted that the PNCC did not actually consult with the community extensively.

As to the amount of satisfaction of the river users and recreationists have regarding the current facilities, services and the kind of river environment provided, Burt, (pers. comm., 2001; Horizons.mw) believes the rivers users and recreationists are happy and satisfied since most issues they have raised in the past are adequately addressed. For example, compromises are often reached between the fishers group and the jet boaters with regard to scheduling their respective activities on the river. Burt, being the Harbour Master of the River Users' Advisory Group says the people are satisfied with the present river environment and the present services provided and that their only concern is the protection of the environment (eg. concern about water pollution). The regional council also provides the facilities for meetings of the river users from time to time. On the other hand, both Philips and O'Connor (pers. comm., 2001; Horizons.mw) agree that the recreationists are quite satisfied with the natural surroundings along the river based on their previous consultations. He (O'Connor) appears to personally support this view being in-charge of river engineering works and flood protection schemes along the Manawatu. On the other hand, Blythe (pers. comm., 2001;PNCC) concedes that the stopbanks do block the view of the river and kind of creates a barrier, but the stopbanks also provide a green area along the river. Foulds and Viles (pers.

comm., 2001; PNCC) agree that the river environment is not utilised and enhanced enough for recreation purposes.

Taiepa (pers. comm., 2001; PNCC) states that during previous years, there were no formal ways to really involve the local Maori in recreation planning, and at the moment the Council have no specific means of dealing with more demands for recreation. Under the new Local Government Act, there is a strong imperative to encourage Maori participation. The Council does have mainstream ways of consulting with everyone, but Taiepa says they might need some unique mechanisms to engage with the Maori community, and initiatives are now underway to achieve this. He reveals that there are about 10,000 to 12,000 people of Maori descent in Palmerston North. One of the biggest issues is about consultation. He is trying to further improve the consultation practice by involving the Maoris (eg. consulting with them in the early stages of the scoping or development of projects) and he cites the City Square development where there is a lot of Maori involvement. When asked what kind of issues are often brought up by the local iwi to the PNCC, Taiepa says many concerns have something to do with resource management issues, like concerning water pollution and water quality at the Manawatu River.

Knowing the spiritual and cultural values that the Maori have for rivers, this researcher is interested to find out if Maori would not mind seeing any development along the river to improve and enhance recreational opportunities. Taiepa (pers. comm., 2001;PNCC) expressed the views of the Maori people, especially the Rangitane which is the local iwi in Palmerston North, and he said:

"There's a perception that Maori are anti-development. Some people say there's a bit of contradiction in terms of Maori wanting to protect the environment, but also wanting to utilise it but I suppose the position I'd say is that Maori is protecting the environment so that they can utilise it so it keeps feeding them, it keeps supporting them. So there's no concern about development as long as Maori are actively involved and as long as they get to have their interests recognised and expressed in some way. I think they'd like to see more economic opportunities associated with the river, like for example, they see tourism as a real possible area of development."

As to the question who among the river users or recreationists is the most vocal when it ocmes to expressing their concerns, both Philips and Murfitt (pers. comm., 2001;Horizons.mw) say:

"In terms of recreation groups, probably the Fish and Game Council would be the most active stakeholder interested in the quality of the river. We don't have a lot of interests coming from recreational groups like the canoeing clubs, for example. Generally the Fish and Game Council or rate payers residential groups, and they are also concerned about contact water recreation."

Quayle (pers. comm., 2001; Horizons.mw) considers that among river user groups, the white-bait fishers are the most misrepresented because this group is not formally organised, and other members belong to other groups that represent other interest (eg. Royal Forest and Bird Society). They are loosely organised, since this type of recreation is more often engaged in as an individual pursuit. Quayle also believes the people are still confused over the specific functions of the District and Regional Councils, and what these agencies can do for them. He reveals the reason why the regional council decided to change its name and adopt the label ***Horizons.mw*** to distinguish it from the City Council.

Issues and concerns that affect recreation at the Manawatu River

Concerns about water quality seems to have been the most frequently lodged concerns and complaints in the interviews expressed by individuals and several recreation groups. When asked how water quality affects, for example, recreational fishing in the Manawatu, Philips (pers. comm., 2001; Horizons.mw) says:

"We are still unsure how it affects fish but we know that there are some fish missing from some parts of the catchment but we still need to work out that's where some of our research needs to focus on. We're working out what actually causes that because there are some streams where the sewage does discharge into it where the fish are okay but other streams where there is serious discharge where the fish are missing."

According to Philips, the main sources of water pollution are the waste discharges from the urban sewage like the stormwater run-off and some rubbish that are left untreated that manage to go to the sewage and dispose at the Manawatu River. Another example of how the water gets polluted are cattles that are allowed to walk down in the streams. Some of the measures undertaken so far in order to reduce pollutants, according to Philips, is by strictly enforcing the application for discharge permits where concerned individuals or establishments are required to comply with the Manawatu Catchment

Water Quality Plan, investigate sewage upgrading treatment and getting discharges out of the river and irrigating them into land. These regulations are set out in the Plan. The permits or consents need to be consistent and the consents have conditions written on it that specifies the regulations specific to the type of discharge. He also notes that there are some areas along the river that are safe for contact recreation while there are some areas that are not. The Manawatu River is not advisable for contact recreation for approximately 20 kilometres downstream of Palmerston North sewage discharge outlet.

Quayle (pers. comm., 2001; Horizons.mw) further states:

"The farming community for example has a big effect on the Manawatu River, and it has the Federated Farmers. This is an organization that speaks for farmers...there's a relatively small percentage of farmers who belong to this kind of organization, so it's quite hard to reach everybody affected or monitor everyone's actions affecting the river, some are registered and some are not. We have to work on the awareness of farmers...we're trying to do that now."

When asked what statutory means that the Council employs in order to ensure that the water quality in the river is improved so as to encourage contact recreation, Philips states:

"Well, for the Manawatu catchment, the Manawatu Catchment Water Quality Plan is probably the main policy document that is aimed at achieving contact recreation standards by 2009. Within that plan, I have staged the requirements for the discharges to be upgraded...like for the fecal indicators to be greatly reduced...and we hope to achieve that by 2004."

The majority of respondents note that people's involvement depends on the kind of issues and the stakes they have in regard to a particular recreation issue. Harris (pers. comm., 2001;Horizons.mw) says there are people who look at the Plans, but these are only key groups that have a particular interest with regard to a certain plan, it sometimes depends on the location, and the process doesn't have to be formal.

With regard to the question as to whether plans/strategies are changed as a result of inputs from the public, majority of the interviewees gave affirmative responses. Philips (pers. comm., 2001;Horizons.mw sums it all when he said:

"I think the plans are likely to change. They have expressed some concerns...generally, for example with the Manawatu Catchment Plan, I've been very happy, they are more interested in seeing that their inputs are adhered to, but there are other issues and other plans where they have had concerns and expressed those concerns to us and we are going through a process now where we are considering all those plans that I've been talking about, and we're taking their views into account and it could result into some changes. These plans need to be on-going and that's to keep up with changes and people's views."

Means to improve flow of communication and coordination between and among government agencies/departments

As shown in **Table 5.3**, majority of the interviewees gave common responses with regard to current practice of agencies/department. Meetings or formation of a working committee only happens when a big project or issue comes up and needs to be dealt with. This reflects a more reactive response to issues and concerns rather than having a pro-active stance in dealing with issues and problems.

Table 5.3 Recommendations to improve communication/coordination of local authority actions

Interviewee	Current practice	Recommendation
Rebecca Blythe, PNCC	Hold meetings as the need or issue arises.believes there's always room for improvement and that one can't really get it 100 percent right.	Believes there's always room for improvement and that one can't really get it 100 percent right. More frequent socialization with fellow planners/policy makers through the NZPI which is a good venue to discuss work and issues in an informal, friendly manner.
Charles Foulds, PNCC	Issue-focused, this is when discussions/meetings happen between agencies.	Endeavour to foster closer working relations with Horizons.mw.
Rochelle Viles, PNCC	Issue-based, committees are then formed to discuss issues.	Same comment as Foulds.
Clare Wall, PNCC	Through meetings when a need arises.	Same comment as Foulds.
Todd Taiepa, PNCC	Meetings occur when issue arises	Doing this in a continuum of ways, just keep on informing people through dialogues and consultation; giving enough information that enables them to make concerted decision and consider what they've got to say.
Ann Marie Mori, PNCC	Depends on issues	Strengthen relationship with Horizons.mw, one way is assigning a person from PNCC to be represented in the River Users Committee.
John Philips, Horizons.mw	Lots of issues informally discussed	Regular meeting once every six months to discuss issues and concerns.
Andrea Harris, Horizons.mw	Issues informally discussed	Improve current mailing list to reach out to more people to increase awareness; not many people really know the functions of the Regional Council.
Ross Quayle, Horizons.mw	Issue-based	Get more active in community groups; staff attend more training on specialise fields and spread expertise and assign contact persons to give good information and response to individuals.
Glenn Burt, Horizons.mw	Issue-based	Provide adequate means of communication and education to the public.
Gary Murfitt, Horizons.mw	Issue-based	Increase the number of meetings and opportunities for consultation and dialogue. Keep the organizations and river users more informed of what is going on outside their activities, the plans and policies that may affect their activities in and along the river.

The last question aims to gather issues and challenges faced by the agencies or departments concerned with regard to river recreation and how they envisage to meet those challenges. Table 5.4 presents the responses by the local authorities concerned. The information is derived from interviews with PNCC and Horizons.mw planning staff. This information indicates that a variety of responses could be appropriated in dealing with issues facing both agencies in managing recreation.

The most interesting area of the research come from comments of authorities concerned regarding their views and opinions about the Manawatu River. The awareness level of most interviewees about the present state of the Manawatu River and its potential as a natural recreation resource for the City is amazing. It is therefore, noteworthy to quote their views. For example, Blythe (pers. comm., 2001; PNCC) said:

The way Palmerston North developed has turned its back on the river and we have not really integrated the river well towards how we develop our city. But we are trying to make the river more accessible to the public, more user friendly, and get more activities done there through the Festival Manawatu.

Viles (pers. comm., 2001; PNCC) thoughtfully said:

The river is not utilised enough and shown its real beauty. The city seems to have ignored our river. Lots of people, say about 500,000 a year goes to the Victoria Esplanade, but they cannot actually go down and use, or enjoy the river.

Foulds and Viles (pers. comm., 2001; PNCC) both agree when they stated:

People do want to see more access to the river, meaning, wanting to actually go and walk down the river, or drive down the river. People, especially those on wheelchairs want better access routes or walkways that are comfortable to use with regard to their condition. In fact, that's one of the major suggestions or complaints we receive from the public, more and better access points along and down the river.

Foulds and Viles (pers. comm., 2001; PNCC) also mention that the Green Corridor project they are presently involved in will definitely contribute to the improvement and enhancement of outdoor recreation experience along the river, as well contribute to improve the water quality of the river.

Table 5.4 Issues and challenges faced by agencies and the responses recommended by them

Issues and challenges: PNCC	Response to issues/challenges
Increased pressure from the public to open up river for more active forms of recreation, and how to do this without destroying or degrading the river environment;	Launch an Eco-Recreation type of programme, conduct environmental education to the public.
Provision of more or better access to the river as requested by many river users and recreationists.	
PNCC relies on goodwill of Horizons.mw in dealing with some issues, particularly on matters that affect recreation.	Endeavour to have a closer working relation with Horizons.mw to come up with new ideas and strategies regarding river access.
Statutory limitations of the PNCC to implement projects particularly along river areas.	Assign a PNCC representative in the Regional Council's River Users' Advisory Committee to gather information and updates from river users.
Recreation falls under 'nice but not necessary category' in City Plans and programmes.	Discuss and clarify some provisions that seem to appear as 'grey areas' to the PNCC with Horizons.mw with regard activities/projects that can be done within the river environment.
Financial constraints/access to funds. Recreation at times being looked at as an economic issue.	Identify priorities and link up with specific city programmes and projects that cater to the greatest number of people in the community that may directly or indirectly have an effect on recreation.
	Implement cost-efficient and cost-effective programmes and projects that will have economic returns or generate funds for the City.
Issues and challenges: Horizons.mw	**Response to issues and challenges**
access to scientific information.	Establish a central website that can be accessed nationally by government agencies and departments, particularly those that need scientific information to come up with better programmes and projects.
no central place, area, quarter or location from which to access scientific information.	
Horizons.mw do not have all the expertise in the house.	Staff training in specialised areas.
Dealing with resource management issues.	Closer working relations with concerned agencies and departments through regular meetings, workshops, environmental education.
To make good linkages between plans and policies to those activities that occur in and along the river.	Closer working relations and coordination among staff and agencies concerned

Financial constraints/access to funds. Recreation at times being looked at as an economic issue. How to better respond to people's wants and needs with regard to services.	Implement cost-efficient and cost-effective programmes and projects, ones that will have economic returns or generate funds for the Region. Continuous dialogue and consultations with the public/interest groups. Open lines of communication and consider what public say.

Philips (pers. comm., 2001; Horizons.mw) adds that people actually go down the river, like to play with the water, usually in areas where it provides them access down the river.

Quayle (pers. comm., 2001; Horizons.mw) says *"the river is a wonderful natural resource. It has provided many uses like for example irrigation... and recreation"*. He further comments that in the past, people just threw dumps into riverside dumps. Over the years, people have realised the value of the river and now favour the idea of cleaning up the river and change their ways. Mr. John Philips believes better policies or measures may be needed to deal with run-off from dairy farming areas. Major industries that dispose wastewater into the river may also need to be monitored carefully.

Taiepa (pers. comm., 2001; PNCC) gives a rather reflective point of view when he said:

In terms of what it can achieve, even people in Palmerston North have kind of turned its back to the river. Whereas you see some amazing cities in the world that have those rivers sort of flowing through them. The river is such a big symbol here...the city doesn't appear to acknowledge it. The river has a wonderful part to play in terms of the association of the people to a place. There's a concern that up to now, the river is being managed like a drain in some ways and something we use to get rid of our wastes; the stopbanks sort of keep it enclosed. The river can actually have a role in our identity...it can have some financial benefits, but I guess we have to look at it in wider ways...working on urban growth strategies, like how to protect ourselves...how to create a better and attractive environment.

I. ANALYSIS OF INTERVIEW RESULTS

Management practice and approach

The level of awareness among the staff in PNCC and Horizons.mw is high. Staff recognise the river's potential for recreation and the limitations to development. However, staff appear to focus on constraints and issues like poor water quality in the river, soil erosion and the frequently cited flooding problems. Very little analysis has been carried out to develop innovative projects and programmes that focus on the river as an exciting place to recreate. The present river management scheme of the regional council at the Manawatu River, to paraphrase Bewick (1987), seems to 'keep water away from people, rather than keeping people away from water'. The limitations of the river environment to support recreation projects is acknowledged in this thesis. But this should be the starting point in the design process - not an end in itself.

There appears also a limited liaison between agencies concerned with the river except in some specialised programmes where monitoring is required, for example water quality in the river. Sourcing of funds seems to hinder some activities and projects from being implemented. Both PNCC and Horizons.mw form ad-hoc groups to deal with issued and problems facing both agencies.

Public participation and involvement and method of preparing plans/strategies

It is evident that the current processes for involving the public (e.g. submission process, dialogue-consultations, newspaper advertisements, etc.) are not enough to generate public inputs, participation, involvement and support for various programmes and projects for recreation. Staff from both agencies observed that public participation in past meetings and consultations were quite satisfactory, but admitted that they need to come up with better strategies to involve the public to generate further interests to increase participation. Two staff from Horizons.mw had another way of looking at this. They said it somehow demonstrates the level of satisfaction of people about the services being provided, and therefore concludes that the people are quite happy and satisfied with the current facilities or services provided. Three of the interviewees acknowledge the fact that officers are more *'reactive'* than being *'pro-active'* to issues and concerns that at times raised by the community.

