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Waikato Regional Landscape Assessment

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WAIKATO REGIONAL

LANDSCAPE ASSESSMENT

FEBRUARY 2010

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EXECUTIVE SUMMARY

In December 2008, Mary Buckland – Landscape Architect, O'Connor Planning Consultants Limited, Chow:Hill and GHD were commissioned by the Waikato Regional Council (also known as Environment Waikato) to undertake a landscape assessment of the Waikato region.

The Environment Waikato is currently reviewing its Regional Policy Statement (RPS). At the time the operative RPS was drafted, assessing and delineating landscape values was not considered to be a high priority and consequently landscape issues were broadly encompassed within the Heritage chapter of the Waikato RPS. Therefore there is little by way of a regional perspective on landscape provided within the existing RPS.

The context has changed since then. In order to discharge its Resource Management Act 1991 (RMA) functions, in particular its new function regarding the strategic integration of infrastructure with land use, the Waikato Regional Council has decided to become more involved in providing a regional perspective on landscape issues. The regional landscape is rapidly changing. Demand has increased for residential development in rural areas and areas close to rivers, lakes and the coast. Large scale forestry to pasture conversion has, and continues, to occur. Large wind farm developments are in the wings and new electricity lines are to pass through the region. With more large scale projects likely over the life of the Regional Policy Statement, the Council has recognised the need to manage the effects, including the cumulative effects, of development and other activity on regional landscape values.

The overall objective of the Waikato Regional Landscape Assessment was to provide the information and policy guidance required to develop a robust framework to bring about consistent and integrated management of landscapes and landscape values within the region while also providing an understanding of regional landscapes and identifying key elements of special landscapes so they are able to be appropriately managed and protected.

The Landscape Assessment was undertaken in three phases, being:

- Part A: Context and Overview of Approach to Landscape Assessment
- Part B: Landscape and Natural Character Assessment
- Part C: Policy Framework to Manage Important Landscapes

The assessment will provide a significant resource to the Council and others involved with resource management and landscape issues in the Waikato region. The assessment will assist local authorities, through the RPS, to meet s6 and s7 requirements of the RMA with respect to regional landscape and natural character values. It will also support the development of a consistent and integrated policy framework to guide how the regional council and territorial authorities in their respective functions achieve objectives for managing landscape values, natural features and natural character.

PART A

CONTEXT AND OVERVIEW OF APPROACH TO LANDSCAPE ASSESSMENT

PART A CONTENTS

MAP 1 THE WAIKATO REGION AND LOCAL AUTHORITIES

1.0 PART A INTRODUCTION

The purpose of this study is to provide Environment Waikato with the information and policy guidance required to develop a robust framework to bring about consistent and integrated management of landscape in the Waikato region. It provides an overview of the landscapes of the Waikato region and describes the pressures to which they are subject. It ensures that key elements of special landscapes are identified so that they can be appropriately managed and protected.

'Landscape' is the combined product of natural and cultural patterns and processes within a geographical area. Four systems contribute to landscape and landscape values – geomorphological (landform), ecological, economic (land use) and cultural/social (other than economic). Each of these factors contributes to patterns associated with land use. Landscape is therefore an integrating concept rather than a single resource. Landscape and landscape values encompass the relationship between the natural / physical environment and human patterns, human experience and perception.

The Resource Management Act 1991 ('the Act') requires regional and local councils to, amongst other things:

- Recognise and provide for the preservation of the natural character of the coastal environment, wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development as a matter of national importance (s6(a));
- Protect Outstanding Natural Features and Landscapes from inappropriate subdivision, use and development (s6(b));
- Maintain and enhance amenity values (s7(c));
- Maintain and enhance the quality of the environment (s7(f)).

It also requires regional councils to establish, implement and review objectives and policies to achieve the integrated management of natural and physical resources in their regions which includes landscape and amenity values (s30(1)(a)) and to prepare objectives and policies in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance (s30(1)(b)). Section 30(1)(gb) also requires regional councils to ensure the strategic integration of infrastructure with land use through the establishment and implementation of objectives, policies and methods. For the relevant provisions of the Act, refer to Appendix A.

In order to do this, councils need to assess the relative values of landscapes within their region including identifying any landscapes or natural features considered to be outstanding. The natural character values of the coastal environment, wetlands and lakes and rivers and their margins also needs to be assessed. There has been no previous region-wide landscape assessment undertaken by Environment Waikato. It is therefore important for a regional landscape assessment to be undertaken to ensure that the Council properly fulfils its functions as stated in the Act.

Whilst there have been some district landscape assessments undertaken within the Waikato region a regional assessment is required to ensure that regional council functions are fulfilled and integrated management can be properly achieved. This study will provide a regional landscape assessment as well as a guidance for policy framework to integrate regional and territorial authority functions that require landscape assessment or the consideration of landscape values.

At the time of preparing this report, the following are some of the landscape assessments that have been carried out in the Waikato region:

- West Coast Natural Character & Landscape Assessment - Kawhia, Aotea (Golder Associates)
- Rotokauri Western Hills Landscape Study (Boffa Miskell 2007)
- Natural Heritage - Taupo District (Wildlands Consultants)
- Natural Heritage of Waitomo District (Wildlands Consultants)
- Natural Heritage of Otorohanga District (Wildland Consultants)
- Natural Heritage of Waipa District (Wildlands Consultants)
- Coastal Headlands and Promontories LA (Boffa Miskell)
- West Coast Landscape Assessment
- Outstanding and Amenity Landscapes of Taupo District (Isthmus Group)
- Waikato Landscape Assessment
- Environmental Awareness Attitudes and Actions - Survey of Residental of Waikato Region (Environmental Waikato 2006)
- Natural Heritage of the Hauraki Districts (Kessels & Associates 2009)
- Kawhia Aotea Heritage (Lynette Williams 2008)
- Geodiversity of Geothermal fields in the Taupo Volcanic Zone (DOC Research 2007)
- West Coast Landscape Assessment (Golder Associates Dec 2008)
- Waikato District Landscape Assessment (Boffa Miskell 2004)

Over the past 17 years, a number of regional and district landscape assessments have been carried out in New Zealand. There is no universally accepted methodology for undertaking landscape assessments. Landscape architects and planners have devised their own assessment methodologies, with reference to the Act and to case law. Landscape architects have generally worked with local authorities to establish assessment criteria which are meaningful to the area.The approach to landscape assessments both within New Zealand and overseas is diverse with many different methodologies being employed. There are no nationally or internationally agreed standards for undertaking landscape assessments, however there are many commonalties, particularly in respect of the factors that constitute and influence landscape and therefore require assessment. For example most studies employ techniques that assess the physical environment as well as the human influence including people's perceptions of landscape values.

In order to assess and define landscapes and landscape values in the Waikato region this assessment will identify the physical, natural character and cultural elements of landscapes. This will then enable general landscape types to be described and identified and for landscape values to be determined. Once these landscape values have been determined across the region they will then be compared, and the outstanding and amenity landscapes will be identified.

Landscapes do not fit tidily into regional or district boundaries and there are inevitably cross boundary issues that emerge when carrying out a landscape assessment. Environment Waikato is undertaking a review of its Regional Policy Statement and it is opportune to consider cross-boundary issues at this time. In particular undertaking a regional landscape assessment will enable cross boundary issues related to landscape values across district boundaries to be better managed. Where there are cross boundary issues between regions, the study will identify areas where values need to be protected or jointly managed thereby providing a platform for discussion and action between the relevant regional authorities.

The primary areas of assessment that this study will address are landscape values, and natural character values throughout the region including the coastal environment. These terms are technical and not commonly used or understood. We have therefore provided definitions below:

Landscape values:

Landscape values are those values applied to landscapes and which contribute to some landscapes or landscape features being more highly valued or important than others. For example factors that contribute to landscape - the value of one over another - include:

- Natural science factors – the geological, topographical and ecological components of the landscape;
- Aesthetic values including memorability, expressiveness (legibility), vividness, cohesion and eminence;
- Natural character i.e. the degree of naturalness;
- Common values – whether the values are shared and recognised;
- Value to tangata whenua;
- Recreational values:
- Historical associations[1] and endemic qualities.

Coastal environment:

This terms refers to and includes the coastal marine area (i.e. the land seaward of MHWS); land and waters where coastal qualities or influences are a significant part or element; land and waters affected by active coastal processes; areas at risk from coastal hazards; coastal vegetation and habitat; and landscapes and features that contribute to the natural character and visual qualities or amenity values of that environment.[2]

Natural character:

This is a term used to describe the degree of 'naturalness' of the environment. The degree of natural character within an area is dependent on:

- The extent to which natural elements, natural patterns and ecological processes occur.[3]
- The nature and extent of modification(s) to the landscape, seascape and ecosystems.

[1] *Wakatipu Environmental Society and others v Queenstown-Lakes District Council [2000] NZRMA59/00*

[2] *Policy 1 – Proposed NZ Coastal Policy Statement 2008*

[3] *Natural Character – Concept Development in New Zealand Planning Law and Policy – page 93*

Some of the values relevant to landscape assessment are not directly related to the physical landscape character but are influencing factors such as historical associations and cultural values. These values will be considered in a regional context but will not be addressed in depth. Rather these are values that may be more appropriately addressed in greater detail at a district level.

As discussed, one of the outcomes of this landscape assessment is to identify Outstanding Natural Features and Landscapes.

There is also no universally accepted definition of 'Outstanding Natural Features and Landscapes' (ONFL), though the criteria established by the Environment Court decision Wakatipu Environmental Society and others v Queenstown-Lakes District Council [WESI criteria] are now accepted by the Environment Court and some landscape architects in New Zealand as a starting point for identifying outstanding landscapes.[4]

[4] *In the WESI case the Court stated that the word 'outstanding' means: '… conspicuous, eminent, especially because of excellence remarkable in …' (p.48)*

2.0 THE WAIKATO REGION

In the WESI case the Court discussed whether an outstanding natural landscape should be assessed and determined in a district, regional or national context. The Court concluded that the basis for assessment would depend on which authority was carrying out the assessment.

The Waikato region is the fourth largest region in the country. Covering most of the central North Island (approximately 25,000 km^2, or 2.5 million hectares) it has about 1,150 km of coastline. It extends from the Bombay Hills in the north down the west coast past Port Waikato to Mokau. Eastwards it takes in part of the Firth of Thames and the entire Coromandel Peninsula then follows the Kaimai Ranges. The region then extends down past Lake Taupo to the slopes of Mount Ruapehu in the south. The central defining landscape feature of the region is the Waikato River ('Waikato' meaning fast flowing river), which runs from Lake Taupo to its mouth in Franklin District.

The region contains:

- the longest river in New Zealand (the Waikato River)
- the largest lake (Lake Taupo)
- internationally significant wetlands
- some of the country's most important geothermal systems
- extensive native and exotic forests, and
- part of the Tongariro National Park, which is a World Heritage site.

The region fully includes eight districts and significant parts of four other districts.

The region is bordered by the Tasman Sea to the west, and the South Pacific Ocean to the east. It comprises landscapes of great diversity including volcanic peaks, explosion craters, extensive wetlands and lakes, fertile alluvial plains, and dramatic coastal features. A significant proportion of the region is volcanic in origin; primarily it's southern and eastern portions, with a large area of sedimentary rock including greywacke, limestone, mudstone and sandstone located mostly in the west. A smaller portion of the region is comprised of alluvial sediments laid down by rivers, located in the Hauraki Plains and around Hamilton.

Historically, Maori and European settlements grew alongside rivers and the coast, close to areas rich in natural resources. Many of today's towns have developed around these early settlements. Tangata whenua of the Waikato region are believed to have originated from the Tainui and Te Arawa waka, part of the fleet of canoes that arrived from Polynesia around 1350 AD. Pre-European settlements were small and scattered. Their settlements were often on headlands or river terraces that could be defended. Early European settlers were traders and missionaries. Mission stations were set up at Kawhia, Mangapouri, Matamata and Pukawa.

From the 1880s dairy farming became the main agricultural activity in the Waipa and Waikato areas. Small towns grew near dairy factories. Settlements also grew around gold mines in the Coromandel Peninsula and coalmines near Huntly. Rivers were used for transport. Hamilton, on the Waikato River, became a busy centre of economic activity.

The last hundred and fifty years have seen sweeping changes to the region's landscapes. Changes have occurred as a result of the invasion of the Waikato[5], which was then part of the King Country, during the Maori land wars of 1863 to April 1864. The outcome of the war was that approximately 12,000km^2 of Maori land was confiscated by the colonial government. There have also been changes in settlement patterns, farming regimes and the ways in which natural and physical resources are valued and used. Early last century, most of the hill country was developed for farming. After World War II service towns and industries thrived and small settlements grew around hydroelectric dam constructions. Native timber was logged north and west of Lake Taupo and on the Coromandel Peninsula. Pinus radiata planted in the 1920s and 1930s started today's plantation forestry industry.

Government incentives during this period promoted sheep and cattle farming and bush clearance, so more land was put into farms and forestry. Much of this was marginal land and could only be farmed with the use of fertiliser.

With increasing mobility and leisure time, New Zealanders headed for the beach. Many coastal areas, such as around the Coromandel Peninsula, were subdivided and developed for vacation housing. For many years road access to these areas limited growth to primarily holiday housing because the roads were gravel and also narrow.

In the economic recession of the 1970s, changing markets and automated industrial production meant less employment in the coal and timber industries. The number of people living in Huntly and Tokoroa fell. In the 1980s, New Zealand's economy was restructured. This meant many industries were deregulated and services hitherto operated by government were privatised.

During this time farming subsidies were removed. As a result farming had to be more efficient, which often meant more intensive use of good land and larger but fewer farms on marginal land. Without subsidies some areas became uneconomic to farm, and the land reverted to scrub and gorse on its way back to native forest.[6]

During the 1980s there was also a significant rationalisation in terms of the services available in many smaller rural towns. Many lost services such as banks and post offices and some schools closed.

[4] *http://en.wikipedia.org/wiki/Invasion of the Waikato*

[6] *McKinnon, M. (Ed.), Bradley, B. and Kirkpatrick, R. 1997: The New Zealand Historical Atlas: Ko Papatuanuku e Takoto Nei. David Bateman, Department of Internal Affairs, Wellington.*

Since the 1980s positive economic growth based on primary production (farming, horticulture, forestry, and aquaculture), urban, coastal and rural residential development, tourism, industry, energy processing and production as well as other activities such as mining has continued throughout most of the Waikato. This economic growth has lead to agricultural intensification and urban development and expansion in key areas such as Hamilton, Taupo, Whitianga and surrounding parts of the Coromandel Peninsula as well as Raglan.

Figures from the Statistics New Zealand 2002 – Agricultural Census state that:

- 69.11% of land in the agricultural land in the Waikato region is used for grazing, arable, fodder and fallow purposes;
- 0.58% is horticultural land;
- 19.06% is planted production forestry;
- 11.24% of the land is used for other activities such as urban development.

The growth has resulted in additional demand for residential, commercial and industrial land uses. Increased affluence and access (reduced travel times) to main centres has encouraged a demand for rural residential lifestyle living. The growth of lifestyle blocks and holiday homes has caused intensification in peri-urban areas and in parts of the coastal environment. Some prominent landscape areas are also subject to these pressures.

Hamilton is growing at approximately four times the average national growth rate, and based on historical urbanisation trends continued growth can be expected. Advances in communication and transport technology as well as increasing inter-connectivity between close urban centres, such as Auckland, all support this growth.

During this phase recreational and tourism activities have continued their popularity in the region. The range of recreational and tourism opportunities has diversified and supporting facilities such as accommodation, restaurants and transport continue to experience growth.

The changing land use patterns in the region are continuing as a result of growth pressures and changes in rural production activities. For example, large areas between Tokoroa and Taupo are converting from production forestry to dairying. These changes in turn are affecting landscape patterns throughout the region.[7]

[7] *Iwitiniopolis: Past and Future Urban Regions, Barry Rae & Sonia Anderson*

MAP 2 TOPOGRAPHICAL AREAS

3.0 AN OVERVIEW OF THE WAIKATO AND IT'S LANDSCAPES

The operative Waikato Regional Policy Statement broadly divides the region into four distinct topographical areas largely based on the underlying geology, soil stability and land uses. The four areas identified are:

- Central Volcanic Region
- Western and Central Hill Country
- Waikato Lowlands and Hauraki Plains
- Eastern Ranges and Coastline.

These four topographical areas have been further broken down into smaller landscape areas which more closely reflect their particular characteristics, including landscape, topography, settlements, land use patterns and vegetation. These smaller landscape areas will form the basis for the landscape character types to be developed later in Part B.

A landscape type is:- a broadly defined landscape area that has a recognisable pattern of physical elements. Variations in geology and soils, landform, land use and vegetation, and settlement patterns give rise to different landscapes each with its own distinctive character and unique sense of place.