Most of the river users and recreationists interviewed believe that coordination between agencies concerned with river recreation planning is poor. Some note that over the years, they have heard of plans to develop the river and to make it more useful as a space for recreation for the residents but the plans have not proceeded. Many of them are still remain confused as to the functions and responsibilities of the PNCC and Horizons.mw.

II. ANALYSIS OF INTERVIEWS WITH RIVER USERS AND OTHER RECREATION GROUPS

This section identifies the issues and problems that directly and indirectly affect recreation at the Lower Manawatu River with the information coming from the filled-out questionnaires and informal interviews with a total of 105 river users and recreationists who voluntarily participated in the research-survey (Appendix Two). Only two persons declined to be interviewed. The results will be discussed in detail in Chapter 5 of this study.

The questionnaires are divided into Sections A, B and C. All three sections answer the central questions posted in Chapter Two. ***Section A*** aimed to obtain general information about the river users/recreationists, ***Section B*** gathered personal impressions, view and opinion about the Manawatu River as the City's natural resource and a place for leisure and recreation utilised by the city's residents, and ***Section C*** sought to determine the frequency of use or visit of the respondents at the Manawatu River to spend recreation time.

Section A provides general information about the river users/recreationists (Table 5.5) and indicates their age, sex, civil status, and other general information about the river users/recreationists. From this, we can see that the Manawatu River has a high number of mixed users with those from ages 21-61 as the age bracket that most utilise the river environment for their leisure and recreation. The older age group (61 plus) appears to be the more active in using the river environment to recreate compared to the other age groups. Many of the more than 61 year-old river recreationists implied through the interviews that being senior citizens, they have more free time to indulge in recreation activities, being free from the responsibilities of family and/or work, as compared to younger age group with young families to attend to.

Table 5.5 Respondents' age group

Age group	No. of Respondents
10 – 15	1
15 – 20	3
21 – 30	18
31 – 40	20
41 – 50	19
51 – 60	19
61 +	25

Table 5.5 clearly shows that there are now more and more females engaging in recreational pursuits and activities, not only along the river, but through memberships in other organizations as well (Table 5.10). This is a surprising result given that other studies discussed in Chapter 1 indicate that women generally participate in more passive forms of recreation. As indicated by the figures in Table 5.6, times have changed and women now have both the leeway and latitude to engage and participate in active recreational pursuits, particularly in the outdoors.

Table 5.6 Sex of river users/recreationists

Male	Female
45	60

The researcher also noted that most of the women interviewed are either with their walking male or female partner, in walking or jogging groups, whereas the men were engaged in their leisurely walk either alone, with a wife/partner or with their dog/s and not with a group or fellow male friends.

Table 5.7 Status of river users/recreationists

Status	No. of respondents
Single	21
Single with children	5
Married	69
With partner	7
Widowed	3

Table 5.7 clearly indicates that majority of river users/recreationists are married, singles coming in second, those with partner, single with children and widowed coming in third, fourth and fifth respectively. There seems to be a preference, that leisure and recreation activities along the river are better enjoyed and shared with a partner or a friend.

The next question aims to find out if river users and recreationists share recreation time with children at the river (Table 5.8).

Table 5.8 Shares recreation time with children

Yes	No	Not applicable
60	36	5

As Table 5.8 shows, majority of the river users share recreation time with children. The age group that do this come from the 21-30 and the 31-40 age brackets who are understandably, the majority of whom are parents, thus, the primary school-age children had the top points (Table 5.9), followed by adult children (18 years old and above), the third being secondary school-age kids, and the pre-school-age group being the last. The 51-60 and the 60 plus age groups indicate they sometimes share recreation time with their grandchildren where the majority belong to the primary and secondary school-age groups.

Table 5.9 Age group of children that respondents spend their recreation time with

Children's age group	No. of respondents
Pre-school age	17
Primary school age	35
Secondary school age	18
Adults	27
Not applicable	5

Table 5.10 Membership to a club or organization

Membership to a club or organization	No. of respondents
Yes	42
No	39

Table 5.10 provides the information on the number of respondents that belong to formal, informal or organised groups who engage in some form of mental or physical activity. There is not much difference as reflected in Table 4.9, but this information is important in order to identify which age groups are most active to engage in physical and other recreational activities. As expected, the 51-60 and 60+ age group showed that majority of them belong to clubs and organizations, aside from spending their leisure and recreational time at the Manawatu River. This also reveals that these age groups are the most active river users. From the data gathered, a great number of respondents belong to at least two organizations, while 39 indicated they do not belong to any organization or club.

More personal impressions, views and opinions about the Manawatu River, the way it is being managed by the authorities concerned, the present recreational opportunities, facilities and services. Respondents were encouraged to mark their favourite place or spot on a map attached to the questionnaire (see Appendix Two).

Table 5.11 River users' perceptions about the Manawatu River

Question	Agree	Disagree	Not sure
The Manawatu River is an important natural resource of the City.	91	1	4
The Manawatu River offers a wide range of opportunities for leisure and recreation for the city's people and the region.	77	18	13
The agencies concerned ensure that the river environment is well-managed for leisure and recreation purposes.	41	21	39
The agencies concerned try to provide a diverse range of recreational opportunities from which the pubic derives a good quality of recreational experiences in and along the river.	36	27	40
It would be nice to see some development or improvement in and along the river environment.	80	2	12

Majority of the 105 respondents agree that the Manawatu River is indeed an important natural resource of the city (see Table 5.11), that there is a wide range of recreational opportunities at the river, a slight lead margin that they believe the river environment is being managed well, but a good number of respondents are not sure if the authorities concerned tries to provide a wide range of recreational opportunities at the river where they can engage in. Eighty of the 105 respondents want to see some developments or improvements in and along the river's environment to improve and enhance their recreational experience and increase the recreational opportunities presently offered.

Table 5.12 Desired improvements, services and facilities by the respondents

Services/facilities	Rank	Respondents' remark
Boating facilities	1st	A boat ramp and a boat hire would be splendid. Jet boat rides would be exciting to have. It would be nice to see water activities like pleasure boating, kayaking, canoeing and swimming, going on at the river.
Toilets	2nd	Toilets placed at appropriate points near the river area.
Park benches		Park benches especially near Albert St. Older people want to sit and take a rest before heading back home.
Drinking fountain	3rd	Placed at appropriate points near the river walkways.
Garbage bins	4th	Placed at appropriate points along river bank area for small litters.

Development/improvement	Rank	Remarks
Gardens along the river	1st	This is to improve and spruce up the river's environment. park-like areas or It would be nice to see some colour along the river, not just the willows. To make the river environment more exciting and relaxing, just like in the Esplanade where it is peaceful and restful. Remove unsightly vegetation along the riverbanks. Clean up mud on walkways after the rain, makes it slippery and dirty.
Picnic and barbecue areas along the river	2nd	There are times the Esplanade can be crowded and not enough barbecue facilities left.
swimming holes	3rd	Assign a river patrol for lifeguards for safety purposes.
People access down the river	4th	Reasonable access to be able to see and play with the water, and swim. To make it easier to carry down kayak, boat and canoe into the river.
Vehicle access down the river	5th	- same reason as above -
Playground for children	6th	Top make the river area more useful, enjoyable and fun to use for kids.
Cafes along the river	7th	Just like other rivers in Europe where there are cafes and restaurants along the river.

Table 5.13 Respondents' favourite river areas (as reflected in Map 5.1)

Favourite river area	Reasons given	Remarks
Victoria Esplanade	Very accessible, peaceful, relaxing, lots of walkways, enjoy the native vegetation, the variety of plants and flowers.	The river, however, is isolated and cannot be seen, unless you use the walkways leading to the riverbanks.
Hokowhitu Lagoon	Very accessible, excellent walkways, peaceful and relaxing environment, lovely trees, green spaces.	Close to home, enjoy watching some people kayak at the lagoon.
Dittmer Drive	Good access, lots of trees and green areas.	Close to home, there's a parking area close to the entrance and walkways.
Anzac Park	Lovely area, peaceful and quiet, good access to get down the river, take a swim.	There's a great swimming hole where it's safe to swim.

Section C sought to obtain and determine the period (i.e. time of day/week), regularity, manner (i.e. alone or with others) and mode of visit to the Manawatu River (i.e. walk or car) by the recreationists/river users. Table 5.14 illustrates the results and shows more people visit the river during weekends, second during weekdays, third during the holidays and less during special events. There appears to be a need for the authorities concerned to improve on advertising and marketing of special events.

Table 5.14 Visit to the river on weekdays, weekends, holidays and special events

Period	No. of respondents
Weekdays	41
Weekends	52
Holidays	15
Special events	11

Table 5.15 Usual period (time) of visit to the river

Period	No. of respondents
Morning	33
Afternoon	49
Evening	21

Through the informal interviews with the river users, it was gathered that many people go to the river to walk or jog after work or after office hours which probably explains why there are more river users in the afternoon compared to mornings and evenings. It was observed that more people walk their dogs in the morning than in the afternoon.

Table 5.16 Period of time spent at the river

Period	No. of respondents
A few minutes	0
Half hour	22
One hour	46
Two hours	23
Three hours	4
Half day	3
Whole day	2

Majority of the river users spend about an hour doing their walks along the river. Most of them walk from Dittmer Drive up to the Hokowhitu Lagoon and back again, which takes an hour or so to traverse. The two respondents who say they spent a whole day at the river said what they meant is they use it in the morning and again in the afternoon. The three who said they spend three hours or half day at the river either do their exercises or training along the river walkways, or in the river kayaking or canoeing.

Table 5.17 Manner of visit to the river

Manner of visit	No. of respondents
Alone	30
With husband/wife/partner	35
With children	16
With whole family	22
With friends	31
With club	13

The top five reasons for visiting the river are to 1) walk along path; 2) relax; 3) walk dog; 4) watch birds, and ; 5) picnic and barbecue. This only shows the great influence that government agencies have in affecting the pursuit of leisure and recreational

activities by the public through the provision of appropriate and/or necessary recreational facilities or services to encourage participation and involvement in recreation, and the use of the outdoors. The very small number of users that participate or do the usual activities related to contact water sports or recreation like swimming, fishing, rafting or boating only tell of the very limited recreational opportunities found along or in the Manawatu River.

Table 5.18 Reasons for going to the river

Purpose/reasons	No. of respondents
Relax	53
Think	13
Commune with nature	17
Spiritual reasons	6
Walk along path	61
Watch birds	19
Watch others recreate	9
Play ball games	7
Do exercises	15
Picnic/barbecue	18
Rafting	2
Boating	4
Motor boating	0
Camp	1
Water ski	0
Cycle for pleasure	13
Others: Swim	4
Fish	2
Train	3
Walk dog	27

Table 5.19 Means of going to the river

Means	No. of respondents
Walk	62
Jog	14
Cvcle	16
Car	39
Motor bike	0
Public transport	0
Others: Kayak	2

Majority of the respondents, as per the informal interview conducted live about from 10 to 20 minutes walk to the Manawatu River, while those who use vehicles said it takes them around just 5-15 minutes to drive to the Esplanade, leave their car there and use the river for walking, jogging or running. This indeed show the importance that many of the city residents have with regard the Manawatu River as a good and ideal place to spend their leisure time and recreation activities.

Table 5.20 Factors that affect/influence the pursuit of leisure and recreation activities at the Manawatu River

Factors	Rank
Availability of leisure time	1st
Weather	2nd
Work	3rd
Family concerns	4th
Travel time	5th
Access to river	6th

The pursuit of leisure and recreation activities are mostly affected by the availability of leisure time of the respondents (Table 5.20). This can be attributed to work commitments and family responsibilities (which comes third and fourth, respectively, that influence or affect leisure and recreation), as expressed by many of the respondents during the interviews. Weather is given as the second reason that influence their decision to engage in outdoor recreation like going for a walk or a stroll along the river. According to the respondents, rainy and windy weather is likely to stop them from going to the river, or engage in outdoor recreation. A number of older people interviewed complained that some part of the walkways tend to get muddy and slippery during rainy weather.

Table 5.21 Visit to the river as per season

Season	Rank
Summer	1st
Spring	2nd
Autumn	3rd
winter	4th

The plan to monitor river users during weekends throughout summer, autumn and winter was not carried out in this study. However, through interviews and the questionnaires gathered from river users, Table 5.21 shows that summer is the most favourite season of the respondents in going to the river, spring comes in second, autumn third, and winter is the least favoured season of the respondents for engaging in outdoor recreation.

Table 5.22 Perception of respondents on the social and economic benefits of outdoor recreation

Questions	Agree	Disagree	Not sure
The shared enjoyments of outdoor recreation near the river reinforces social relationships between existing and new- found friends in the community	73	1	18
Economic benefits resulting from outdoor recreation include improved health, well-being and job productivity	93	1	4

Majority of the respondents agree that utilising the river for leisure and recreation bring them into contact with other friends, family, neighbours, workmates and acquaintances along the river. In fact, some of the walking groups encountered during the interviews were formed just informally by a good number of respondents through constant encounter with other river users. A small group of kayakers the researcher met during the interviews also decided among themselves to come and meet together during a given day of the week to practice and give kayak lessons to interested new members. Many of the respondents also agreed that economic benefits are derived from engaging in outdoor recreation, like the stroll or walks they enjoy along the river, which according to the respondents give them enjoyment, peace of mind, good health that contributes to their productivity – whether doing home chores or doing full-time or part-time work.

CONCLUSIONS

The chapter has demonstrated that despite the limited recreation opportunities in and along the Manawatu River, many Palmerston North residents like to engage in outdoor leisure and recreation utilising the river's environment for a variety of reasons and purposes (Table 5.18). It also demonstrated that government decisions and plans about recreation do affect recreational pursuits of groups and individuals. One way to drive this point is that had the local authorities decided otherwise not to improve access points and provide new walkways and bridle path along the Manawatu River during previous years, a very good number of people, especially the elderly ones implied during the interviews that they would have second thoughts in going to the river for a walk, or take their dogs for a leisurely stroll along the Manawatu River. Government then must find better ways to manage and improve the recreational opportunities that are presently lacking at the Manawatu River (see Table 5.12) to encourage the people to use the river.

The important tables in this chapter under Phase 1 of the research are Tables 5.2 which revealed that staff from both agencies limited themselves in using the consultation-dialogue approach in dealing with recreation management, issues and concerns and did not employ the Recreation Opportunity Spectrum and the Landscape Ecology approaches espoused in this thesis, nor the other methods mentioned in Chapter 1. Table 5.3 further validated these findings as to current practice of staff in responding to recreation issues. Table 5.4 illustrated the issues and challenges faced by both councils and the responses given by the staff which need to be considered.

Under Phase 2, all the tables presented are considered significant for the following reasons:

- it revealed a good background of the river users and recreationists at the Manawatu River (Tables 5.5, 5.6,5.7,5.8, 5.9 and 5.10);

- it disclosed the importance they give to the Manawatu River as a natural resource for recreation (Table 5.11);

- it presented the patterns and reasons of visit to the river (Tables 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, and 5.19);

- it established their preferences and needs to improve and enhance the recreational experience at the river (Tables 5.12 and Map 5.1);

- it defined the physical, natural and social conditions desired and to be provided to enhance the recreational experience (Table 5.12 and Table 5.13);

- it provided suggestions to improve the present management practice in recreation provision, administration and making of policies (Tables 5.3 and 5.4).

The next chapter analyses the current practice of local authorities in planning for recreation and the institutional arrangements that directly or indirectly affects the provision of recreation on a resource base like the Manawatu River. The following chapter also attempts to compare the findings and information gathered from rivers users and recreationists and discusses the issues and concerns of both parties with regard the treatment of the river as a place for leisure and recreation.

CHAPTER SIX

ANALYSIS AND DISCUSSION

"That degree of uncertainty stretches us. It is the core of outdoor learning. It makes us humble, it makes us glorious".
- Chris Reed, Editor
(Manawatu-Wanganui Regional Council, 2001)

The over-all aim of this research study is to explore the potential of New Zealand gravel-bed rivers like the Lower Manawatu River for outdoor and resource-based recreation and to develop an approach for integrating recreation and leisure issues in its management. Recreation Opportunity Spectrum and the Landscape Planning approaches were examined in Chapter Three and the application of these techniques address the second and third objectives of this study. Chapter One discusses the concepts of leisure and recreation, its development in New Zealand, and the important part they play in the lifestyle of New Zealanders. The increasing demand for outdoor and water-based recreation validates the need to further integrate recreation and its underlying issues and concerns in the city, district and regional plans. While the pursuit of leisure and recreation may be a matter of individual choice, the literature review shows the important role that resource managers and outdoor recreation providers play in creating and offering a wide range of recreational choices to improve and enhance the recreational experience of the recreating public.

From its pre-war view as an individual responsibility, leisure and recreation has evolved into a much wider and diverse series of choices for the individual. Since leisure and recreation is no longer engaged in by individuals for the sole purpose of physical fitness, but also for personal growth, enjoyment, satisfaction, education and self-expression, this has brought about new challenges for government in areas of urban recreation planning, service provision and management.

From interviews with river users/recreationists, they convey the challenge is still yet to be met by the authorities concerned, particularly that which utilises the Manawatu River as a place for recreation. This is further validated by the recent findings from the

PNCC Monitoring Report 2000, which indicates a decline in the number of active and passive users at the Manawatu River or its tributaries on occasional basis, with many people demanding for more leisure and aquatic-based recreational opportunities at the river. Thus, a more innovative recreation planning approache/s and resource management for the Manawatu River may be needed.

The analysis and discussion follows the procedural framework set out in Chapter Five for easy reference and understanding of this chapter. Key issues and important points in previous chapters are reviewed and presented to underpin ideas and theories that may contribute to better planning and practice in providing opportunities for outdoor recreation as well as in the management of outdoor recreation resources.

Integration of recreation programmes in district and regional plans through the use of specific methods or approaches

The review of local authorities demonstrates that both district and regional plans and its policies lack the coherence necessary to complement their respective plans and programmes, particularly on matters that may affect or enhance recreation. Chapter Four mentions the key role of RMA 1991 where decisions or policies of resource management agencies like regional and territorial authorities need to be coordinated to achieve the purpose of the Act. An earlier example given to demonstrate this lack of partnership or co-management of a given natural resource by these agencies is the Turitea Green Corridors Project of the PNCC and the Riparian Margin Management by Horizons.mw. While both have the same purpose and objectives, the projects are currently implemented separately by the two agencies.

Another essential element of this study is to investigate how leisure and recreation issues are managed and treated by decision and policy makers in the preparation of plans, programmes and policies and how they are integrated in the social, economic and cultural aspects of the community and the city. From the district plans and interviews, it is evident that PNCC authorities try to provide a diverse range of recreational opportunities for the public and recognises the important role recreation plays towards the improved health and well-being of the community. However, the PNCC uses only two simple methods in planning and dealing with recreation issues, namely consultation-dialogue and workshops. It was observed that there has been no major change on current or past management practice in planning for outdoor recreation or dealing with outdoor recreation issues. Employing simple methods may

result in inputs that may not be helpful, useful or diverse, and limits public participation that compromises the recreational interest of others. As Jubenville (1978) points in the first chapter, a range of approaches may be needed to encourage participation, and combat apathy and indifference. For example, PNCC and Horizons.mw staff interviewed said that meetings are usually attended by interest groups, rather than by individuals. As discussed in Chapter One, it is more often that the political system usually responds to users at the organised interest group level rather than to individual opinions or concerns. This defeats the purpose of providing the most satisfying recreational experiences for various individuals, and other user groups. In order to have an effective plan for recreation, a diversity of input from the public must be generated.

User preferences are only one of the many inputs to the formulation of management objectives, and public authorities must be able to show that these ideas are considered and integrated into the plan or decision. At the moment, there is no clear indication that show that the PNCC or Horizons.mw have gathered enough good information or have satisfactorily included and/or collected enough users' responses that could have aided and contributed in making more dynamic and enterprising strategies in planning for recreation, especially those that utilise the Manawatu River. Chapter Five presents other approaches or methods that the council could have used in planning for recreation contributing for a more appropriate and better recreation planning. But from the interviews conducted, both PNCC and Horizons.mw staff seemed unfamiliar with some of the approaches mentioned.

Chapter One identifies a number of constraints to leisure and recreation. From the interviews conducted, the most limiting factors or major constraints in developing the river for recreation are environmental and institutional constraints. From an environmental perspective, safety considerations at the Lower Manawatu River has prevented Horizons.mw authorities to make further developments along the river. The PNCC on the other hand is constrained by both environmental and institutional constraints. The institutional constraints refer to goal differences as those from Horizons.mw's management priorities and practices and includes costs in the provision of services, facilities and other developments along the river. The Manawatu River is obviously viewed as a resource that could not yield economic benefits for the community or the city, although local authorities are already starting to recognise the river's potential as a place for recreation.

Because of the emphasis given by local authorities on the river's physical or environmental limitations and character, this has somehow disregarded how the resource is being perceived by the river users which affects the quality of recreation and experience. This is one example where it demonstrates how resource management decisions, priorities and programmes can affect the resource situation. For many years now, the approach and treatment of the river has always been conservative. This is one area where local authorities concerned can look for opportunities for change, as well as challenges in recreation provision and management. The questionnaires and informal interviews conducted with the river users and recreationists in this study provide information which could assist in developing a criteria for assessment and recommendations with regard river management and maximising its potential as a recreation resource of the city and the region. Taking into account the users' perspectives and preferences would aid in using the ROS method. The information gathered will hopefully assist in identifying the site's attractive features and recreational potential and its capacity to accommodate some modification in the physical or natural settings and/or specific activities without compromising its conservation values, subject to an appropriate level of capital investment.

Integration of recreation programmes in district and regional plans through the use of specific methods or approaches

The PNCC has a Recreation Plan 1998-2003 which sets out the council's vision for recreation. PNCC staff said the Plan evolved through workshops, submissions and consultations with the public. While the Plan contained goals, strategies and actions on how to develop recreation and the role it envisages itself to play over the next five years, the Plan did not discuss, nor presented specific methods or approaches to be employed, nor did it present a step-by-step strategies that will lead to concrete actions to achieve the stated goals. It was also learned through the interviews that public input in this Plan was very limited and not extensive enough to contain the real sentiments and desires of the public with regard recreation. The PNCC has yet to develop an outdoor recreation approach and model that will assist them in other areas of recreation planning.

With regard the integration of recreation programme, the PNCC, however, is on the right track in the area of providing recreation and cultural facilities. In Palmerston North for instance, a new sports complex, Arena Manawatu, has been recently opened and the Lido Aquatic Centre is currently being refurbished. Aside from this, the local council is

also trying to improve facilities at city parks and some of the reserves it manages. In addition, the local council has provided new and better city walkways to improve linkages with the existing ones allowing recreational users to start at any point of the walkways. Two recently constructed walkways in the Summerhill area have been linked with the Turitea Walkway, Old West Road, Springhill Grove, Pacific Drive and Poutoa Walkways which completes the Aokautere circuit. Recreational users can now walk the entire circuit which encompasses Springhill Grove, Old West Road, Pacific Drive and Poutoa Walkway. This will encourage more walkers and joggers group to utilise the city's walkways and thus increase usage of those paths previously constructed along streams and the Manawatu River.

In interviews, some PNCC staff expressed their concern about vandalism on council properties like park benches and tables, toilet and barbecue facilities, and fences at several parks and reserves near or along the Manawatu river. As a result, a group of maintenance crews have been employed to maintain facilities along the river and at the parks and reserves on certain times of the day and night. While this can be costly, this has prevented further vandalism of facilities at the parks and reserves. The researcher believes that if there are more people frequenting the river and parks in most times of the day and night, this may not occur. Enjoyment of a recreation resource like the river tend to encourage people to feel a sense of ownership over the resource base and will do anything and be encouraged to employ ways and means to protect it. More than the government agencies concerned, it is the people who will take it upon themselves to act and do something about the problem, with the government agencies playing an administrative or supportive role.

Integration across agencies

There is no question that both agencies have a good understanding of their respective management functions and jurisdictions. The PNCC and Horizons.mw's management of the urban environment and natural resources within the city and region can be made more effective and enhanced should they link-up and work closely together to achieve their objectives through their plans, policies and strategies. The RMA recognises the need for regional councils and territorial/district councils to coordinate their resource management decisions to attain sustainable development of physical and natural resources. Although, recreational provision is not a management function or a direct concern of the regional council, it has established a River Users' Advisory Committee that ensures that by-laws and safety provisions are adhered to by the public who utilise

the river for their leisure and recreation. Chapter 3 emphasized the key role of local governments in responding and recognising community aspirations, while at the same time pursuing sustainable development. New Zealand has enough statutes to ensure that a good balance is achieved in this pursuit. All that is needed is for authorities concerned to adopt a more aggressive and innovative stance to make these laws work and achieved its intended purpose and objectives. Thus, this Horizons.mw function and committee is more appropriate to be managed by the PNCC that in the first place plans and provides recreation activities and opportunities to the public, with Horizons.mw acting as the member and not as currently practiced. This type of arrangement will open up opportunities for both agencies to deal more appropriately with recreation issues, work more closely together, build relationships and consult on projects and programmes that utilise the city or region's physical and natural environment and resources like the Manawatu River.

Both councils also need to adapt a more flexible approach in some policies that may directly or indirectly affect recreation provision. Both staff from PNCC and Horizons.mw acknowledged that there are situations wherein they are hindered or limited by their respective statutory functions. Inasmuch as the PNCC wanted to provide more better recreation opportunities for the public, like more access points along the river, the council's statutory functions limit the activities they can do along the river since Horizons,mw has significant control over the river environment. Had the regional council strictly adhered to its policy of limiting physical facilities that the PNCC can provide like the improved walkways along the river, this could have affected and limited the enjoyment of people wanting to carry out recreation activities at the Manawatu River.

There may also be a need to improve coordination between the two agencies and consider conducting joint projects where both councils can share resources and expertise to conduct more successful environmental programmes for the city and region. Staffs from both agencies admitted being hindered by lack of financial support and resources in conducting more projects for the city and the region. It was mentioned before that the Department of Conservation does not have an active involvement in the management of the Manawatu River and has left its administration under the Horizons.mw. One programme where the PNCC and Horizons.mw could have pooled their resources together was the Green Corridors Project which was initiated by the city council in 1999 that restores the Manawatu lowland ecosystem along the Turitea Stream, increasing its landscape values and recreation potential down the Manawatu River. It was clear through the interviews that the regional council did not have a direct

and active participation, nor support in this project. With regard riparian management and improvement projects being conducted by the regional council, it was also evident that the PNCC was not involved in this undertaking that clearly indicates the lack of beneficial partnership and liaising between the two agencies. Much finances could have been saved had both councils sought to establish a nursery that was jointly undertaken that grow indigenous trees and plants suited for river plantings, instead of both councils having its own sources. With coordinated plantings along the river, this could have resulted in a more well-planned, aesthetically-pleasing river environment which not only improves the landscape, but also enhances its ecosystem.

On matters of communication and coordination between agencies

Majority of interviewees from the PNCC and Horizons.mw agree that there is a need to improve communication and coordination between and among agencies. This will help clarify some functions and responsibilities that at times seem to overlap and cause confusion and misunderstanding within their respective organizations and to the public in general. This information is presented in Table 5.1 to facilitate comparison of various responses gathered from the interviewees.

Interviewees from local authorities are unable to articulate clearly defined recommendations about how to achieve the given measures. Some made general statements such as "improve working relations with the PNCC" or "continuous dialogue with the public". This somehow indicates the lack of attention given to this area of management by both councils. From interviews, PNCC and Horizons.mw related the lack of personnel to assist or provide support in the implementation of other programmes or projects. A number of them performs dual functions to meet work targets and meet deadlines. This may contribute to the lack of focus on specific projects or programmes that may otherwise need focused attention, therefore affecting its quality. Perhaps, a review of the present administrative structure and staffing pattern will enable both agencies to provide a more holistic view of the way the physical and natural environment is being managed by both agencies and how it affects its plans and programmes will aid in coming up with a more focused view of how the present management practice directly or indirectly affects recreation provision and will assist in identifying activities and programmes that will either increase or limit the recreation opportunities. A review of the present organizational set-up, hiring of additional appropriate number of staff as well as training may need to be done.

Public input, participation and involvement in recreation planning

It is evident that both agencies endeavour to improve public participation and involvement in the development of plans and policies. But better ways need to be put in place to further encourage public attendance and participation in agency-sponsored and initiated consultations, meetings, dialogues and workshops. Despite laws and regulations to guarantee public involvement (e.g. RMA 1991), it appears there are limited opportunities for the public to express their ideas and concerns considering for example, the frequency of meetings (e.g. twice a year meeting of the River Users' Advisory Committee) being conducted by the regional council, and the reactionary stance being employed by the PNCC in dealing with recreational issues which just alienates, rather than get the public more involved in planning for recreation. There is also a need to reach out to a wider group of people, organizations and interests groups to cover a wider range of ideas, issues and concerns where various inputs can contribute to better plans, policies and projects on outdoor recreation, other than the usual habit of newspaper advertisements, radio pluggings and leaflets. Past meetings seem to involve only a small group of river users usually coming from interest groups like the jet boaters, anglers and bird watchers, and less from individuals, as relayed by one Horizons.mw interviewee. Staff from both agencies said that public participation usually depends on the issue raised or interest of stakeholders. If the public is to respond, information and ideas must affect his or her well-being or self-interest. The challenge is how to increase public awareness that may generate interests on issues that may affect other river users as well. When people start to put much value about a given natural resource and learned to appreciate its importance in their lives, people will not hesitate to voice out their opinions which can be good measures that can lead to making good decisions in management of public utilities, natural or man-made. But the agencies concerned must ensure that the public are well-informed by having good access to information and are made aware of the implications of proposals put before them. That is why, providing adequate information and education is crucial in this process. The intent is to obtain feedback that can be used in decision-making.

DESIGN FOR LEISURE AND RECREATION

Chapter Three presented the six opportunity classes under the Recreation Opportunity Spectrum (Figures 3.1, 3.2 and 3.3). Along the continuum, the Manawatu River falls under the *urban classification* based upon its physical, social and managerial settings. From the discussion in the said chapter, a conclusion can be made that the end product

of recreation management is the experience people have. The key to providing most experience opportunities is the setting and how it is managed (Mittman, 1993). Table 6.1 describes the settings at the Lower Manawatu River as categorised by Manning (1986) discussed in Chapter Three.

Table 6.1 Setting characteristics of the Lower Manawatu River

Physical setting	Description
Sub-class: Natural remnant	Modification: ➢ The Manawatu River traverses its way through Palmerston North City about 81/2 kilometres from Maxwell's Line down to Riverside Road. ➢ Both sides of the river are characterised by thick vegetation of willows, some native trees or bushes, particularly podocarp and totara. ➢ Few elements of the natural environment remain; environmental quality may be impaired. Access: ➢ Very accessible to most members of the community; foot access well-defined; public parking available at several parks around the area and of walking distance from the river. ➢ The Manawatu Riverside Walkway and Bridle Track (9.6 km.) runs beside the Manawatu River, stretching from one side of the City to the other, from Riverside Drive to Paneiri Park. Most often flowing the stopbank, this track meanders through riverside environment, parks and reserves, and residential areas. ➢ Generally lacks water access from land like steps, ramps and paths.
Social setting	➢ Moderate to medium experience and interaction with other user groups or individuals but there are opportunities to experience isolation and closeness to nature depending on time of day in the otherwise urban environment/setting.
Managerial setting	➢ Restrained and acceptable regimentation and control, although thick vegetation (i.e., willows) and stopbanks block the view of the river. ➢ Facilities, services and opportunities are convenient, accessible and influenced by human activity; maintenance operations not often visible, visible signage and markings in some river areas.