The landscape types discussed in Part A of this report are

1. Central Volcanic Region
2. Western Hill Country
3. Central Hill Country
4. Waikato Lowlands
5. Hauraki Plains
6. Eastern Ranges
7. Eastern Coastline
8. Western Coastline

These areas are identified on Map 2 opposite.

3.1 Central Volcanic Region

The Central Volcanic Region is located in the central North Island and in the southern portion of the region. Extensive sheets of ignimbrite – a hot suspension of particles and gases that flow rapidly from a volcano – spread east and west from the Taupo Volcanic Zone, to the flanks of the three volcanoes of Mount Tongariro, Mount Ngauruhoe and Mount Ruapehu in the south. These volcanoes reach elevations of over 1900m to nearly 2,800m in height and are a significant landscape feature for the surrounding area, particularly when viewed across Lake Taupo. The summit of Mount Ngauruhoe is shared by both Waikato and Manawatu-Wanganui regions. The summits of Mount Ruapehu and Mount Tongariro lie in the Manawatu-Wanganui region, whilst the north-eastern slopes of Mount Ruapehu, the eastern slopes of Mount Ngauruhoe and significant parts of Mount Tongariro, including the lakes on Tongariro, fall within the Waikato region. Part of the Tongariro National Park, which is recognised as a world heritage area, is also located within the region.

Photo 3.1 Mount Ngaruohoe

The Central Volcanic Region also includes Lake Taupo, the Mamaku Plateau, parts of the Kaingaroa Forest, and the Rangitoto range. The landscape around Lake Taupo is predominantly undulating hill country. To the west and south the landforms are steeper and covered in regenerating bush and exotic forestry, while to the north east – the Mamaku Plateau – is seamed with steep sided gorges and gullies. The landform includes ignimbrite tors and rhyolite domes that give the landscape a bumpy appearance. There are groups of native trees, and overall this is a very distinctive landscape.

Besides the landscape features which have resulted from the volcanic activity, there are also a number of active geothermal features including geysers, mud pools, steam vents and hot springs located around Lake Taupo and in the area between Taupo and Rotorua. Lake Taupo itself is a caldera formed by one of the most explosive and largest volcanic eruptions in recent history (1800 years ago)[8], which ejected hundreds of cubic km of magma onto the earth's surface. The ground subsequently collapsed into the emptied space to form a caldera. At its widest point Lake Taupo is 30 km across.

[8] *Taupo Eruption, ca. A.D. 186*

Large parts of the Central Volcanic Region are covered in exotic forests with stock grazing and dairying in places. However, this exotic forest land use is changing as large areas are being converted to pasture for dairying.

Taupo is the main town in the area and the district has high tourist numbers because of the high landscape values, volcanic and geothermal activities and also its central North Island location. Recreational activities associated with Taupo include skiing, tramping, numerous water sports such as kayaking, boating, water skiing and trout fishing.

Tongariro National Park is a sensitive landscape where pressure from recreation and tourism is negatively affecting the landscape. The Tongariro crossing for example is a sensitive environment that is subject to a high level of demand from tourists and local people seeking recreational experiences by walking it. The walk has been rated as the best one day trek in New Zealand and one of the top 10 day treks in the world.

Pressure for more rural residential development and holiday homes in and around Taupo is also having adverse effects on the landscape surrounding the town and Lake Taupo itself.

The visual impact of transmission lines and towers are a feature along the west side of Lake Taupo adjacent to State Highway 32, and alongside State Highway 1 south and north of Taupo.

Photo 3.2 Satelite picture of Lake Taupo (source: Wikimedia Commons www.commons.wikimedia.org)

3.2 Western Hill Country

The Western Hill Country located along the west coast of the Waikato region is the western hill country. It includes the hills to the west of Hamilton, Te Awamutu and Te Kuiti between the Waipa River and the coast. It also includes the hills to the north west of Hamilton, between the Waikato River and the coast, as well as the hills to the south west which include the Herangi Range. The height of the hills gradually reduces to the north and they include both volcanic and sedimentary rocks often overlaid by a thick layer of volcanic ash. Land cover includes areas of pasture, exotic forestry and large tracts of indigenous forest especially to the south of Kawhia.

Photo 3.3 Mount Karioi

Photo 3.4 Mount Karioi

The Pirongia Forest Park (managed by the Department of Conservation) is located west of Te Awamutu and includes two extinct volcanoes – Mount Pirongia (959m) and Mount Karioi (756m). The two cones are covered in dense indigenous vegetation which changes with altitude. Rimu and totara are found on the lower slopes along with tawa and tree ferns. Further up the slopes are mountain flax and coprosma. There are walking tracks throughout the forest park varying from short rambles to 10 hour hikes.

Between the groups of hills and volcanic cones, roads run east/west to the coast.

Pastoral farming is the predominant productive rural land use. The majority of farms consist of hill country.

There are coal deposits near Mokau, west of Huntly and east of Taharoa.

In the hills west of Otorohanga there is an extensive system of limestone outcrops featuring pinnacles, as well as caves. The limestone forms the karst topography – an amalgamation of caves, underground channels, outcrops, and a bumpy ground surface. Waitomo caves are located in this area which is a focus for recreation pursuits and tourism. Activities include black water rafting, organised and informal caving, and glow worm tours and associated services and activities, such as accommodation and restaurants for domestic and international visitors.

The karst landscape and associated caves are a special feature of the Waitomo District. The effects of land development and other human activities on the cave systems are somewhat uncertain and are the subject of continuing scientific study. However, there is concern about the effect of some forms of development such as quarrying or large scale land disturbance on the karst and associated cave systems.

3.3 Central Hill Country

The Central Hill Country comprises the southern section of the Hunua Range, the Hapuakohe Range, Mangakawa and Hangawera, and the hills around Te Miro and Maungatautari. These hills and ranges vary in elevation from around 400m to nearly 800m and are comprised of sedimentary and volcanic rock. The hill country comprises rolling and steep landforms, with a mix of pasture, some mature bush in the gullies and along the higher tops, with pine plantations in places. There are also other exotic tree groups on the lower slopes.

There are a number of quarries on the lower hill slopes which are quite visible. Morrinsville is located in the centre of this area; the railway lines from Hamilton, Paeroa and Rotorua meet at Morrinsville, and the Hamilton-Paeroa main highway passes through the town. The main primary industries of the area, which is one of the most intensively farmed areas in New Zealand, are dairy farming and fat-lamb production. There are dairy factories at Motumaoho, Tatuanui and nearby at Waitoa. A large fertiliser works is located 2 km south of Morrinsville.

In the past few years Maungatautari has been established as an ecological island by the Maungatautari Ecological Island Trust and the native forest area of the extinct volcanic cone is surrounded by a 47 km long pest proof fence.

Photo 3.5 Maungatautari

A 200 kV transmission line runs west of these hills, and there is a proposal for a 400 kV line through this area.

Significant population growth has been experienced in many of the small rural towns in this area such as Morrinsville, Waihi and Matamata for example. This puts pressure on the amount of residential land available. The demand for more residential development not only poses a threat to the rural landscape through rural residential development but also potentially compromises the future use of good quality lands and soils. A further land use issue is the use of land for farming, growing or running animals near outstanding natural features, such as Maungatautari, where the release or escape of stock or pests could adversely affect these features and their biodiversity.

3.4 Waikato Lowlands

The Waikato Lowlands are flat and low lying in contrast with the surrounding hill country. They comprise pasture, hedges, groups of both exotic and indigenous trees, and has a well maintained and developed landscape character.

The Waikato River is the central feature in this landscape, with Hamilton as the main city.

There are a large number of remnant peat lakes and swamps in the lowlands, such as the Rukuhia and Moanatuatua swamps, Opuatia wetland and the Whangamarino wetland which is internationally recognised by the Ramsar Convention. The undeveloped parts of these peat lands have a range of values including botanical and wildlife habitat, flood control, scientific and aesthetic values.

Photo 3.6 Waikato River through Hamilton City (source: Hamilton City Council Image Library, www.hamilton.co.nz)

Lake Waikare and a number of other lakes are located adjacent to Huntly and Te Kauwhata. There are also a number of peat lakes closely associated with the State Highway 3 corridor between Hamilton and Te Awamutu. They lie on the flat land at the base of the State Highway 3 ridge.

The peat lakes are highly valued ecologically and are surrounded by raupo and flax, and willows in places. There are also groups of kahikatea in the pasture surrounding them. The combination of lake and wetland fringe gives these lakes very high natural character values. The surroundings to these lakes are highly sensitive to change.