Chapter One enumerated the constraints to leisure and recreation. As highlighted by Gold (1973) in this chapter (see Table 1.1), it seems to show that intrapersonal and structural constraints are the factors that limit recreational participation in and along the Manawatu River. Under behavioural constraint, user satisfaction and user orientation reveals the physical (e.i., natural or man-made environment) and social conditions (e.i., contact with other recreationists) preferred by recreationists. Factors such as

convenient access, site characteristics, weather and climate, physical location and facilities development fall under the environmental constraints found in Tables 5.11, 5.12, 5.15, 5.16, 5.17, 5.18 and 5.19. All these factors are useful in developing the 'close to the ideal' ROS and landscape for the Manawatu River.

The research study cannot emphasized enough the significant role that public authorities play in leisure and recreation through plans and programmes, and how all of these relate to the social, cultural and economic well-being of the community that the concerned agencies administer and manage. As discussed in Chapter One, it is important to include and consider the nature, extent and level of management control over recreation use by public authorities. It was mentioned in Chapter 4 that Horizons.mw does not directly manage recreation but does manage natural resources like the Manawatu River. As reviewed from the regional plan, Horizons.mw focuses its management and financial resources in several main areas like land resource management, vector control operations, regulating resource use, river and drainage scheme and resource information. While there are specific council activities and projects to improve water quality on rivers and streams that can promote water recreation, Horizon.mw does not appear to consider the direct or indirect effects of regional plans and programmes on recreation. This is one area where the council needs to improve. While sustainably managing resources can enhance a recreation experience in natural surroundings, it does not mean that the best options are chosen to satisfy the recreation needs and desire of the recreating public. A good balance needs to be created whether to limit or maximise the usage of the natural resource base like the Manawatu River.

The PNCC, being the main recreation provider and manager under the present governmental set up lacks the statutory functions and responsibilities necessary to effectively and efficiently manage and provide recreation opportunities to the public. As illustrated in Chapter Three, the present management regime gives more power and authority to the Regional Council in the management of physical and natural resources much of which is in demand for more recreational use from the public. Some PNCC programmes and projects cannot be provided due to some statutory or legal limitations that have been delegated to Horizons.mw. As a result, PNCC staff said this has frustrated some of their efforts to provide more opportunities for recreation. While compromises could have been reached in past projects, the flexibility that had been allowed by the regional council to district council was not enough to effect the change or services desired because of Horizons.mw's conservative approach, views and

regulations on some activities or projects that can be done in and along the river environment. For instance, the PNCC had previously brought up the idea of providing a number of new access points down the river to enable users, kayakers and anglers to go down the river but the proposal was denied by Horizons.mw due to safety, erosion and flood control reasons. It is these differences in both goals, purposes and management approaches of these agencies that create the barriers for integration of plans, policies and programmes that adversely affect recreation provision. As pointed out in Chapter One, an effective manager is not the one who is solution-oriented, but process-oriented. There is a need, therefore, to see the 'big picture' on current and past management regimes, and try to establish links within the system that will contribute and lead to better practice in resource management decisions and strategies. This can only be achieved through better integration of plans, policies and programmes by the PNCC and Horizons.mw.

Despite the fact that the term "landscape" is mentioned only a few times in the RM Act, landscape issues under this statute is important. This importance is derived from obligations by the RMA particularly in Sections 5,6 and 7 [Part II], and key definitions of "environment" and "amenity" (Henderson and de Lambert, 1992). Under Section 6, certain principles must be "recognised and provided for" which clearly identify resource issues of national importance as a mandatory responsibility to achieve sustainability. Each resource issue identified in Section 6 of the RMA (Appendix 6) is connected with and contributes to the landscape (Ibid).

Chapter One mentions that growing concerns about environmental quality has led to the recognition of the scenic quality of landscape as a major recreational resource in its own right, rather than as the visual backdrop for other recreation pursuits. The interviews conducted with river recreationists and users have drawn out these perceptions, with majority recognising the unique physical attributes and visual elements found in the environs of the Manawatu River and the need to protect it (see Table 6.1) contrary to the perception, previous evaluation and inventory of the river by the Manawatu River Recreation Management Plan (1981) and the New Zealand River Recreational Survey (1981) by resource managers from territorial and national agencies as lacking in visual amenities and potential for recreational use. This has resulted with some resource managers to shift focus to other rivers like those in Ashhurst and Whanganui, ignoring the Manawatu in the process. The challenge, therefore, is to make resource managers see those elements or characteristics in order for them to regard the value of the Manawatu River as an important recreational resource of the City and the region.

Chapter Three demonstrates that recreational potential is sometimes considered almost synonymous with the capacity of the site to accommodate specific activities. Unfortunately, the authorities have only focused on resolving conflicts of users, instead of identifying the attributes of the river environment capable of contributing to its use for recreational purposes which presents the opportunity to evaluate and harness its potential as an ideal resource base for recreation, and adopting a good model of management techniques and practice, thus avoiding or mitigating the deterioration of the site. If these factors were considered in the past, getting government or private financial assistance or public support towards the river's development would have been achieved.

CONCLUSION

Local government is by far the principal provider of leisure facilities and programmes in New Zealand (Cushman, 1995). And yet, planning for leisure is treated as a minor, and not of central importance in many local authorities. Many city managers have not appreciated the importance of parks and open spaces and have no implemented positive policies that ensure their continued provision, development and maintenance (New Zealand Recreation Association, 1994). For instance, Palmerston North City Council has a recreation plan which sets out the council's vision for recreation. It does this through the use of goals, strategies and actions relating to the provision of direction on how recreation should be developed in the city and the role it sees itself playing in this process over the next five years (PNCC, 1998). However, this document is too broad and does not provide specific policies, clear directions and innovative ways to meet community needs or demands for recreation. There has been limited opportunities for public participation in consultation meetings and notably, had not been encouraged over the past few years. Although, the Manawatu River is identified in the Recreation Plan as an important natural resource in the city, there is more focused in the improvement and development of cultural facilities and community centres (e.g., The Regent on Broadway Theatre, Globe Theatre, City Square, etc) and sports facilities (e.g., Manawatu Community Athletics Track, Lido Pool Aqautic Centre, etc.) rather than the further promotion of outdoor recreation or activities. This is evident in local brochures which highlight other places for the public or community to go and pursue recreation interests, and not much attention has been given to the Manawatu River as an 'ideal place' to be to do recreational activities.

Government aims in recreation and sport must recognise the personal and individual dimensions of recreation. They should be concerned with promoting and encouraging recreation participation, thereby enhancing the opportunity for leisure experiences of the community. Simply providing parks, reserves and playfields, reserves and other recreation facilities is not enough. If government support is to be valued by the individual it must be at the level which is appropriate to the individual. Specifically, it must be directed towards the community and regional levels where individuals satisfy most their recreation needs. For most individuals, the level of support would be a local or regional agency, rather than a central organization (Ministry of Recreation and Sport, 1985). Good information about those who recreate is considered essential for those who manage the lands and resources, in this case, the PNCC and Horizons.mw which provide the opportunities for outdoor recreation. In order to achieve this, Devlin (1990) recommends long-term planning in three areas:

- changes in participation;
- motivations and satisfactions of participants, and;
- resource data on the supply and conservation of resources

Given the above information, managers have the opportunity to become pro-active rather than simply reactive in providing recreation. But there are certainly quite a number of authorities with clear objectives and involvement in providing recreation and leisure opportunities at the Manawatu River but to a large degree, participation has been ad hoc (e.g., Manawatu River Environmental Plan, 1976, Manawatu River Recreation Management Plan, 1985, Ideas on the Control of Gravel-Bed Rivers, 1986). Consultation-meetings with stakeholders by both district and regional authorities had not been regular, consistent, and the process had been more reactive, rather than pro-active in nature. The local authorities need to adopt other methods or approaches on this matter.

The following chapter revisits the objectives set out in this thesis and discusses the findings that aims to contribute to better recreation planning which utilises a natural resource base like the Manawatu River by using the two approaches recommended in the study. Recommendations to local authorities concerned are presented, as well as the issues for future research.

CHAPTER 7

CONCLUSIONS, RECOMMENDATIONS AND ISSUES FOR FUTURE RESEARCH

"Most students of cities have chosen to ignore the basic biological nature of man. Architects deal in exterior form, aesthetics, and sometimes, function; landscape planners in 'design principles'; politicians in short-term solutions to immediate problems; regional planners in trends and directions (thus often perpetuating past mistakes); engineers in single factor solutions to hasten the flow of water, sewage or automobiles from one place to another. Few try to grasp the complexity of the interactions, and no-one speaks clearly for human habitat and the unvoiced needs of man."

- Detwyler Marcus, from the book "Urbanization and Environment"

The chapter begins by revisiting the objectives of this thesis where the central ideas and concepts about leisure, recreation, Recreation Opportunity Spectrum and Landscape Ecology are discussed (Chapters One to Four). In Chapters Five and Six, ROS and Landscape Ecology are examined as techniques suitable for assessing the recreation potential of the Manawatu River in an urban setting like Palmerston North. Recommendations as to how the agencies and authorities concerned can apply or modify the methods recommended to contribute to better practice in managing the river and its environment for both recreation and conservation purposes are presented.

THESIS OBJECTIVES REVISITED

To validate the significance of this research study about the Lower Manawatu River, central questions that revolve on how river users, particularly Palmerston North residents, regard the river as a place for leisure and recreation sets the phase to proceed in the investigation of this topic. It first starts to enumerate the historical, ecological and cultural importance of rivers and the aesthetic and amenity values they hold for people as a place to mediate, seek comfort and solitude, and to pursue a host of other recreational activities (Chapter One). Despite the significant location of the Lower Manawatu River in the heart of Palmerston North, its potential as a place to recreate has not been fully harnessed due to the institutional frameworks that have

limited its management or even development as a natural resource (Chapter Three). The results in Chapter Four from the questionnaires-surveys point to leisure as a major element in an individual's personal sense of life satisfaction. A perception of physical and psychological well-being pervades the survey responses regarding recreation. Regardless of the type of recreation, benefits cited include recreation is a tonic for physical and psychological weariness and it provides respite from the day-to-day routine of activities. The results also shows the differing values and perceptions of river users and that of PNCC and Horizons.mw authorities with regard the river and its environment. Interview results indicate the river users' high regard for the river as a place to recreate and most express desires for more improvements and better facilities. Local authorities' interviewed demonstrate their absolute focus on the river's physical limitations (i.e. flooding, erosion problem along its banks, etc.) all these factors lead them to adopt very conservative and strict measures (eg. BRL Plan 23) to further development along the river. The agencies concerned need to be more innovative and creative in adopting available methods and approaches such as the ones proposed in this study to increase recreational opportunities desired by the recreating public who utilise the riverine environment without compromising its conservation values and flood protection measures. Aside from this, the research recognised that both PNCC and Horizons.mw have not adopted any approaches other than consultation and workshops to gather public information about leisure and recreation issues. This explains the limited scope given to recreation planning and the reactive stance in dealing with recreation issues. The methods used by PNCC and Horizons.mw provide limited public involvement. Usually, the same groups participate in all the processes. The general public, those surveyed in this research, are usually excluded.

The Landscape Ecology concept proves useful in developing river environment that will not only improve and enhance its present aesthetic or amenity values but also improve its biological diversity that ultimately contributes to better recreational opportunities like angling and fishing. This approach complements the application of the Recreation Opportunity Spectrum method which develops a variety of settings to enhance recreational experience and to provide opportunities for recreation (Chapter Three). As illustrated in Figure 4.4 in Chapter 4, the riverbanks area between the Fitzherbert Bridge and Holiday Park could be developed and 'opened up' without causing erosion problems since the banks along this portion runs straight and not curved as in other areas where water currents can adversely affect bank stability. Planting the appropriate types of vegetation and the application of good planting techniques will help stabilise the riverbanks, as well as enhance the aesthetic and amenity values of this riverside area.

The specialised skills of a landscape architect, landscape scientist and landscape manager are required to achieve these objectives. The development may be carried on a piecemeal basis should costs be an issue. But judging from the length of the area recommended to be developed (refer to Map 5.1), cost would probably be irrelevant considering the advantages and benefits to be accrued from the development. It is demonstrated in Chapter One that economic benefits resulting from outdoor recreation include improved health and job productivity. Increased tax bases for community services and increased regional income can be brought about by preservation of the resource for recreational activity. Chapter One mentions that outdoor recreation is a multi-billion dollar industry that provides jobs, and produces goods and services. From a social perspective, multiple use of the river environment makes a lot of sense, especially where resources for outdoor recreation is limited, or where prevailing conditions limit their recreational resource potential. The agencies concerned need only to make a good study of this aspect and look at the potential of the river, more so now that the PNCC have reported a decline of river users between the years 2000-2001.

Another good reason to develop this riverside area is this site runs parallel with that of the Victoria Esplanade where several good access points exist that lead down the riverside. In major events where it will require bigger space to accommodate the crowd, this riverside area if developed serves as an "extension or ante-room" to the Victoria Esplanade, where other activities or events can be held or accommodated. The best time to hold special events is during the summer and autumn seasons where the river is safe to be used for contact recreation (Chapter One). In addition, the Manawatu River has long been ignored as a recreational resource judging from the activities listed in the PNCC's Summer Fun Guide 2001-2002 (Appendix Fourteen). None of the activities make use of the study area along the Manawatu River between Fitzherbert Bridge and Holiday Park. Should this riverside area be developed, this would be an ideal place to hold big events like "Earth Day" which is celebrated internationally every 22nd of April.

Since the site is 'exposed' to the public from Fitzherbert Bridge, more people are made more aware of events and will be encouraged to participate and get involved with riverside activities sponsored either by the PNCC, Horizons.mw or other environmental organizations. Other school and community-based endeavours held along the river can result from increased demand for the care and protection of this riverside area. As mentioned in Chapter Four, when people start to put value about a given natural resource and its importance in their community, people will not hesitate to voice out

their opinions which can be a good source of information for better management of public areas, natural or man-made.

THE ADEQUACY AND LIMITATIONS OF ROS AND LANDSCAPE ECOLOGY IN THE STUDY AREA

There is only a slight potential for the ROS to be applied in the study site considering its limited space. The application of the ROS may seem elementary but its three distinctive components, namely activity, setting and experience can provide resource managers and planners good information and a better understanding of people's motives and preferences for engaging in recreation and in identifying the resource base's natural or physical attributes and potential to be utilised for outdoor recreation purposes. The kind of setting sets the stage for the type of activity and the quality of experience desired by the recreating public. Through the application of Landscape Ecology, the river can offer various recreational opportunities by modifying and enhancing the river's physical and natural environment. It promotes better environmental and water quality. As illustrated by Figures 3.8, 3.9 and 3.10 in Chapter Three, the use of various types of plants can open-up or enclose a given space, and even re-create and enhance a natural landscape. Because of the intangible and multi-faceted nature of landscape, recreational values may be hard to assess (Chapter One). Therefore, because of the personal nature of recreation and the subjective manner it is experienced, the ROS's focus on the setting and Landscape Ecology's concern about landscape character and quality makes a perfect combination as the approaches to be applied.