In general the land use comprises market gardening, fruit growing, arable farming, cattle and dairy farms, stud farms and racing stables.

The main pressure on this area is the demand for residential homes in a rural setting – i.e. rural residential development, particularly given the large nearby populations of Auckland and Hamilton. State Highway One runs along beside the Waikato River, and two 200 kV lines cross the Waikato River north east of Hamilton.

There are coal deposits between Pukekohe and Huntly.

3.5 Hauraki Plains

As with the Waikato Lowlands the land within the Hauraki Plains is very flat and low lying. The steep slopes and ridgelines of the neighbouring landscapes strongly define the edges. Pasture stretches as far as the eye can see in places, though there are occasional clumps of remnant kahikatea which are very characteristic of this area. Looking down from above, the plains are a patchwork of rectangular fields in varying shades of green.

Photo 3.7 Hauraki Plains (source: LA4, *Hauraki District Landscape Assessment)*

The Hauraki plains are extensive alluvial plains formed by sediment deposited by the Waikato, Waihou, Waitoa and Piako Rivers. The soil is rich and fertile.

The flats also include relatively large areas of swamps, wetlands and peat soils. These include the Kopuatai Raised Peat dome which is recognised as a wetland of international importance under the Ramsar Convention. It is the largest raised bog in the southern hemisphere. These are the remnants of a huge wetland, which once stretched from the Hauraki Gulf to Matamata and have a range of values including botanical and wildlife habitat, flood control, scientific and aesthetic values.

Photo 3.8 Kopuatai Raised Peat Dome, Hauraki Plains (source: LA4, *Hauraki District Landscape Assessment)*

Land use on the plains is mainly dairy cattle farming. Although dairy farming is the main industry it is not the only farming industry. Poultry operations and cropping also occur in the area. The area is dotted with groups of native and exotic trees particularly around farm houses and buildings, with hedges along road frontages and paddock boundaries also being a feature.

Since the arrival of the pakeha the plains have been drained. Stop banks and drainage channels and canals have been connected, running in a rectilinear pattern across the plains. In places property boundaries are clearly defined by fences, hedges and/or shelter belts.

These developed areas of the plains retain very little of their original natural character except for a few undeveloped remnants of rivers, wetlands and coastal margins.

As with the Waikato Lowlands, the main pressures on the landscape values of this area are the demand for residential homes in a rural setting and the farming activities that occur on the land. As the land is flat, the landscape is visually exposed and open. Additional rural residential development therefore poses a threat to the loss of openness in the landscape as well as high quality farm land. Farming on the other hand poses threats to the quality of the environment from associated activities such as the construction of farm races, dams, and large buildings required for intensive farming activities such as poultry operations. These activities can have adverse impacts on the environment in terms of visual effects and effects on water and soil quality.

Further, stands of high quality native bush (primarily kahikatea stands) contribute to the landscape character. Much of this bush is located on private land which is used for farming activities. Many of these stands, even if legally protected, remain unfenced. This is a potential threat to this landscape feature as grazing and other farming activities occurring amongst these stands of trees, will over time, lead to a decline in the quality and quantity of these remnant bush stands.

3.6 Eastern Ranges

The Eastern Ranges comprise the Coromandel and Kaimai Ranges and the summits typically range in elevation from around 500m to in excess of 900m. The landscape character of the ranges is determined by the massive volcanic features, which form a strong and distinctive backbone to the Coromandel Peninsula. The ranges create a strong visual backdrop to the Hauraki Plains. The Coromandel Range has a series of very impressive peaks, pinnacles, and rocky outcrops, which can be seen from many parts of the region. The skyline of the ranges is unique to this part of the Waikato and forms the backdrop for literally hundreds of views from roads and settlements.

Photo 3.9 Castle Rock, Coromandel Range (source: LA4, *Landscape Assessment of the Coromandel Peninsula*)

The ranges have a steep and deeply incised form with gorges and 'v' shaped valleys running through them. They have a significant portion of native forest cover, except for some large areas of pine plantations. The bush varies in quality from very mature high quality forest to forest that has been regenerating for only 20 years or so. The forest cover gives the ranges a homogenous quality. The ranges also have a sense of wildness and remoteness, and form the basis for a nationally significant tourist and recreational resource. Much of the Coromandel Range is in public ownership and administered by the Department of Conservation.

The Martha Mine in Waihi is the largest opencast gold and silver mine in the country. Dairying is the predominant land use on the low lying areas, with horticulture on some good quality soils. Dry stock and sheep farming is undertaken on the higher steeper ground. Exotic forestry is an increasing land use occurring on the ranges.

The ranges have been a source of kauri timber in the past, as well as gold mining. The Hauraki Goldfield is considered to be the most highly prospective area of precious metal mineralisation in New Zealand.

The main pressures on this landscape are the potential for new gold mines, and the spread of exotic forestry, pasture or quarrying over the ranges on land not in public ownership. These activities have the potential to threaten the landscape quality and the landscape character of some areas, particularly those areas that are elevated.

In addition to the above of the Eastern Ranges activities mentioned, rural residential development creeping up the slopes also poses a significant threat to the quality and character of this landscape. Due to the topography of the land such development results in the need for earthworks to construct access ways and building platforms. In many instances these earthworks result in vegetation removal and the combined effects on the landscape can potentially be significantly adverse.

3.7 Coromandel and Eastern Coastline

The Coromandel and Eastern coastline includes the coast of the Thames Estuary and the coastline of the Coromandel Peninsula and Hauraki Districts.

The coastline of the Coromandel Peninsula contains some of the most picturesque and high quality coastal landscapes in New Zealand. There is a wide range of coastal landscapes including coastal slopes with mixed pasture, exotics and bush, sheltered harbours, small enclosed bays, white sand beaches backed by dunes, distinctive rocky headlands, cliffs, and large expanses of bush covered hills. Thames is the main town on the Coromandel Peninsula and is situated on the inner Firth of Thames. There are other significant settlements on the east coast of the peninsula at Whangamata, Tairua, Pauanui and around Whitianga.

Further south along the east coast of the Hauraki District, the coastal landforms are steep, bumpy and rolling with a mixture of native and exotic vegetation and pasture. Whiritoa, a small seaside settlement, and a number of other beaches and bays including Mataora Bay, are located on this area of coastline. For some stretches of the coastline the land drops straight into the sea in the form of distinctive white and pink cliffs.

Photo 3.9 Cathedral Cove cliffs, near Hahei, east coast of the Coromandel Peninsula (source: LA4, *Landscape Assessment of the Coromandel Peninsula*)

The vegetation is mixed – pasture, pine plantations, and indigenous forest ranging in maturity from recent regeneration through to semi mature. Pohutukawa trees are a feature on coastal slopes.

The eastern and southern coast of the Firth of Thames is part of this area. The Miranda shell bank is an extensive shell bank (chenier plain) located along the south western margin of the Firth of Thames. It is the only chenier plain in New Zealand.[9] Chenier plains form from old beach ridges that are left inland as the shoreline moves seaward. They are unique and globally rare landforms. The estuarine and mangrove southern shorelines of the Firth of Thames support dense populations of wetland dependent birds, many of which are rare or uncommon species. This area is recognised as a wetland of international significance under the Ramsar Convention. Aquaculture is also a feature in parts of the Firth.

There are also a number of Department of Conservation owned lands along the Coromandel Peninsula offering protection to the landscape and ecological values of these areas for example Story Baby, Waikawau.

Settlement patterns related initially to coastal trading, fishing, logging and gold mining. More recently these patterns haveevolved to relate to the attractions of the coastline, the landscape, and to recreational and beach opportunities. The main pressures on this landscape are the demand for more holiday housing and rural residential development. These pressures are particularly apparent on the east coast of the Coromandel Peninsula resulting in pressure for additional and upgraded infrastructure as well as extensions to existing settlements and new subdivision. Development in these locations has the potential to threaten the values associated with the coastal environment as well as the related landscape units adjoining the coastal environment which in many instances are elevated.

[9] *www.ew.govt.nz*

3.8 Western Coastline

The Western Coastline of the Waikato region runs from just north of the Waikato River mouth to Mokau in the south. This coast includes Raglan, Aotea and Kawhia harbours, which have extensive estuaries inland from their mouths, on which the settlements of Raglan, Aotea, Kawhia and Makatu are located. There are also small settlements south of Kawhia close to the coast.

There are long stretches of beach, rocks, cliffs and headlands, dunes and sand hills. In places the indigenous forest runs from the top of the hills down to the coast. This coastline is relatively remote and exposed. Access to the coast is constrained, with very few roads giving access south of Kawhia Harbour. This coast is one of the best surfing areas in the country and there is continuing pressure to open up access to good surf beaches. Due to the exposed nature of the coastline, coastal erosion is a significant issue in some locations, particularly where there are existing settlements such as at Mokau. The frontal dunes at Mokau are identified as a high risk coastal erosion zone and the location represents a difficult combination of issues with a west coast dune system that is adjacent to a river mouth.

Photo 3.10 Kawhia

The main farming activities are sheep and cattle grazing.

Between Raglan and Port Waikato there is no public road access to the coast. The distinctive characteristic of this coast is its remote, open quality and lack of development.

Iron sands have been mined along the coast from north Taranaki to Kawhia Harbour, and new proposals are being put forward at present. The only remaining sand mining in the region is the iron sand mining at Taharoa, south of the Kawhia Harbour and at Maiaro; near Port Waikato.

The west coast is in places wild and scenic, and limited road access has restricted development in the past. However, with road improvements and improvements in technology there is increasing demand for development on the west coast. People from Auckland, Hamilton and New Plymouth use parts of this area, particularly around Raglan, the Aotea and Kawhia harbours and Mokau for holiday homes, lifestyle blocks and recreation. Urban expansion, land subdivision, rural lifestyle demands and soil erosion all compromise access to versatile soil and mineral resources that are of economic importance to the region, as well as contribute to the loss of cultural, heritage and landscape values.

3.9 The Waikato River

The Waikato River is a central feature for the whole region, and gives its name to it. It flows through several of the landscape types identified above. It has great variations in character from the roaring cascade at Huka Falls to the wide, serene flowing river further north, to the associated lakes.

The Waikato River is the longest river in New Zealand. It runs for 425 km from the slopes of Mount Ruapehu in the south into Lake Taupo. From there it meanders through the countryside and passes through Cambridge, Hamilton, Ngaruawahia and Huntly out to Port Waikato on the west coast.

The Waikato River was one of the important early transport routes through the area; it is a resource for a range of activities including mining, tourism, fishing, energy generation and sport and recreation.

Between 1929 and 1971 eight dams and nine powerhouses were built between Taupo and Lake Karapiro – the last of the dams – to generate electricity by means of hydro generation. All the lakes along this stretch of the Waikato River, except Lake Taupo, are artificial. There are power stations at Aratiatia, Ohakuri, Atiamuri, Whakamuru, Maraetai, Waipapa, Arapuni and Karapiro. These hydroelectric power stations, along with the geothermal and thermal power stations at Wairakei and Ohaaki produce a significant portion of New Zealand's total electricity generating capacity.

Prior to work beginning on the hydroelectric schemes the river would have been a deeply incised gorge with rocky river terraces, occasional rapids and a swiftly flowing river below, similar to the Waikato River north of the Karapiro dam.

The Waikato River is a focus for a wide range of recreation activities including trout fishing, white water rafting and boating near Lake Taupo, kayaking, rowing and other forms of paddling around Hamilton and on Lake Karapiro. Lake Karapiro is a significant competitive rowing venue, and also supports boating activities such as wake boarding and water skiing. Passive recreational pursuits such as sightseeing on boats and tourist cruises occur in the vicinity of Hamilton.

Photo 3.11 Waikato River from above
(source: Phillip Capper, www.flickr.com)

The Waikato River terraces are the focus for rural residential development, with new development apparent in areas around Karapiro for example.

The lower reaches of the Waikato River are increasingly influenced by human activities associated with higher population densities [Hamilton City] and intensive agriculture. On top of this there are many discharges into the Waikato River such as industrial, sewage and stormwater discharges and diffuse runoff from rural land use all of which adversely affect water quality.

Photo 3.12 Waikato River at Huka Falls

The natural values of the lower Waikato River have been compromised in a number of ways. Drainage and flood protection schemes have reduced the area of swampland adjoining the river. This, along with cattle grazing, has destroyed native vegetation and reduced the habitat available to water birds and fish.

Sustained pressure from continued economic growth in the area will mean that close monitoring of water quality and quantity as well as habitats adjoining the river system will be required.

4.0 AN OVERVIEW OF THE THEORETICAL BASIS FOR THE LANDSCAPE AND NATURAL CHARACTER ASSESSMENT

A landscape assessment is a way of understanding the landscape resource through description and evaluation of its characteristics. As part of the assessment the landscape is divided into broad landscape types, these types fit together in a coherent manner based on for example, landform and landcover. Methods for landscape assessments are constantly evolving and there is an absence of agreed standards in New Zealand.

This landscape assessment is, therefore, based on significant experience in landscape assessments, reading of overseas and New Zealand landscape assessment methodologies, case law, and on the best practice guidance notes given on the quality planning website - (http://www.qualityplanning.org.nz).

The process undertaken is as follows:

- Research into the landscapes and natural features in the region through previous studies and base data such as vegetative cover, geological formation, etc.
- Describe the landscape based on geomorphology, ecology and cultural patterns. This part of the process identifies the main broad landscape types, their characteristic features and how these landscapes have come about, usually as a combination of natural and cultural processes.
- Assign values to identify the most important landscapes and natural features as well as the factors that make them important.
- The choice of the appropriate criteria has been based on:
  - collective and individual experience in the landscape profession
  - the scale and purpose of the study
  - current case law;
  - overseas and New Zealand landscape assessments.
- As part of the landscape assessment, the ways in which the landscapes of the region are threatened will be identified including how these threats are to be avoided or minimised.[10]

The landscape types that have been identified in Part A are based on a broad and general assessment of the region and have regard to geomorphology and (to some extent) the vegetation patterns existing in each of the areas.

[10] *http://www.qualityplanning.org.nz/plan-topics/landscape.php*

4.1 Assessing the significance of landscape

In the introduction, a number of definitions related to landscape are given. Important aspects of these definitions are their comprehensiveness and the interaction between landscape values with other values such as natural character, indigenous vegetation, amenity, etc. Criteria for assessing landscape values have been selected from a review of standard landscape criteria including overseas assessments and projects, a review of relevant New Zealand case law (e.g. the Pigeon Bay criteria, definitions of landscape accepted in the Queenstown Lakes decisions), experience in landscape assessment work, and the purpose of this regional study.

The assessment criteria for landscapes are aligned with a tripartite definition of landscape. Landscape is seen as comprising a physical dimension, a perceptual (visual) dimension, and a meaning (values and associations) dimension. 'Landscape' is a broad definition and is a sub set of the environment. It is more than identifying the scenic aspects of a landscape and includes visual considerations.

The definition of landscape includes:

- physical features themselves;
- factors relating to the viewer and their perception of them; and
- perceptual factors relating to the meanings and values associated with a specific place and landscape.

These different dimensions of landscape are interdependent. Whilst it is useful to separate them as an analytical tool, ultimately the physical, perception and meanings dimensions are woven together in a way that is more than the sum of the parts.[11]

The Environment Court in New Zealand has accepted the Wakatipu Environmental Society and others - Queenstown versus Lakes District Council 2000 (WESI) criteria as being one way of considering the physical, perception and meanings of a landscape. These criteria have now been accepted as one way of assessing outstanding landscapes. The WESI criteria are referred to in the introduction and are stated here as:

(a) the natural science factors – the geological, topographical, ecological and dynamic components of the landscape;
(b) its aesthetic values including memorability and naturalness;
(c) its expressiveness (legibility): how obviously the landscape demonstrates the formative processes leading to it;
(d) transient values: occasional presence of wildlife; or its values at certain times of the day or of the year;
(e) whether the values are shared and recognised;
(f) its value to tangata whenua;
(g) its historical associations.

[11] *Isthmus Group. Landscape and Visual Methodology. Transpower 400kV Investigation North Island*

A more recent Environment Court decision, Unison Networks Ltd versus Hastings DC W11/2009, stated that the Court did not regard the WESI criteria as frozen and that these criteria might be improved with further use and understanding. A witness at the hearing (Mr Gavin Lister) stated that it needed to be remembered that the WESI criteria were nothing more than factors to take into account when assessing landscape. Every factor may not be relevant in each case and they do not need to be given equal weight. There is no formula. In his opinion an overall assessment is required, taking the WESI criteria into account. We concur with his view.

This landscape assessment of the Waikato region is required to identify Outstanding Natural Features and Landscapes, High Value Amenity Natural Features and Landscapes, and to identify and define those landscapes and features that contribute to the natural character, visual and amenity qualities of the coastal environment including areas of pristine natural character.