RECOMMENDATIONS

For better management of a recreation resource base like the Lower Manawatu River and other reserves or open spaces

- While past and current efforts are made to protect and conserve the region's natural and physical resources, the PNCC and Horizons.mw authorities need to coordinate both their environmental programmes, for example the Turitea Green Corridors Project and Riparian Management, respectively. Certainly, both projects contribute to improved recreational, aesthetic, ecological, functional and economic values of the city's reserves and open spaces as that of the river which provide for richer, more diverse and useful urban spaces.

With regard the proposed development along the river

- With regard river development, this should be a joint undertaking between the PNCC and Horizons.mw which is an opportunity to improve their communication and coordination and to better appreciate and understand their respective functions as resource management agencies. These opens up opportunities for both agencies to further explore issues and come up with better approaches in dealing with resource planning and management for recreation.
- The proposed site for development could be delineatedand referred to as "The Lower Manawatu River Park" to distinguish it from other reserves and open spaces adjacent to the river. This facilitates identification of the site in case of holding special events – either by private or public groups or organizations. This also serves as an added attraction of the City and in the Region.

For better recreation planning and provision

- The functions of the Manawatu River Users Advisory Committee should be transferred to and managed by the PNCC instead of this committee being placed under the responsibility of Horizons.mw. Figure 4.5 in Chapter Four clearly indicates that city/district councils are mainly responsible for recreation, leisure, tourism and the provision of cultural facilities; the regional council's main concern is the environment. Horizons.mw, however, should be represented by one of its planners or resource managers in the Committee. A quarterly meeting of the committee members is further recommended instead of its once or twice a year meeting to better cope with issues and concerns about resource use for recreation.
- To address the issues about safety and vandalism of council facilities, the service of a river warden is recommended to be employed by the regional council. He or she will have the dual role of educating the river recreationists/users on the location and use of different river areas along the river corridor and advise the public on safety issues as well as hazards found along the river. The river warden also ensures that council properties are well-maintained and the river's environment are kept pristine, clean and orderly. The riverside area is currently not lighted. For safety and aesthetic purposes, the local authorities should consider putting up lamp posts along the walkways for safety and aesthetic purposes.

- The Manawatu-Wanganui Regional Council should consider adopting the landscape ecology approach in it's Regional Policy Statement for a better integrated management of natural and physical resources that can enhance recreational experiences and provide more recreational opportunities, and for the PNCC to adopt some principles of the Recreation Opportunity Spectrum or any other approaches aside from consultation that may be useful in planning for recreation.
- For both agencies to employ people with specialised skills in ecology, landscape planning and design during the planning process, and for Horizons.mw to explore other ways and means in dealing with erosion and flood management without compromising the potential of the resource for recreation purposes or uses.

While both agencies have recognised the value of protecting and conserving the city or the region's reserves, their strict and an almost uncompromising stand in implementing rules and regulations through various statutes like the RMA and the Reserves Act, and through the regional and district plans and policies has partly compromised the importance of leisure and recreation and its contribution to society. As Mittmann (1993) succinctly states, "In terms of family and community which are central elements in people's lives, recreation is a primary link in building and maintaining the necessary social interactions. Family relationships are enhanced when the opportunity for experiencing outdoor recreation settings together result in eased tensions, better communication, and possible long-term behavioural improvements leading to better family cohesion. The shared enjoyments of outdoor recreation cement social relationships between existing and new found friends in the community." Surely, a good balance must be created between resource use and protection for the use and enjoyment of present and future generations.

ISSUES FOR FUTURE RESEARCH

- In planning for recreation, especially here in New Zealand, it is important to consider the cultural and spiritual values the Maori have for rivers. Therefore, further studies will be needed to explore iwi values and needs for recreation.

- The research study has not fully explored river engineering schemes to protect it from erosion and to control flooding. Newer technology in managing and

controlling rivers need to be explored so as to guide and encourage resource managers and planners to innovate and 'play with' other approaches in dealing with issues and problems of rivers, especially when there is a demand for its use as a recreational resource.

- While there are various methods available in dealing with visitor use and impacts on outdoor recreation resources, better ways and means of controlling or limiting public uses of natural and physical resources need to be examined and explored. A clear distinction understanding between a 'right' and a 'privilege' of using and enjoying a natural resource will lead to resource users (e.i. recreationists, visitors or tourists) to better appreciate, put value on and do ways to protect and conserve whatever natural, historical or cultural sites he or she visits. For example, putting monetary value to a certain resource and adapt the 'user pay' approach will only make a resource user think he or she must get his/her money's worth of the use and enjoyment of that resource. By capitalising on the Manawatu River's historical, cultural and ecological significance, people will undertake any effort to protect its value as a recreational resource. The proposed development of the river would be better appreciated should these values be inculcated into the hearts and minds of the people of Palmerston North, that a river like the Manawatu, ignored and unnoticed for a number of years would be developed for their full use and enjoyment.

APPENDICES

APPENDIX 1

SEMI-STRUCTURED INTERVIEW FORMAT QUESTIONS FOR LOCAL AUTHORITIES

1. What other approaches have you adopted in the preparation of plans and strategies, especially with regard the provision of recreation for the public?
2. How do you liaise with other agencies to achieve your management objectives? To what extent are community recreation needs are discussed/considered?
3. Does your department/agency receive any complaints, suggestions or comments from the public particularly river users and recreationists?
4. Who is or are the most vocal among the group in raising their issues and concerns? Why do you think this group is the most vocal?
5. What are the usual complaints, suggestions, comments and to be more specific, the kind of services or facilities they would like to be improved or delivered?
6. Are your plans/strategies changed as a result of inputs from them? Please give an example.
7. Do you refer them to other agencies? Please give an example.
8. What sort of changes would you recommend to further improve the flow of communication or promote better coordination between and among other departments/agencies?
9. What are the issues and challenges faced by your department/agency or other agencies that relate to river recreation planning and management? How do your or your department/agency envisage to meet those challenges?

APPENDIX 2

QUESTIONNAIRES FOR RIVER USERS/RECREATIONISTS

QUESTIONNAIRES FOR THE RIVER USERS/RECREATIONISTS

SECTION A

SECTION A SEEKS GENERAL INFORMATION ABOUT YOU. PLEASE TICK THE BOX THAT BEST CORRESPONDS TO YOUR ANSWER.

1. Could you please indicate to which following age groups do you belong?

- ☐ 10-15
- ☐ 15-20
- ☐ 21-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ 60 +

2. What is your sex?

☐ Male ☐ Female

3. What is your present ~~marital~~ status?

- ☐ Single
- ☐ Single with children
- ☐ Wife/husband
- ☐ With partner
- ☐ Widow

4. Do you share recreation time with children?

- ☐ No
- ☐ Yes

If yes, in what age group do they belong?

- ☐ Pre-school age
- ☐ Primary school age
- ☐ Secondary school age
- ☐ Adults (18 and above)
- ☐ Not applicable

5. Are you a member of any recreational club or organization?

☐ Yes ☐ No

If yes, please list these:

_____

_____

_____

SECTION B

SECTION B SEEKS TO GATHER YOUR PERSONAL IMPRESSION, VIEW OR OPINION ABOUT THE MANAWATU RIVER AS A NATURAL RESOURCE AND AS A PLACE FOR RECREATION PURPOSES.

1. The Manawatu River is

An important natural recreation resource of the City.

- ☐ Agree
- ☐ Disagree
- ☐ Not sure

2. The Manawatu River offers a wide range of opportunities for leisure and recreation for the people's region, especially for Palmerstoners.

☐ Agree

☐ Disagree

☐ Not sure

Comment _____

_____

_____

3. The agencies concerned ensure that the river environment is well-managed for leisure and recreation purposes.

☐ Agree

☐ Disagree

☐ Not sure

Comment: _____

_____

_____

4. The agencies concerned try to provide a diverse range of recreational opportunities from which the public derives a good quality of recreational experiences in and along the Manawatu river.

☐ Agree

☐ Disagree

☐ Not sure

Comment: _____

_____

5. It would be nice to see some development or improvements in the river environment.

- ☐ Agree
- ☐ Disagree
- ☐ Not sure

Comment: _____

_____

If yes, pls. specify (e.g. types of facilities, amenities, services desired/improved)

_____

_____

_____

_____

_____

6. Referring to the attached map, which river area (please mark with an X) is your favourite or do you enjoy most? If so, why or what makes it your favourite spot or area?

_____

_____

_____

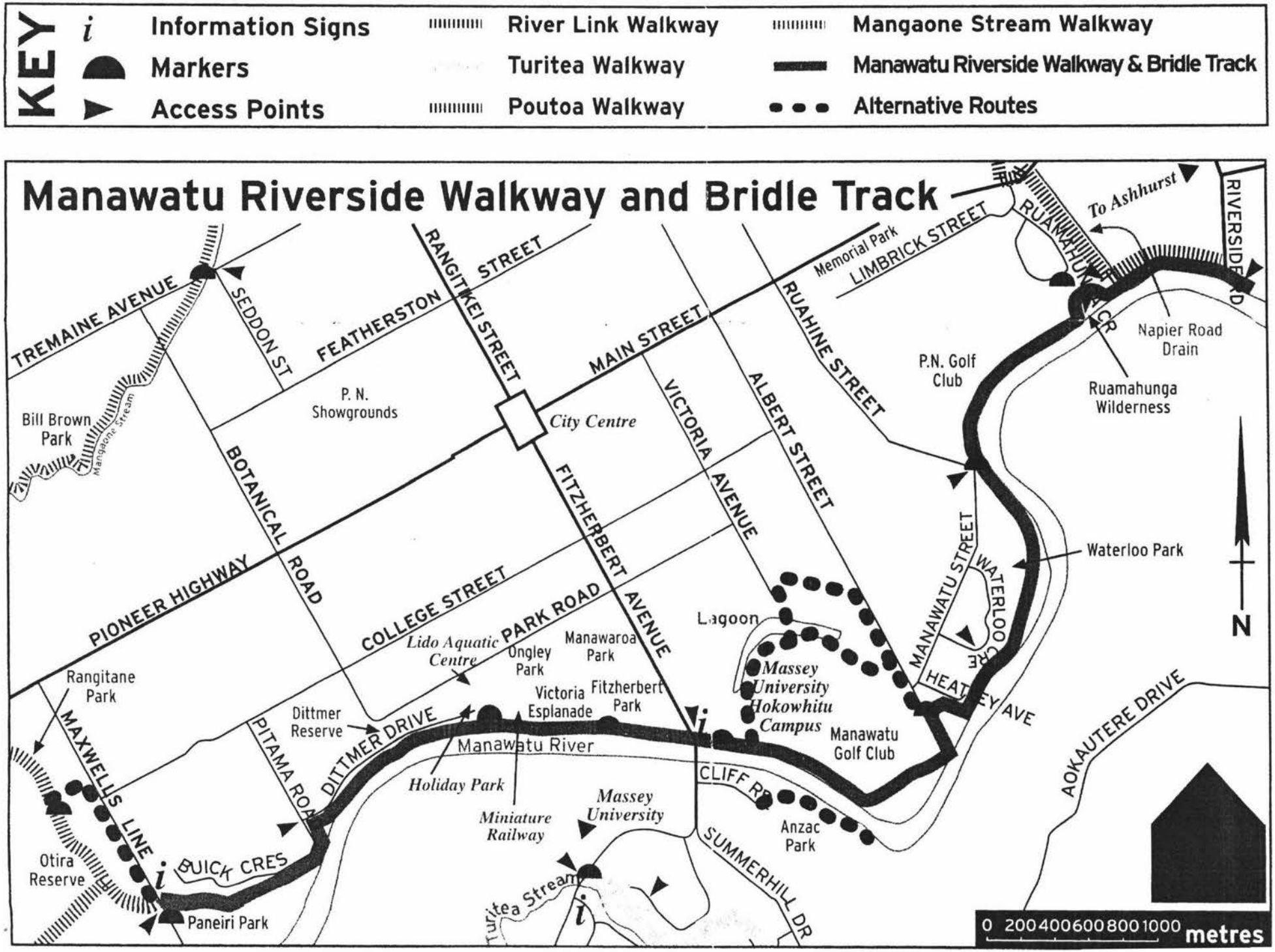
_____

_____

_____

_____

_____


KEY
Information Signs
Markers
Access Points
River Link Walkway
Turitea Walkway
Poutoa Walkway
Mangaone Stream Walkway
Manawatu Riverside Walkway & Bridle Track
Alternative Routes
Manawatu Riverside Walkway and Bridle Track
TREMAINE AVENUE
SEDDON ST
FEATHERSTON STREET
RANGITKEI STREET
MAIN STREET
Memorial Park
LIMBRICK STREET
RUAMAHUNGA CRES
To Ashhurst
RIVERSIDE RD
Napier Road Drain
Ruamahunga Wilderness
P.N. Golf Club
RUAHINE STREET
ALBERT STREET
VICTORIA AVENUE
FITZHERBERT AVENUE
BOTANICAL ROAD
PIONEER HIGHWAY
COLLEGE STREET
PARK ROAD
Bill Brown Park
Mangaone Stream
P. N. Showgrounds
City Centre
Lido Aquatic Centre
Ongley Park
Manawaroa Park
Victoria Esplanade
Fitzherbert Park
Lagoon
Massey University Hokowhitu Campus
Manawatu Golf Club
MANAWATU STREET
WATERLOO CRE
Waterloo Park
HEATLEY AVE
N
Rangitane Park
MAXWELLS LINE
PITAMA ROAD
Dittmer Reserve
DITTMER DRIVE
Manawatu River
Holiday Park
Miniature Railway
Massey University
CLIFF RD
Anzac Park
SUMMERHILL DR
AOKAUTERE DRIVE
Otira Reserve
QUICK CRES
Paneiri Park
Turitea Stream
0 200 400 600 800 1000 metres

SECTION C

SECTION C SEEKS TO DETERMINE HOW OFTEN YOU USE THE MANAWATU RIVER FOR YOUR LEISURE AND RECREATION PURPOSES AND/OR ACTIVITIES.

PLEASE TICK THE BOX THAT BEST CORRESPONDS TO YOUR ANSWER.

1. I go and visit the Manawatu River during

- ☐ Weekdays
- ☐ Weekends
- ☐ Holidays
- ☐ Special events: Please specify _____

2. I go and visit the river usually in the

- ☐ Morning (5AM-11AM)
- ☐ Afternoon (11AM-5PM)
- ☐ Evening (5PM-10PM)
- ☐ Other time (Pls. Specify) _____

3. I go to the river

- ☐ alone
- ☐ with my husband/wife/partner
- ☐ with my children
- ☐ with my whole family
- ☐ with my friends
- ☐ with the club (Please specify) _____

4. I visit the river for

- ☐ A few minutes
- ☐ Half an hour
- ☐ One hour
- ☐ Two hours
- ☐ Three hours
- ☐ Half day
- ☐ Whole day

5. I go to the river to/for

- ☐ Relax
- ☐ Think
- ☐ Commune with nature
- ☐ Spiritual reasons
- ☐ Walk along path
- ☐ Watching birds
- ☐ Watch others recreate
- ☐ Play ball games
- ☐ Do exercises
- ☐ Picnic/barbecue
- ☐ Rafting
- ☐ Boating
- ☐ Motor boating
- ☐ Camp
- ☐ Water skiing
- ☐ Cycling for pleasure
- ☐ Others (Pls. specify) _____

6. I go to the river by

- ☐ Walking
- ☐ Jogging
- ☐ Cycling
- ☐ Car
- ☐ Motor bike
- ☐ Public transport
- ☐ Others (Pls. Specify) _____

6. Please rank the factors mentioned below according to the degree of influence it has on your pursuit of leisure and recreation activities.