Aesthetic Values:

Aesthetic values relate to the visual quality of a landscape and peoples' appreciation of it. Criteria that contribute to the aesthetic values of a landscape are its:

- Memorability — means a landscape that is easily remembered and is worth remembering.
- Vividness — means that a landscape is immediately impressive, as a result of its visual distinctiveness, diversity or other factors, both compositional and geo-physical.
- Expressiveness — means the landscape demonstrates the formative processes leading to it.
- Cohesion — means that there is a continuity of key statements/patterns/themes and accents that give the landscape character and a sense of unity.
- Eminence — means that the landscape is exalted, distinguished, and remarkable in degree.

Physical Attributes /Natural Science Factors

Physical attributes include the physical nature of the landscape. These criteria are:

- Geological components — e.g. volcanic faults and scarps
- Topographical features — e.g. hills and spurs
- Ecological aspects — e.g vegetation and wetlands
- Dynamic components — e.g. erosion and sand bars

Associations

These are the criteria that cover the 'meaning' dimension of landscape. These criteria are:

- Historical associations/endemic values/NZ-ness natural or man made qualities in the landscape that give it a sense of place and identity
- Value to tangata whenua
- Recreation values
- Values that are shared and recognised art, poetry, literature and tourism.

Natural Character Values:

Naturalness is often regarded as a criterion that contributes to landscape quality, although landscapes can have high quality without necessarily having high natural character. In this methodology we have decided to assess natural character as a separate attribute because of its specific use under the Act.

Natural character is a term used to describe the 'naturalness' of a landscape. The degree or level of natural character within an area is dependent on the extent to which natural elements, patterns and processes occur and the nature and extent of human modifications to the landscape, seascape and ecosystems. Natural character is on a continuum from the pristine to the highly modified. The highest degree of natural character (greatest naturalness) occurs where there is the least modification.

• Absence of development	means a landscape in which there are few manmade structures.
• Natural elements	means the biophysical characteristics of a landscape such as landform, rock outcrops, vegetation communities and hydrological features.
• Natural patterns	means patterns that are formed through the interaction between landscape elements and the processes operating on them. Patterns are apparent through the interactions of plants, soils, aspect and slope, or through the erosion of the coast through wave action.
• Natural processes	mean the dynamic processes at work on the biophysical landscape, shaping landform and vegetation communities through erosion, deposition, colonisation, succession, and regeneration.

The attached worksheet (Appendix B) has been used to assess the values of the landscapes and features in the field, and is divided into four columns: aesthetic values; physical attributes; associations, and natural character values. The criteria relating to each factor are listed below the headings. Each of these values is rated using a high, moderate or low rating scale. An initial assessment of each area/feature was recorded at the time it was visited. These initial assessments were reviewed and revised at the end of the project with the aim of achieving consistency across the region.

4.2 Summary of Methodology

The methodology that we have used for the Waikato Regional Landscape Assessment involved the following steps:

- Research into the existing district landscape assessments;
- Development of assessment criteria – refer to the Waikato Region Landscape Values Assessment Worksheet;
- Identification, delineation and mapping of landscape types;
- Evaluation of features and landscapes using the assessment criteria (above);
- Evaluation of data against appropriate district landscape assessments to determine compatibility and discrepancies. Modify data, where necessary to achieve consistency.
- From this identify:
  - Pristine Landscapes (none were found in the Waikato region)
  - Outstanding Natural Features and Landscapes (ONFLs);
  - High Value Amenity Natural Features and Landscapes (HVANFLs);
  - Regionally Significant Landscape Features (RSLFs);
  - Significant Indigenous Forest Areas (SIFAs);
  - Landscapes and features that contribute to the natural character, visual qualities or amenity values of the coastal environment (Coastal Landscapes)

    (Refer to definitions in section 2.2 Landscape Classifications in Part B)
- Mapping of the landscape classifications.

The landscape values assessment worksheet is designed to rate the value of landscapes and natural features as high, medium or low on the basis of aesthetic values, and natural character/heritage values. It includes descriptions of the geophysical elements in the landscape. It is considered that the combination of these three factors provides a balanced and holistic assessment of landscape values that is both consistent with the relevant case law and also accurately reflects the factors that are commonly accepted to contribute to the quality of landscapes and natural features.

5.0 PART A CONCLUSION

The methodology that will be employed in undertaking the Waikato Region Landscape Study reflects best international and national practices for undertaking landscape assessments as well as New Zealand case law and professional experience.

The assessment will reflect landscape values in a regional context and provide a framework for more detailed district landscape assessment.

The outcomes of the study will assist Environment Waikato to fulfil its functions under the Act including the integrated management of natural and physical resources across both district council and regional council boundaries.

PART B

LANDSCAPE AND NATURAL CHARACTER ASSESSMENT

PART B CONTENTS

1.0 PART B INTRODUCTION

As stated in Part A, the purpose of this study is to provide Environment Waikato with the information and policy guidance required to develop a robust framework to bring about consistent and integrated management of landscape and natural character values in the Waikato region. Definitions of the various terms used in landscape assessments were given in Part A, and the requirements of regional councils in relation to managing landscape under the Act were also identified.

In Part A the various landscape types have been identified in a preliminary manner and described.

In Part B the brief is to undertake a regional landscape characterisation study of the land and marine areas within the region, and to finalise the identification of the landscape character types. This part of the study provides baseline information for developing policy to deal with landscape threats and management issues and to monitor change over time. Part B also provides the context for the identification of special landscapes, and an understanding of the degree or level of natural character in the area.

The brief stated that from the characterisation study, any areas with pristine natural character in the coastal environment, wetland, lakes and rivers and their margins as well as Outstanding Natural Features and Landscapes were to be identified. A full description of each pristine or outstanding natural feature or landscape will be provided so that there is a clear understanding of the elements that contribute to that rating. High Value Amenity Natural Features and Landscapes were also to be identified, as well as landscapes of high natural character.

Landscapes and features that contribute to the natural character, visual qualities or amenity values of the coastal environment were defined and identified.

The brief asked that Part B identify land use issues as well as landscape threats/management issues in the landscape types, plus any opportunities where the relocation of existing infrastructure might be desirable.

2.0 CLASSIFICATION AND ASSESSMENT OF LANDSCAPES

2.1 Background

As detailed in Part A, the Waikato region's landscape has resulted from both physical processes and human activity. The result of these physical processes, which have included volcanic eruptions, erosion by sea and river, geological movements such as uplift, and the mantle of vegetation which has grown up over thousands of years, plus (more recently) the activities of people, has resulted in areas of diverse and contrasting landscape character.

A regional assessment is different from a district-wide assessment. Through identifying and describing the landscapes of the region, a framework will be provided for more detailed district wide assessments. As a result of the assessment process landscapes and natural features that are outstanding and/or significant in a regional rather than local context, as well as High Value Amenity Natural Features and Landscapes will be identified.

An important aspect of this study is the identification of landscapes and features that contribute to the natural character, visual and amenity qualities of the coastal environment. In accordance with the requirements of section 6 of the Act, areas within the coastal environment, wetlands, lakes and rivers and their margins that are either pristine or Outstanding Natural Features and Landscapes have been identified and described.

In assessing the landscapes of the Waikato region, and having read the district-wide landscape assessments, it is apparent that there are a large number of landscape features that, at a local level, are significant, even outstanding, but when assessed on a region-wide basis are not at a scale that achieves such significance.

The Waikato region covers an area of approximately 25,000 km^2 and has about a 1,150 km long coastline. Instead of dividing the region into landscape units, as would normally be the case for a district landscape assessment, this assessment started by identifying the broad landscape types - a necessary first step toward understanding and classifying landscapes in the region. As stated in Part A, a landscape type is an area that has a recognisable pattern of physical elements. Variations in geology, soil, landform, land use and vegetation, as well as settlement patterns give rise to different landscapes, each with its own distinctive character and sense of place. Eight landscape types were identified and described in Part A. They are:

- Central Volcanic Region (CVR)
- Western Hill Country (WHC)
- Central Hill Country (CHC)
- Waikato Lowlands (including wetlands) (WL)
- Hauraki Plains (including wetlands) (HP)
- Eastern Ranges (ER)
- Eastern Coastline (EC)
- Western Coastline (WC)

The boundaries of the identified landscape types have been mapped (using GIS) in a general way – there is no defined line between one landscape type rather they transition from one to another.

In Part A, 'landscape' was defined as the combined product of natural and cultural patterns and processes within a geographical area. Landscape is an integrating concept rather than a single resource, and encompasses the relationship between natural and human patterns, human experience and perception.

This is further described in the Canterbury Regional Landscape Study 1993 (Boffa Miskell Associates and Lucas Associates) which was quoted in an Environment Court Decision (W114/94)[1] as follows:

> *'So landscape is not restricted to a visual resource. It is both physical and perceptual. The physical resource in any area is expressed in landscape. In addition each area is perceived and experienced. The values people place on these areas is subjective, although many are widely shared, supported by research and already formally recognised by the community. ….Landscape as a human experience combines both aesthetic values and other values which humans attribute to landscape. Used in this sense landscape is not only the physical appearance of land, but also the subjective baggage each person carries with them - what they know, what they imagine and how they are disposed.'*

Following this theme, in his book 'Nga Uruora' (The Groves of Life), Geoff Park, describes the values of Tauwhare (on a bend in the Mokau river on the southern boundary of the region), a landscape which includes a pa site, and kahikatea forest, saying:

> *'Certain landscapes demand an emotional response, a deeper, even moral reaction to the land. Therein lies the spirit of the place. Suspended still in its ancient protection, remote now from imperial quests that removed anything like it elsewhere, Tauwhare is a last chance to acknowledge that the brief human time in these islands has included a greater sense of nature than is common today.*
>
> *Only in places that have this effect do you realise what Henry Thoreau really meant when he said that the preservation of the world lay in the wilderness.'*[2]

Leading on from these descriptions of what landscape means, a three-part process of classifying the various landscapes has been used for this regional assessment. This is based on case law, other landscape assessments undertaken in both New Zealand and overseas, and experience in landscape assessment.

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[1] *Taupo District Landscape Assessment Isthmus Group Dec 2008.*

[2] *Nga Uruora (The Grove of Life). Ecology and history in a New Zealand Landscape. Geoff Park. Victoria University Press.*

The three part process involves identifying the physical characteristics of the landscape; the quality and values of the landscape i.e. the perceptual experience; and the associations that people have with that landscape.

A number of landscape assessments have been carried out at a district level, covering parts of the region. These have identified, at a local level, areas of outstanding landscape value, amenity landscapes, and areas of significant natural character. These were used as a starting point for the regional study.

The next phase was a comprehensive field evaluation of the region from the land (from public roads and vantage points only) and the air, to identify in each of the eight landscape types; Outstanding Natural Features and Landscapes, High Value Amenity Natural Features and Landscapes, and Significant Natural Landscape Features. Photographs were taken, illustrative of each landscape type, and recording a wide selection of landscapes, including those identified as coming within the above categories. During the site visits, parts of the various landscape types were identified as being conspicuous and eminent and therefore likely to be 'outstanding' Similarly landscapes were identified as likely to be 'high value amenity' landscapes or landscapes of high natural character, or Significant Natural Landscape Features.

The assessment worksheet (Waikato Region Landscape Assessment Worksheet) developed in Part A was used to record the landscape values and was refined during this process. The worksheet sets out criteria that cover the physical dimension (physical attributes/natural science factors), perceptual values - aesthetic (memorability, vividness, expressiveness, cohesion, eminence) and meaning and associations (historic associations, value to tangata whenua, recreational values, and values that are shared and recognised). This can be seen at Appendix B.

Photographs were attached to each worksheet that was completed for Outstanding Natural Features and Landscapes, High Value Amenity Natural Features and Landscapes and Significant Natural Landscape Features. Applying a worksheet to each area facilitates consistent evaluation of its landscape features and qualities. The different dimensions of landscape are interdependent however. Whilst it is useful to separate them as an analytical tool, ultimately the physical, perception and meanings dimensions are woven together in a way that is more than the sum of the parts.

Once the initial rating has been done using the worksheets and before reaching a final conclusion, the assessor stands back and compares the landscapes that have been identified across the region for consistency and meaningfulness in the application of ratings.

2.2 Landscape Classifications

2.2.1 Pristine Landscapes

A pristine landscape is one which has been completely unmodified by human activity.

Throughout this regional landscape assessment process no pristine landscapes were identified. The study was limited to public vantage points. There may however be small pockets of landscape units that have retained their original forest cover for example and may be considered pristine; but as stated above, this landscape study has focused on larger units of land and therefore these smaller landscape units have not been identified. In some cases, these smaller pristine landscape units have been identified in the various district wide landscape assessments that have been undertaken.

2.2.2 Outstanding Natural Features and Landscapes s6(b)

As stated in Part A, there is no universally accepted definition of an outstanding natural feature or landscape. In a recent decision of the Environment Court [WESI] it was stated that the word 'outstanding' means conspicuous and eminent. In this report an outstanding landscape is one that is memorable, vivid, eminent, expressive of its formative processes, and cohesive, with a reasonably high level of natural character.

These Outstanding Natural Features and Landscapes are found throughout the region including in the coastal environment.

2.2.3 High Value Amenity Natural Features and Landscapes s7(c)

The definition of 'amenity values' in the Act is:

> *'Those natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence and cultural and recreational attributes:'*

In this study a high value amenity landscape is one that is valued by people because of its pleasantness, aesthetic coherence and/or cultural and recreational attributes.

It is important to record that the landscapes and features classified as outstanding or amenity in this study have been identified at a regional scale. Identification of them does not derogate from protection of landscapes that have been identified as being of outstanding significance, or of high amenity, at a district level.

2.2.4 Significant Natural Landscape Features s7(f)

In this report a significant landscape feature refers to an element or feature that is situated in a larger landscape that is neither outstanding nor an amenity landscape but which is unique or unusual often in an ecological or geological sense for example, geothermal. Some of these Significant Natural Landscape Features might be considered outstanding in a district wide context.

2.2.5 Significant Indigenous Forest Areas s7(f)

Significant Indigenous Forest Areas have been identified from site visits both on the ground and in the air, topographical maps, aerial Google Earth and from GIS data. They comprise large areas of indigenous forest, usually located on hills or ranges which have not been identified as either outstanding or amenity landscapes or features but which are visually significant and contribute to the natural character values of an area.

2.2.6 The Coastal Environment

The coastal landscapes and features of the Waikato region include rocky headlands, wave-cut platforms, sand-dunes, river mouths, harbours, white sandy beaches, mangroves, pa sites, cliffs, and islands. The coastal environment usually includes the land from Mean High Water Springs (MHWS) to the first ridgeline or escarpment.

In the next section of the report, each of the Outstanding Natural Features and Landscapes, high value amenity landscapes, Significant Natural Landscape Features are identified and described. A summary table of the worksheet ratings for each of the identified landscapes is given in the conclusion.

2.3 Description of Landscapes

The landscape descriptions that follow are not described in a formulaic pattern because each landscape is unique. What is described are the key factors that make each landscape unique and the current or likely activities that could threaten those values. Any opportunities for the relocation of existing infrastructure, where desirable, have been highlighted.

3.1 Tongariro National Park (ONFL 1)

This landscape is located in the most southerly portion of the region, south of Lake Taupo, between State Highway 1 and State Highway 7. The Waikato regional boundary runs along the top of the three cones, terminating just north of the Rangipo Desert. This landscape crosses over the boundary with the Manawatu-Wanganui region and Ruapehu District.

This area is the epitome of a volcanic landscape. It consists of three main dormant or active volcanic cones – Ruapehu, Ngauruhoe and Tongariro. The mountains reach heights of nearly 2,800m and the whole area is a World Heritage site. This volcanic field is still active. All three volcanic features are unique and distinctive, but Ngauruhoe has a particularly strong cone shape, and is the most active of the three.

This landscape is highly memorable, vivid, and remains in the mind long after leaving the area. It strongly demonstrates the formative processes that made it. The area is highly natural with only the state highway and the power lines detracting from it. The vegetation alongside the Desert Road contains tussock, alpine microflora and scree plants, as well as exotic weed species. In winter the mountain tops are snow covered. They form a spectacular mountain backdrop to Lake Taupo and Taupo town, as well as being clearly visible from State Highway 1 in many places travelling north and south.

Photo 3.1 Mount Tongariro and Mount Ngauruhoe from the intersection of State Highway 1 and Rangipo Intake Road, looking west

This landscape is highly prized because of its cultural values (the land was gifted to the nation by Tuwharetoa) making it important to both Maori and Pakeha; for its scenic beauty, its World Heritage status and it was New Zealand's first and one of the world's first national parks. It is also the focus of a range of recreational activities including skiing, snow boarding, tramping, botany, and sketching and visiting the crater lakes.