1 - affect most	4 - seldom affect
2 - affect more	5 - least affect
3 - fairly affect	6 - don't affect

- ☐ Availability of my leisure time
- ☐ Family concerns
- ☐ Work
- ☐ Weather
- ☐ Travel time
- ☐ Access to river
- ☐ Others (Pls. specify) _____

7. I go and visit the river less often during (please rank the seasons mentioned according to the frequency of visit)

1 – seldom
2 – very seldom
3 – very unlikely
4 – not at all

- ☐ Summer
- ☐ Autumn
- ☐ Winter
- ☐ Spring

Comments _____

_____

_____

8. It seems to me that more people go and use the river during

- ☐ Weekdays
- ☐ Weekends
- ☐ Holidays
- ☐ Special events

9. It seems to me that more people go and use the river in the

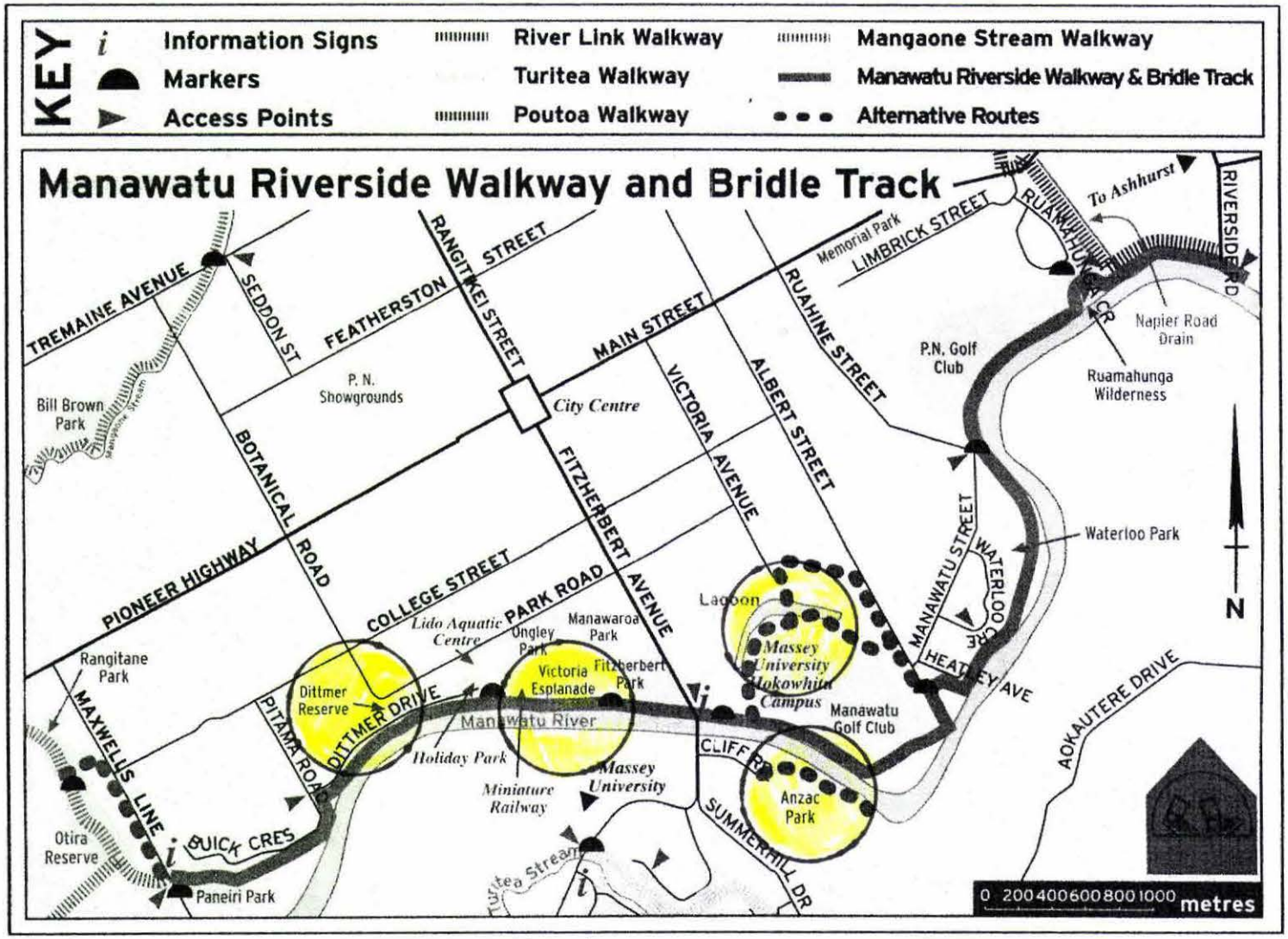
- ☐ Morning (6AM-11AM)
- ☐ Afternoon (11AM-5PM)
- ☐ Evening (5PM-10PM)
- ☐ Other time (Pls. Specify) _____

10. The shared enjoyments of outdoor recreation near the river reinforces social relationships between existing and new found friends in the community.

- ☐ Agree
- ☐ Disagree
- ☐ Not sure

11. Economic benefits resulting from outdoor recreation include improved health, well-being and job productivity.

- ☐ Agree
- ☐ Disagree
- ☐ Not sure



Favourite river areas.

APPENDIX 3

DEFINITION OF LANDSCAPE ARCHITECTS, LANDSCAPE SCIENTISTS AND LANDSCAPE MANAGERS

Professional roles and responsibilities:

Landscape architects are trained in the planning and design of all types of outdoor spaces. They use knowledge of the natural elements of the landscape, its materials and components, to create the spatial and aesthetic elements of the new environment. Many practitioners are also qualified in other disciplines such as horticulture, planning or architecture. They may develop projects into contracts and supervise their execution on site. Landscape architecture is classified as a professional occupation group under the International Standard Classification of Occupations (ILO, 1968).

Landscape scientists are concerned with the physical and biological principles and process which underlie the planning, design and management of natural resources. They have the ability to relate their scientific knowledge to the practical problems of landscape work. This can range from small-scale site surveys to the ecological assessment of broad areas for planning or management purposes, as well as preparation of reports on development impact or research into the importance of particular species in given areas. Landscape scientists usually have a scientific background, such as ecology, often with special skills such as soil science, hydrology, geomorphology or botany (Cobham, 1986).

Landscape managers use their detailed understanding of plants and natural environment to advise on the long-term care and development of the changing landscape. This involves them in the financial and physical organization of manpower, machinery and materials. They also have to consider statutory measures such as planning laws and grant aid schemes in order to preserve and enhance the quality of the landscape. Landscape managers usually have a degree in horticulture, forestry or agriculture together with further training in land management or other related disciplines (Landscape Institute, 1983).

APPENDIX 4

PRINCIPLES OF AN ECOLOGICALLY-BASED DESIGN

Ecology is the study of living organisms in relation to their environments. As such it should be the handmaiden of design. It allows us to understand (i) the basic requirements of plants and (ii) the ways in which plants interact when put into communities. But plant communities are themselves part of, and are influenced by, their physical surroundings, forming interacting ecosystems, which develop with time by the acquisition and cycling nutrients. Because environments and species are diverse so are the ecosystems which result. Ecologically-based design must account of all these fundamental processes or there will be poor growth and even failure. They should be incorporated into the actual creation of landscapes, whether in laissez-faire, positive construction, manipulation of development or restoration. What ultimately survives in nature is that which is best fitted to its environment (Bradshaw, 1986).

According to Bradshaw (1986), an ecologically-based design means it must be based on (i) awareness, and (ii) a use of the ecological principles which was previously discussed. McHarg (1969) advises to design *with* nature. If with can mean both *in agreement with* and *by means of*, is a wise advice. The first and perhaps most crucial element is a proper understanding of the environment of each site. This must include not only the climate but also the soil, even if this is to be brought in. It must also include possible influences and demands from man or animals, and the influences of other plants, especially those which may invade without invitation. The final product cannot be just a particular collection of pleasing plants; it will be a whole ecosystem subject to the same controlling and determining factors as other more natural ecosystems. Indeed, the 'genius of the place' need to be understood and follow in the footsteps of Kent and Pope (Dutton, 1937).

There are a number of different ecologically-based approaches, the first of which is remarkably simple – *laissez faire*. This allows natural ecosystem development. To let an area 'go wild' is not a silly idea. Many beautiful recent landscapes are due it. For example, the upper parts of Hamstead Heath are merely an old sand pit which supplied the needs of Georgian London. This approach is one way to carry out nature conservation (Goode and Smart, 1986).

The second approach is the opposite, *positive construction*. This can be seen as the traditional approach to landscape design, but the difference is that it uses ecological principles. The soil can be constructed. The materials which are present can be accepted as they are and not replaced or covered up. But they can then be improved as far as is required: perhaps by selective use of fertilisers, etc. to overcome particularly legumes which accumulate nitrogen as well as organic matter. This is the basis for modern land reclamation (Bradshaw and Chadwick, 1980) and discussed by Robert and Roberts (1986). Plants can be similarly used as engineering materials, for soil and slope stablisation (Schiechtl, 1980). The climate can also be modified as required by protective planting: splendid extreme examples of what can be done are at Logan and Inverewe (Cowan, 1964).

The plant community can itself be constructed to ensure ecological balance and soundness, i.e. by choosing species which are adapted not only to the physical environment, but also to co-exist with each other at the outset and subsequently as the ecosystem develops. It is this that has been called ecological planting and is discussed in more detail by Tregay (1986). However, it is crucial to realise that the mere sowing of a wild flower mixture or the use of particular native species are not themselves examples of ecologically-based design, unless the species have been carefully chosen in relation to the soil and intended. Indeed, an ecological approach may involve alien species (Bradshaw, 1986).

The third approach lies between the two previous; it is *manipulation of development*. Although ecosystem development is inevitable, it is worthwhile to remember that it can be managed by understanding ecology (Grime, 1980). A number of courses of action are open. For instance, the ecosystem can be protected with particular ecologically appropriate species and then leave them to their own devices. One example of this is the technique of tree seeding (Luke and McPherson, 1983). Another is the inoculation of specifically adapted wild species on industrial wasteland: if the species are chosen well the results can be remarkable (Ash, 1983). Ecosystems can be managed by the use of particular mowing, burning or other practices (Green, 1986), heathland being one of the best examples of can be achieved (Gimingham and de Smidt, 1983). But these practices must be actually used (Bradshaw, Goode and Thorpe, 1986).

The fourth approach is restoration. It is perhaps a combination of the previous three, applied now to a landscape which has been degraded. Here, almost more than anywhere, an appreciation of the qualities of the environment and the existing

ecosystem is essential. Often only one or two ecological problems may exist and have to be treated. This might involve no more than restoration of soil fertility. A good example is the importance of lime to restore the pH of city park grasslands (Vick and Handley, 1975). It might otherwise involve the replacement of one species contributing to the structure of the landscape by another more ecologically suited. But it can also be more radical, such as the wholesale removal and replacement of an ecosystem threatened by industrial activity. There are now splendid examples of what can be achieved, such as in pipelines through British moorlands (Putwain, Gilham and Holliday, 1983) and Australian mineral sand mining (reviewed in Bradshaw and Chadwick, 1980). But none of this can be done without ecological understanding.

APPENDIX 5

DESCRIPTION OF THE MANAWATU RIVER

The Manawatu River drains a catchment which is both east and west of the Tararua and Ruahine Ranges. The main stem of the river rises in the Ruahine Range northwest of Dannevirke on the eastern side of the divide, and passes through the ranges via the Manawatu Gorge. It then flows through the Manawatu and Horowhenua Districts to the west coast at Foxton. The catchment is shown in Figure 4.1.1. The area above the Gorge is often referred to as the upper catchment, whereas the lower catchment is downstream of the Gorge.

Major tributaries of the river include the Mangahao, Mangatainoka, Makuri and Tiraumea rivers in the east, and the Oroua and Pohangina rivers in the west. The highest point in the catchments is in the headwaters of the Mangahao River at an altitude of 1504 metres in the Tararua Range.

There are three small lakes formed as part of the Mangahao Power Scheme near Shannon. Dams 1 and 2 form on the upper Mangahao River. Dam 3 (Arapeti Dam) forms a lake on the Tokomaru Stream. The lakes are in an area of recreational use, although their own recreational use is limited because of the operational needs of the power scheme. Water levels fluctuate widely with storage requirements.

There are a number of small dune lakes in the lower Manawatu catchment. These include the Orouakaitawa Lakes and Swamp, which drain into the estuary near Foxton; and oxbows that once were part of the main river channel and are now bypassed. Some of these are valuable wildlife habitats.

Centennial Lagoon in Palmerston North is an oxbow. The lagoon and the associated public amenity area has high recreational value. It is an attractive urban park popular for walking, and where the most popular activities associated with the water are canoeing and feeding the ducks.

The catchment covers and area of 5,994 km , with 3,231 km east of the Gorge and 2,713 km on the west side. Land use in the catchment is predominantly agricultural with approximately 700 km of indigenous forest within the catchment, most of which is

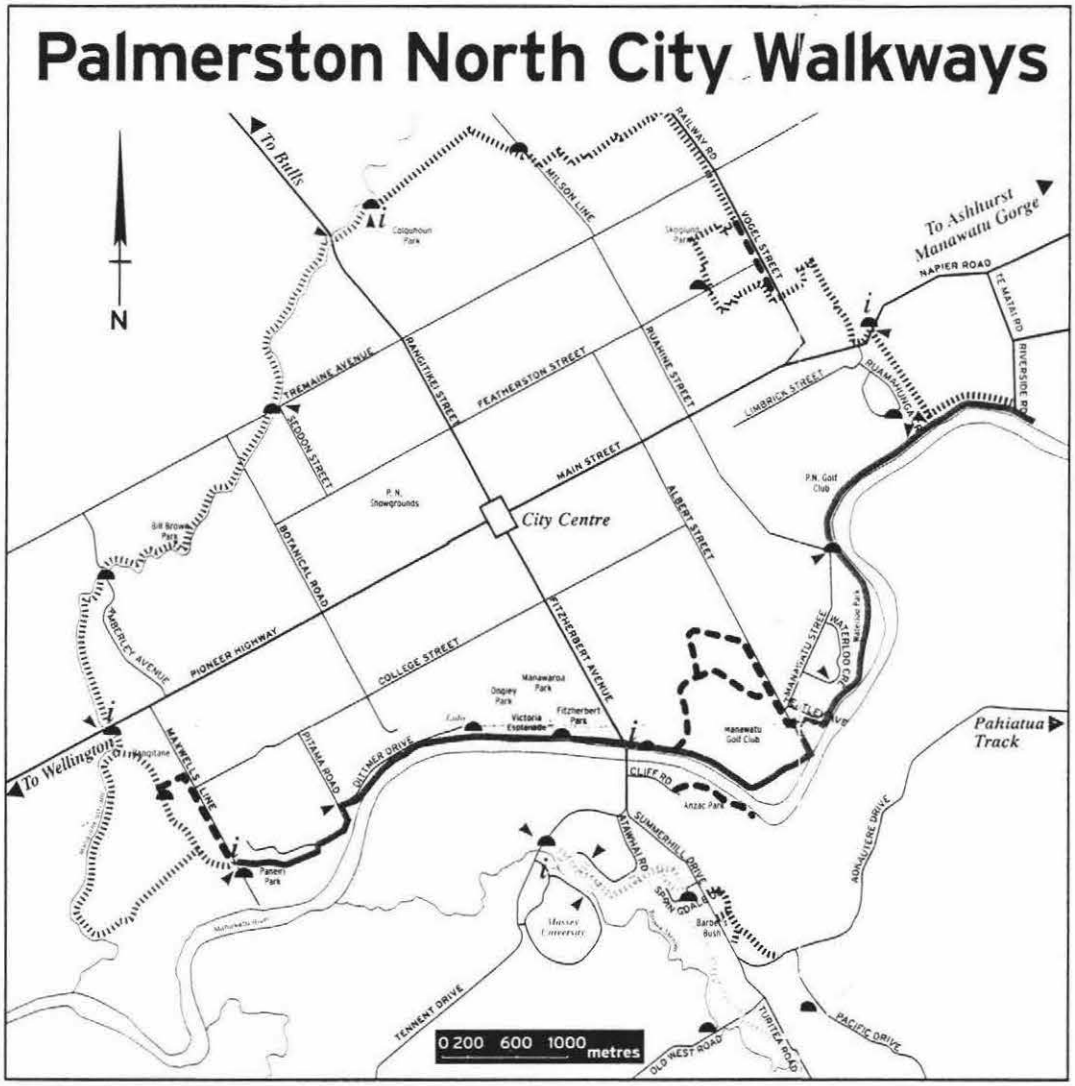
found on the Tararua and Ruahine Ranges with small areas on the Waewaepa and Puketoi Ranges.
Palmerston North (population 70,000) is the largest urban centre in the catchment. Other urban centres and rural communities include Foxton, Shannon, Ashhurst, Feilding, Woodville, Dannevirke, Pahiatua and Ekehatuna.

Water quality throughout the catchment is influenced by point source and non-point source discharges. Point source discharges in the catchment include 24 discharges of treated sewage, 32 discharges of industrial waste, 378 discharges from dairyshed and piggery effluent systems and an unknown number of urban and rural stormwater discharges. Non-point source discharges include breakdown products from waste discharged to land from 427 dairysheds and piggeries and 13 industries, leachate leaking from the rubbish tips, discharges from septic tanks sited near watercourses, and water runoff from forest and agricultural land.

Each discharge has an effect on the quality of water immediately downstream, and produces cumulative effect with other discharges. Water enriched by effluent discharges encourages undesirable biological growths such as sewage fungus and filamentous algae whose respiration removes dissolved oxygen from the water. In January 1978 severe night-time depletion of dissolved oxygen, caused by the night-time respiration of prolific growths of sewage fungus and algae, resulted in the deaths of hundreds of trout in the Manawatu River below Palmerston North. The prolific weed growths developed in response to the wastewaters discharged from the city and the nearby dairy factory and meatworks. Another major fish kill was recorded in 1984 (Manawatu-wanganui Regional Council, 1995).

APPENDIX 6

ILLUSTRATION OF THE WALKWAY SYSTEM



APPENDIX 7

RESOURCE MANAGEMENT ACT 1991 AND THE LOCAL GOVERNMENT ACT 1974

The Resource Management Act: Purpose and Principles

The Resource Management Act (RMA) came into effect on 1 October 1991. It is the principal statute for the management of land, soil, water, coast, air, and for the control of pollution. It sets out the rights and responsibilities of the Government, Regional Councils, Territorial Authorities and individuals for resource management. The Act replaced many previous statutes. It details the functions, duties and power of Regional Councils and Territorial Authorities for resource management. The Act complemented local government reform in 1989 by devolving many decision- making functions to local authorities.

The Resource Management Act differs from existing legislation in that it has a single, clear and overarching purpose: to promote the sustainable management of natural and physical resources. This purpose applies to every part of the Act. All those exercising functions and powers under the provisions of the Act will be required to ensure this purpose is realised. The Act provides a common set of principles to be applied to management of all resources.

The pivotal section is section 5, which states the purpose of the Act. Section 6 then sets out "matters of national importance" which have to be recognised and provided for in achieving the purpose of the Act. Section 7 sets out a list of other matters that may be relevant to achieving the purpose of the Act. Sectoin 8 is the Treaty of Waitangi section.

Section 5 states that the purpose of the Act is to promote the sustainable management of natural and physical resources. Section 5 (2) defines sustainable management as: "the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:

(i) Sustaining the potential of natural and physical resources (excluding minerals) to meet the

reasonably foreseeable needs of future generations; and

(ii) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(iii) Avoiding, remedying, or mitigating and adverse effects of activities on the environment. The definitions of "environment" (in section 2) and "effect" (in section 3) are very important to the Act and should be considered closely.

Section 6 sets out the matters of national importance as follows:

(a) The preparation of the natural character of the coastal environment (including the coastal marine area), wetlands and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.

(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.

(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers.

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

There is no priority in the order of this list. Those exercising functions and powers are required to have particular regard to other matter in achieving the purpose of the Act. These matters are listed in section 7 and are as follows:

(a) Kaitiakitanga

(b) The efficient use and development of natural and physical resources.

(c)The maintenance and enhancement of amenity values.

(d) Intrinsic values of ecosystems.

(e) Recognition and protection of the heritage values of sites, buildings, places or

areas.

(f) Maintenance and enhancement of the quality of the environment.

(g) Any finite characteristics of natural and physical resources.

(h) The protection of the habitat of trout and salmon.

There is no priority in the order of this list.

The Local Government Act 1974

The Local Government Act provides the administrative framework and covers management functions such as annual planning and community development and the procedures for creation of by-laws; establishes procedures for local authority operations. These include the preparation of Annual Plans, and Annual Reports on the implementation of those plans.

Section 289 under LGA is important with regard to setting aside local reserves along areas of water which states – (1) on every scheme plan submitted to the council under Part 20 of the Act, unless the council, with the consent of the Minister of Lands, considers it unnecessary to do so, there shall be set aside as local purpose reserves **[[**for esplanade purposes**]]** under the Reserves Act 1977 for the purpose of providing access to the sea, lake, river or stream, as the case may be, and to protect the environment, within the land proposed to be subdivided, a strip of land not less than 20 metres in width along the mean high-water mark of the sea and its bays, inlets, or creeks, and along the margin of every lake with an area in excess of 8 hectares, and along the banks of all rivers and streams which have an average width of not less than 3 metres (not being rivers or streams or parts of rivers or streams exempted from this subsection pursuant to subsection (7) of this section):

Provided that the council, with the consent of the Minister of Lands, may approve the reduction of the width of the strip of land to a width of not less than 3 metres if in its opinion the reduced width will be sufficient to give members of the public reasonable access to the sea, lake, river, or stream.

(2) Where –

(a) a strip of land less than 20 metres in width along the mean high-water mark of the sea or of any of its bays, inlets, or creeks, or along the margin of any lake, or along any bank of any river or stream has either –

(i) Been reserved for the purpose specified in subsection (1) of this section, or for public purposes pursuant to section 29 (1) of the Counties Amendment Act 1961 (as in force before the commencement of this Part of this Act; or

(ii) Been set aside or reserved for recreation purposes pursuant to any other enactment (whether passed before or after the commencement of this Part of this Act); or

(iii) Been reserved from sale pursuant to section 58 of the Land Act 1948 or the corresponding provisions of any former Act; and

(b) A scheme plan of subdivision of land contiguous to that strip of land is subsequently submitted to the council under this Part of this Act, -

(2) then notwithstanding that under subsection (1) of this section or under any former enactment the Minister of Lands had consented to the setting aside of the strip of land of less than 20 metres in width, the council may, as a condition of tis approval of the scheme plan, require the owner to set aside as reserved for the purpose specified in subsection (1) of this section a strip of land contiguous to the strip of land previously set aside and of a width determined by the council, being not more than the difference between the width of the strip of land previously set aside and 20 metres.

(3) Nothing in subsection (1) or subsection (2) of this section shall require a strip of land to be set aside as reserved **[[**for the purposes specified in the said subsection (1) or subsection (2), as the case may be,**]]** along the banks of any river or stream where that land adjoins any allotment having an area of 4 hectares or more and, in the opinion of the council, that allotment is intended to be used, or will continue to be used, wholly or principally in a manner conforming with accepted farming or management practices, for agricultural or horticultural or silvicultural or pastoral purposes or keeping of bees or poultry or other livestock.

APPENDIX 8

SPECIFIC FUNCTIONS AND DUTIES OF THE CENTRAL GOVERNMENT, REGIONAL AND DISTRICT COUNCILS

Central Government: Functions, powers and duties of the Minister for the Environment

The Minister for the Environment's role is an overview and monitoring one, with some areas of direct resource management responsibility. The Minister will be able to set environmental standards by regulation. The Minister may also recommend the making of regulations generally. The Minister will monitor the effect and implementation of the Act, including specific monitoring of water conservation orders and national policy statements.

The Minister for the Environment also has a role in approving requiring authorities for network utilities and heritage protection authorities and making recommendations on water conservation orders. The Act formalises the Minister's role in considering and investigating the use of economic instruments.

Ministers will have the same opportunities and obligations as other people within the resource management system. Any agency of central government will still be able to take part directly in statutory planning or consent procedures. However, there will be three new methods for central government to influence the operation of resource management:

- Statements of national policy to guide local government decisions.
- Opportunity for the Minister for the Environment to "call in" a proposal which raises matters of national significance in order to make a decision about it at a national level.
- The setting of national environmental standards by regulation for noise, contaminants, water, soil and air quality.
- The Minister is also able to appoint people to exercise the functions in place of local authorities where they are not performing their functions adequately. The Minister is also able to make grants and loans to achieve the purpose of the Act.

Functions, power and duties of the Minister of Conservation

The Minister of Conservation will provide a management framework for the coast through New Zealand coastal policy statements. The Minister's functions and powers also include approval of regional coastal plans and, in certain situations, a consent-granting function.

Powers of delegation

The powers that can be delegated, and to whom, are specified in section 29.

Functions, powers and duties of local authorities

Regional councils

Regional councils will have a pivotal role in the new resource management administration. Each region will have to prepare a regional policy statement which will set out the objectives for managing all resources of the region in an integrated manner.

Regional councils have been given primary responsibility for the management of water, soil, geothermal resources and pollution control. In addition, regional councils will have responsibility for regional aspects of natural hazard mitigation, soil conservation and hazardous substances. The latter does not affect existing functions of other bodies under legislation not affected by this Act. They also have joint control (with the Minister of Conservation) of various resource management issues in the coastal marine area.

Duty to consider alternatives

The Act requires decision makers to identify the most effective and efficient way of carrying out their functions and how this will best meet the objective of the Act. The Act recognises that there are a number of ways that resource management outcomes can be achieved, and that some of these fall outside the regulatory powers of the Act. The reasons for and against the various options, and their benefits and costs, must be considered before decisions are made. The reference to benefits and costs is not limited to the economic toll of cost benefit analysis. This obligation applies only to policy and plan preparation.

The Act recognises that for policy to be effective there must be systems to determine where and whether it is working. It outlines the monitoring obligations of resource management agencies and sets out requirements about the provision of information to the public.

Transfers and delegations

Within allocation of responsibilities, there will be opportunities to transfer and delegate resource management functions. Transfer between regional and territorial councils will be possible, to allow for more efficient decision-making. Such transfers will be by mutual agreement, and will require that the body that takes on the responsibility represents the appropriate community of interest and has the technical ability to perform the function. Councils will have powers to delegate to commissioners, committees and staff in order to increase the efficiency of decision-making. Delegation to staff and community boards, however, will not extend to plans, approval of a plan or any change to it. In addition, staff may not grant a resource consent for a notified non-complying activity.

Delegation does not remove responsibility and accountability for decisions. A duty to gather appropriate information, monitor, and keep public records is imposed on local authorities under section 35. The Act provides an ability to set user charges to help councils' administrative costs in carrying out the various processes required under the Act. Within this, safeguards and rules relating to user charges are provided (Ministry for the Environment, 1991).

APPENDIX 9

CONTEXT OF THE POLICY AND PLANNING FRAMEWORK

At the National level the Act provides for:

National Environmental Standards and Regulations

Technical standards in the form of regulations are made on the recommendation of the Minister for the Environment. These relate to the use, development and protection of natural and physical resources and may prescribe methods of implementing such standards. These are provided for in Sections 43 and 44 of the Act.

National Policy Statements

States policy on matters of national significance relevant to achieving the purpose of the Act. These are issued on the recommendation of the Minister for the Environment as provided for in Sections 45-55 of the Act.

No National Policy Statements were in effect at the time this Regional Policy Statement was notified.

New Zealand Coastal Policy Statement

States policies to achieve the purpose of the Act in relation to the coastal environment of New Zealand. This is prepared and issued by the Minister of Conservation. There must be one New Zealand Coastal Policy Statement which is prepared as set out in the Act in Sections 56-58.

The New Zealand Coastal Policy Statement was released by the Minister of Conservation and issued by notice in the Gazette on 5 May 1994.

Water Conservation Orders

These are issued on the recommendations of the Minister for the Environment as set out in Part IX of the Act. Their purpose is to recognise and sustain –

(a) Outstanding amenity or intrinsic values which are afforded by matters in their natural state;
(b) Where waters are no longer in their natural state, the amenity or intrinsic values those waters which in themselves warrant protection because they are considered outstanding (Section 199).

Orders may prohibit the granting of resource consents to dam, take water or discharge contaminants into water, or place other restrictions on the use of water.

In this Region, there are two existing national water conservation orders. These are for the Manganuioteao River and its main tributaries and the upper catchment of the Rangitikei River.

Heritage Orders

These are provisions made in District Plans by heritage protection authorities for protecting places of special interest, character, intrinsic or amenity value or visual appeal or special significance to the tangata whenua for spiritual, cultural or historic reasons. These are provided for in Part VIII of the Act.

The Act provides a hierarchical structure for these policies and plans. Although each is a statutory document in its own right they are connected through the hierarchy. This provides a consistent and integrated framework for resource management decisions.

Regional Policy Statements must not be inconsistent with any National Policy Statement, the New Zealand Coastal Policy Statement or Water Conservation Orders.

Regional Plans and District Plans must not be inconsistent with the Regional Policy Statement or other Regional Plans or any National Policy Statement, New Zealand Coastal Policy Statement or Water Conservation Orders.

Decisions or recommendations on resource consents and requirements for public works and for heritage protection orders must have regard to national policies, Regional and District policies, plans and rules Manawatu-Wanganui Regional Council, 1995).

APPENDIX 10

DEFINITION OF ESPLANADE RESERVES AND ESPLANADE STRIPS AND THE CONDITIONS FOR ITS ACQUISITION

Esplanade reserves are strips of Council reserve land, usually 20 metres wide, located along the edge of rivers, lakes and sea. The Act defines "rivers" as those which have a bed with an average width of more than 3 metres at "annual fullest flow without overtopping its bank". "Lakes" are those which have a bed of over 8 ha in area. Esplanade reserves are usually created at the time of subdivision, and are a type of financial contribution. The PNCC District Plan (2001) specifies which water bodies esplanade reserves will apply to, and the width of the reserve which will be sought. Esplanade reserves will be required irrespective of the size of the allotment being created. With allotments of 4 ha and over, the landowner must be compensated under RMA 1991 for the value of the land taken as a reserve. It is unfair to compensate people who create 4.1 ha blocks but not those who create 3.9ha blocks. Council will therefore pay compensation irrespective of the size of the allotment. Esplanade reserves and strips can be required by direct negotiation or purchase at any time, whether a subdivision is not proposed or not. They can also be transferred by mutual agreement to the Regional Council or the Department of Conservation (PNCC, 2001).

Esplanade strips also involve pieces of land of defined width (usually 20 metres) along the water's edge. Instead of being transferred to the Council, though, esplanade strip land remains in the owner's possession. A legal agreement is drawn up, obliging the landowner to allow public access or recreation and/or protect conservation values on a strip. This agreement is registered on the land title concerned and binds future landowners. The Act prescribes standard conditions applying to use of all esplanade strips including bans on vandalism and stock inference. Different sets of requirements can apply to strips, depending on whether they are created for protection of conservation values, for recreation, for public access, or for a mixture of things. For example, public access can be banned from conservation strips. Any person breaching the conditions of an esplanade strip (e.g., vandalism) commits an offence under the Act. It is also possible to close esplanade strips for specified periods during the year, such as lambing time. Esplanade strips do not need to be surveyed and move with any changes of river direction to maintain practical public access. If Council requires strips on allotments of 4ha and over, compensation for the loss of use of land is payable

under the Act. As with esplanade reserves, Council will also compensate people who subdivide blocks under 4 ha in area.

There are compensation and additional survey costs associated with esplanade reserves or strips. To be effective as a vegetation buffer, esplanade strips for water quality purposes need to be fenced to keep out stock. Such fencing work will also therefore enter into the compensation calculations. Weed control on esplanade reserves will be Council's responsibility, and on strips will be up to the landowner concerned. Esplanade strips are favoured as a tool rather than esplanade reserves. The only situation here esplanade reserves may be better is when there are plans to physically develop the water's edge as a park or a picnic area (Manawatu-Wanganui Regional Council, 2000).

APPENDIX 11

LIST OF RELEVANT STATUTES THAT MAY AFFECT THE PROVISION OF LEISURE AND RECREATION

Although, the Resource Management Act 1991 is the principal resource management legislation, other legislation impinges upon resource management activities. These must also be taken into account when resource policy is being formulated. Reference is made to these other statutes where either complementary action is required to enact a policy, and/or implementations is most appropriate under another Act (Manawatu-Wanganui Regional Council, 1995). For this study, the following statutes that may or might affect provision of leisure and recreation are relevant:

Statute	Purpose
Conservation Act 1987	Provides the mandate for the activities of the Department of Conservation. This includes the preparation of Conservation Management Strategies for publicly-owned land in the Region. These have regard to the Policy Statement. Otherwise, this Act does not impinge on local authorities. Under this Act, the department actively encourages recreational use of conservation areas, as well as protecting and preserving the natural and historic resources of those areas.
Reserves Act 1977	Establishes powers and responsibilities relating to acquisitions, classification and management of reserves for recreational, historic, scenic, native scientific or other purposes.
Walkways Act 1990	Provides for the establishment of walking tracts over public and private land for recreational purposes. The Act clearly states the purpose of this so that "the people of New Zealand shall have safe, unimpeded foot access to the countryside for the benefit of physical recreation as well as for the enjoyment of the outdoor environment and the natural and pastoral beauty and historical and cultural qualities of the areas they pass through".
Forests Amendment Act 1993	Ensures the management of an area of indigenous forest land in a way that maintains the ability of the forest to provide a full range of products and amenities in perpetuity, while retaining the forests natural values.

Local Government Act 1974	Provides the administrative framework and covers management functions such as annual planning and community development and the procedures for creation of by-laws; establishes procedures for local authority operations. These include the preparation of Annual Plans, and Annual Reports on the implementation of those plans.
Soil Conservation and Rivers Act 1941	The remaining parts of this Act relate largely to the operation of flood control or erosion control schemes.
Fisheries Act 1996	Provides for the use, conservation, enhancement, and development of fisheries resources so that people can provide for social, economic and cultural well-being while ensuring the potential of those resources to meet the needs of future generations, and avoiding, remedying or mitigating any adverse effects of fishing on the aquatic environment.
Marine Reserves Act	Preserves areas of the sea and foreshore in their natural state as the habitat of marine life. Subject to the primary purpose, the public has freedom of access to marine reserves "so that they may enjoy in full measure the opportunity to study, observe and record marine life in its natural habitat."
Health Act 1956	Provides for the protection, promotion and conservation of public health, including health and safety matters relating to water supply, sanitary works, building and trade wastes. It also provides for Territorial Authorities to control nuisances.

APPENDIX 12

FOUR OBJECTIVES OF THE PLAN (Regional Plan for the Beds of Rivers and Lakes and Associated Activities, Horizons.mw 2001)

Objective 1:

To maintain and enhance the specified values of rivers and lakes identified in Policies 8.1 and 8.3 of the Regional Policy Statement as outstanding and regionally significant natural features;

Objective 2:

To recognise and provide for the relationship of Maori, their culture and traditions with their ancestral lands, water, sites, waahi tapu and other toanga in beds of rivers and lakes.

Objective 3:

To enable the use and development of resources in, on or under the beds of rivers and lakes, while ensuring:

- any adverse effects on natural character, ecological, intrinsic, amenity or cultural values are avoided, remedied or mitigated; and
- the existing life supporting capacity is maintained or enhanced.

Objective 4:

To recognise and provide for physical resources in the beds of rivers and lakes, and sustain their potential to meet the reasonably foreseeable needs of future generations.

APPENDIX 13

BRL RULE 23: THE DISTURBANCE OF STOPBANKS OR TERRACES – RESTRICTED DISCRETIONARY

23.1 Any disturbance of stopbanks or terraces that involves:

a. excavation, drilling and tunnelling (as defined in Figure 23.1.1):

i. on a stopbank; or
ii. within the area 8 metres inland from the landward toe of the stopbank; or
iii. within the area 8 metres towards the river from the riverside toe of the stopbank; or
iv. on a terrace; or
v. within 8 metres inland from the top of the terrace;

other than soil cultivation; or

(b) erection, placement or extension of structures, fences, paths or steps on land between the river bed and a point 0.3 m from the inland toe of any stopbank or the top edge of any terrace or bank (as defined in Figure 23.1.1); or

(c) planting of plants on land between the river bed and a point 0.3 metre from the inland toe of any stopbank or the top edge of any terrace or bank (as defined in Figure 23.1.1); or

(d) disturbance or removal of plants, except as provided for by BRL Rules 18 and 19, planted by the Regional Council or its predecessor authorities on land between the river bed and a point 0.3 m from the inland toe of any stopbank or the top edge of any terrace or bank (as defined in Figure 23.1.1); and

that is undertaken on or adjacent to stopbanks or terraces contained within flood protection, erosion control or drainage schemes managed by or on behalf of the Regional Council is a **Restricted Discretionary Activity**.

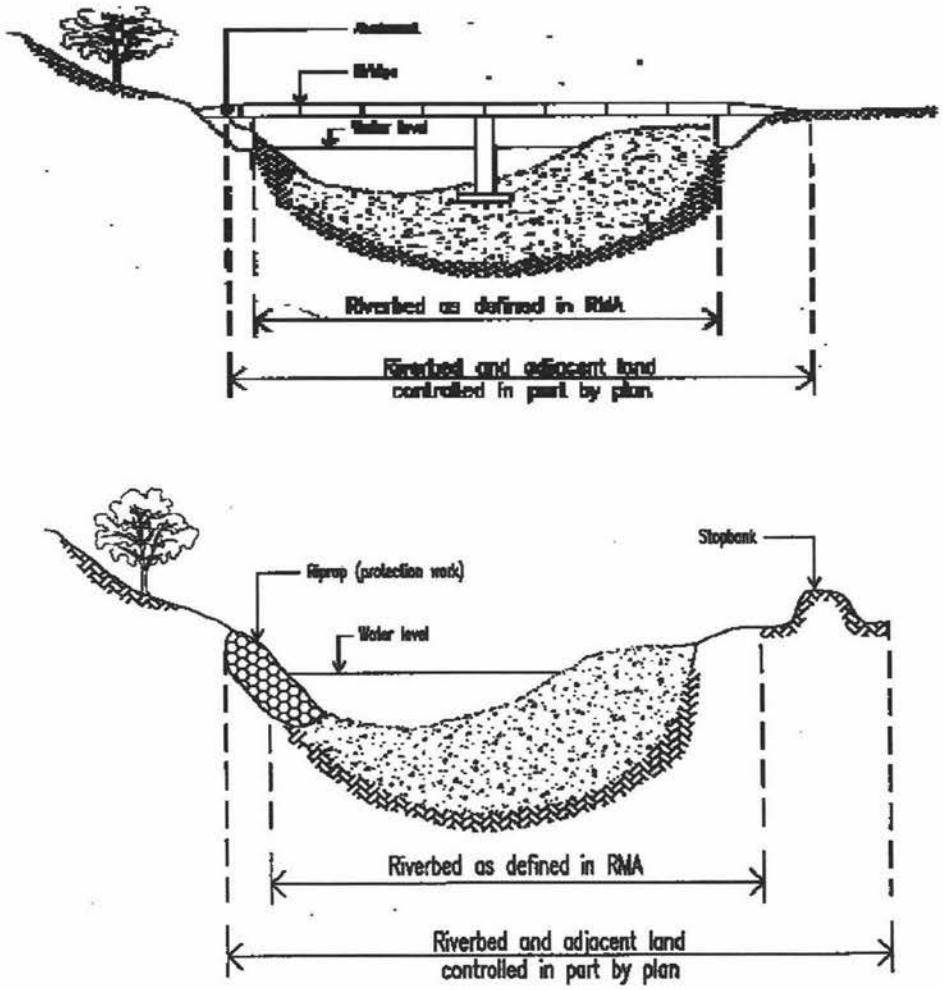
The Regional Council restricts its discretion to:

a. the effects of the proposed activity on the structural integrity of the stopbank, terrace or bank;
b. the effects on flood flows;

c. the duration of the consent;
d. the carrying of measurements, samples, analysis, survey, investigations at the consent holder's expense;
e. the provision of information to the Regional Council at specified time; and
f. payment of administrative charges.

The information required with resource consent applications for these activities is set out in Part Seven of the Plan.

Figure 23.1.1 Areas controlled by BRL Rule 23
(Source: Horizons.mw, 2001)



Advisory Note

Applications for consent under BRL Rule 23 will generally not be notified. In accordance with Section 94(1A) of the RMA 1991, the written approval of affected

persons need not be obtained if the Plan expressly permits consideration without notice. However under Section 94(5) applications may be notified if there are special circumstances in relation to the application.

The control of land use activities on stopbank, terraces banks and river berms is governed by Section 9 of the Act. Accordingly, all activities on stopbanks, terraces, banks and river berms are permitted other than those listed under BRL Rule 23 a. to d. above. This includes the maintenance and repair of existing established structures by land-owners.

APPENDIX 14

PNCC SUMMER FUN GUIDE 2001-2002

Summer Fun Guide 2001 - 2002

For all dates: see **Summer Fun Guide** available 1 December 2001

Please contact organisation running events before forwarding on enquires to our staff (where applicable).

For further information please contact the Recreation Advisor

Beginners Whitewater, Age 13+

Bridge Swinging with City Rock

Club Night on the Lake **with Palmerston North Canoe Club**

High School, Ages (13-17 yrs)

Kidz Kayaking, Ages (8 – 12 yrs)

Land Yachting at Coronation Park

Orienteering Fun, Walk, Bike Series (Red Kiwi Orienteering Club)

Pedal Pushers Triathlon Series

River Trips With Hilary's Adventures

Super 7 Run Series -with Manawatu Marathon Clinic

Super 7 Walk Series- with Manawatu Marathon Clinic

Timeless Horse Treks **(Evening Rides only - not treks)**

Timeless Horse Treks **2 day and 7 day treks**

OUTDOOR ADVENTURE ACTIVITIES

Land Yachting at Coronation Park

- Sunday January 7
- No bookings required
- Venue: Coronation Park

- Ian Mc Lachlan
- Gold Coast Land Yachting Club
- 330 Tremaine Ave
- Palmerston North
- Phone: (06) 354 2553
- E-mail: imaclandyachts@xtra.co.nz

Timeless Horse Treks (Evening Rides only - not treks)

- Twilight Tararua Windfarm Trek:**January 4,9** (4-9.30pm) , Ballance Gorge Rd, Pahiatua
- Riverside Trek and BBQ:**January 11,16** (4-9.30pm) , Ballance Gorge Rd, Pahiatua
- All bookings and inquiries to Cameron Horne

- Cameron Horne
- Timeless Horse Treks
- Ballance Gorge Road,
- RD 3, Pahiatua
- Phone : (06) 376 6157
- Fax:(06) 376 7188
- E-mail: no contacts available

Timeless Horse Treks 2 day and 7 day treks

- 2 day Treks **Jan 13-14 2001** and **Feb 10-11 2001** (Tararua Windfarm Trek- Ballance Gorge Rd, Pahiatua)
- 7 day Treks **March 4-10 2001** (Tararua Windfarm Trek- Ballance Gorge Rd, Pahiatua)
- All bookings and inquiries to Cameron Horne

- Cameron Horne
- Timeless Horse Treks
- Ballance Gorge Road,
- RD 3, Pahiatua
- Phone : (06) 376 6157
- Fax:(06) 376 7188
- E-mail: no contact available

Bridge Swinging with City Rock

- **Bookings at City Rock (open 10am - 10pm - 7 days a week)**
- **Statutory holidays closed**
- Jan 11, 27, Feb 8, 24 (Ballance Bridge, Woodville end)

- All inquiries to Scott Woods or City Rock Staff

    - Scott Woods or City Rock Staff
    - City Rock
    - 55 Taonui St or PO Box 1814,
    - Palmerston North
    - Phone : (06) 357 4552
    - Fax:(06) 357 4552
    - E-mail:city.rock@clear.net.nz
    - Web Site: www.cityrock.co.nz

Orienteeringwith Red Kiwi Orienteering Club

- **February 21, 28, March 4 2001 (different locations)**
- Different meeting places each time
- All inquiries to Robyn (06) 353 3262 or George (06) 358 8266

    - The Secretary
    - Red Kiwi Orienteering Club
    - Cheltenham
    - RD 7
    - Feilding
    - Phone : (06) 359 2162
    - E-mail:robynd@xtra.co.nz

Pedal Pushers Triathlon Series

- **Bookings on the day with Manawatu Triathlon Club at LIDO (9am)**
- Dec 3, 17 , Jan 28, Mar 11, 25 (LIDO)
- All inquiries to Grant Spiers (06) 355 4531 or e-mailspiers.and.co@inspire.net.nz

Super 7 Walk Series -with Manawatu Marathon Clinic

- **Registrations at Hockey Pavilion, Esplanade**
- January 16,23,30
- February 6,13,20,27
- All enquires to Judy Simpson (06) 358 8517 or Kevin Rickard (06) 355 4773

Super 7 Run Series -with Manawatu Marathon Clinic

- **Registrations at Hockey Pavilion, Esplanade**
- February 1,8,15,22
- March 1,8,15
- All enquires to Judy Simpson (06) 358 8517 or Kevin Rickard (06) 355 4773

Kidz Kayaking, Ages (8 – 12 yrs)

- 2 courses each week, one am, one pm , Maximum 12 persons
- All lessons at the**lagoon**
- Cost $45.00 per person, Family discount, two or more children 20%
- **Course 1:** December 14-16 10am-12noon and 1pm-3pm
- **Course 2:** December 18-20 10am-12noon and 1pm-3pm
- **Course 3:** January 17-19 10am-12noon and 1pm-3pm
- **Course 4:** January 24-26 10am-12noon and 1pm-3pm
- Bookings and payment to Sport Manawatu, Cuba St phone (06) 358 6004
- All inquiries Annie McKeagg on (06) 326 9365

High School, Ages (13-17 yrs)

- Two courses consisting of a pool session, lagoon session and river trip
- Maximum 8 persons
- Cost $55.00 per person
- **Course 1:** Feb 12,16,18
- **Course 2:** Feb 19,23,25
- Monday- pool session in the evening 4-5.30pm (providing we can get pool space, it may have to be later in the evening)
- Friday- lagoon session 4-5.30pm
- Sunday morning 10am-1pm river trip (Manawatu, Ruahine Street to Fitz. Bridge)
- All inquiries Annie McKeagg on (06) 326 9365

Beginners Whitewater, Age 13+

- Course consists of pool session, longer river trip
- Maximum 12 persons
- Cost $60.00 per person
- **Course 1:** Nov 28,30,Dec 2
- **Course 2:** Dec 12,14,17
- **Course 3:** Jan 16,18,20
- **Course 4:** Feb 13,15,17
- Bookings at Mountain Equipment

Contact details:

- Mountain Equipment
- The Square
- Phone: (06) 359 2162

River Trips With Hilary's Adventures

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