This landscape is the most outstanding landscape in the region and received the highest rating in the assessment worksheets.

The main factors contributing to its identification as an outstanding landscape are its distinctive and highly memorable volcanic landform demonstrating the formative processes that made it, as well as its high natural character, cultural values and recreational values.

Current or likely activities that could threaten those values include additional power transmission lines, geothermal power facilities, and further development of access roads.

3.2 Kaimanawa Mountains (ONFL 2)

The Kaimanawa Mountains sit astride regional boundaries, between the Waikato region and the Manawatu-Wanganui and Hawkes Bay regions. The Kaimanawas are located south east of State Highway 1, and due east of Tongariro National Park.

Photo 3.2 View of the Kaimanawa Mountains from State Highway 1 – Desert Road

This is a non volcanic sedimentary range which resulted from geological uplift. The peaks vary in height from around 1,300m to 1,700m and the range forms the eastern flank of Taupo District and the southern part of the Waikato region. The lower portions of the range are bush covered, with tussock and alpine vegetation on the higher rocky landforms to the east.

This landscape is not as memorable as the volcanic landscape of Tongariro National Park, but it is expressive of the forces that made it, and it is very cohesive with an almost solid covering of native forest including beech and podocarp. The landforms are complex and incised with deep valleys. This landscape is wild and remote and provides a visual backdrop to the Taupo District.

Recreationally this landscape offers remote tramping experiences as well as hunting and fishing. It was a great food source for Maori.

The landscape has a very high level of natural character.

The main factors contributing to its identification as an outstanding landscape are the fact that the range is expressive of the forces that created it, it has a almost solid covering of native forest, its visual prominence and its cultural values.[3]

Activities that could threaten those values include mining, commercial forestry, clearance of the indigenous vegetation, development of electricity transmission lines, and significantly increased public access.

[3] *Landscape and Natural Values Taupo District. Isthmus Group. 2006*

3.3 Northern Herangi Range (ONFL 3)

The northern section of the Herangi Range is located in the Western Hill Country landscape type, north of Waikawau approximately 30 km south west of Te Kuiti.

It comprises a number of rugged and peaked landforms, which are largely bush covered, with some cliffs and rocky tops. Maungamangero (810 m) is one of the main peaks, and the northern portion of Herangi Range is a Department of Conservation estate area called Whareorino. This area is the largest and one of the most valuable forested areas in the western King Country.[4] The forest covers a range of altitudes from lowland to montane and contains a variety of habitats. It includes tawa and other hardwoods, and emergent podocarps and northern rata are also present. It contains areas of spectacular virgin forest, parts of this may in fact be considered pristine.

Little is known of pre-European history. The forest was isolated for many years because of the land wars in Waikato and Taranaki.

Recreationally the area offers good tramping, hunting, and fishing. There are several walking tracks through the forest and one hut. This landscape has very high natural character values.

The main factors contributing to its identification as an outstanding landscape are its rugged landforms, its valuable indigenous forest areas and its remoteness.

Activities that could threaten these values are commercial exotic forestry, clearance of indigenous vegetation, pest species, and construction of additional roads for public access.

Photo 3.3 Herangi Range from the road out to Waikawau river mouth

[4] *Whareorino Conservation Area. Department of Conservation web site*

3.4 Mount Karioi (ONFL 4)

Mount Karioi is located in the Western Hill Country landscape type adjacent to the Tasman Sea, south of Raglan (Whaingaroa) Harbour. It is a distinctive extinct volcanic cone rising to a height of 756m, and can be seen from as far away as the Waitakere Ranges in Auckland, as well as from many localities in the Waikato region. It rises above the harbour and surrounding flatter land, and has a very distinct cone shape. The mountain is comprised of 7 peaks surrounding a crater. The landscape is strongly dissected with fourteen streams running down its face, some of which run into Raglan Harbour.

Photo 3.4 Mount Karioi from the Ngarunui Beach scenic lookout

Photo 3.5 Mount Karioi from Ohautira Road approaching Raglan from the north – State Highway 22

The ridges of the volcanic cone run west out into the sea forming high cliffed headlands and rocky outcrops. A number of steep bush clad valleys run back into the hill country, including one called Te Toto Gorge. Rocky tors and outcrops are a feature. The cliffs surrounding the seaward edge of Mount Karioi are exposed to the high energy wave action of the Tasman Sea. In places the regenerating bush extends out to the coastal edge.

Pasture is evident on the lower slopes and on the Raglan side there are a number of houses. On the higher slopes the intact covering of good quality bush adds significantly to its natural character.

Mount Karioi is part of the Pirongia Forest Park (DoC estate), which includes Pirongia, another volcanic cone situated about 40 km to the south-east.

There are tramping tracks to the summit of Mount Karioi, and a wide range of native vegetation of interest to the botanist. The coastline between Raglan Harbour and Mount Karioi is famous for its surf breaks.

This landscape has high natural character.

The main factors contributing to its identification as an outstanding landscape are its proximity to the coast, its elevation, its distinctive cone shape, its good quality cover of indigenous vegetation and its cultural values[5].

Activities that could threaten those values include further building development on its slopes, removal of bush, exotic forestry, development of electricity transmission lines and wind farms.

[5] *Pirongia Restoration – History. mtpirongia.org.nz/NewFiles/history.html*

3.5 Coromandel Range and Moehau Range (ONFL 5)

Photo 3.6 Castle Rock

The Moehau and Coromandel Ranges are predominantly formed from a series of massive extinct volcanic landforms. The ranges comprise the distinctive backbone to the Coromandel Peninsula - starting at the north end with Mount Moehau - a conspicuous peak that rises to a height of 892m and is part of a string of peaks all over 800m high in the Moehau Range. Further south the main Coromandel Range, predominantly volcanic in origin, has a series of very impressive peaks, pinnacles, and rocky outcrops which can be seen from all over the peninsula including Castle Rock and Table Mountain (visible as one crosses the Hauraki Plains). The skyline of the ranges is unique to the Coromandel and forms the backdrop for literally hundreds of views from roads and settlements within the Thames-Coromandel District and further afield including Auckland and north. Driving around the peninsula one is confronted with a new dramatic view of the ranges at every turn.

The ranges have a steep deeply incised landform with gorges and 'V' shaped valleys running through them. They have an almost complete cover of native forest, except for some large areas of pine plantations. The bush does vary in quality from very mature high quality forest to forest that has been regenerating for approximately 20 years. The forest cover gives the ranges a homogenous quality.

The ranges have a wild and remote quality, and in places very high natural character.

The Department of Conservation owns a number of blocks on the Coromandel Ranges stretching from Moehau to just north of Waihi. These blocks are referred to collectively as the Coromandel Forest Park and contain within their 72,000 hectares some of the most rugged terrain in the ranges and remote coastline. Among the features of the park are a number of quite difficult tramping tracks, and related huts, as well as many less arduous bush walks, and places to picnic and swim.

Features of the park include not only its varied plant life and native birds, but also reminders of the early history under European settlement. There are wooden dams from the kauri logging days, pack horse tracks, tram routes, old gold mining roads and sites of logging camps.

The peninsula as a whole was likened by Maori to a giant canoe with its stern at Moehau, its bow at Te Aroha and its mooring ropes stretching into the Kaimais.[6] It is believed that one of the early ancestors from the Arawa canoe was buried on Moehau Mountain (Moehau meaning windy sleeping place) and the sacred nature of Te Moehau has been shared and bequeathed by all the subsequent tribes.

Photo 3.7 Moehau Range

This landscape includes the Karangahake Gorge which is a sub-unit of the Coromandel Range, plus Waitawheta Gorge which runs into the Karangahake Gorge. The Karangahake Gorge runs from just west of Mackaytown to the western edge of Waikino and includes the Ohinemuri River and the steep slopes on either side. The gorge is very narrow and steep sided with cliffs, a rocky river, and native forest both on the rocky heights above, and alongside the river.

Gold mining began in the Karangahake Gorge in 1875. Between 1910 and 1920, however, many of the mines declined as costs of gold recovery began to outweigh profits. The main batteries at Karangahake closed down and were demolished.

The main factors contributing to identification of the Moehau and Coromandel Ranges as outstanding landscapes are the steeply and deeply incised volcanic landforms, which form the backdrop to literally hundreds of views, its bush cover, its values to Iwi, and its high natural character in places.

Activities that could threaten those values include mining, exotic forestry, additional roads, and any form of residential development, farming and wilding pine infestation.

[6] *The Coromandel, Michael King and Robin Morrison. Tandem Press. 1993.*

3.6 Maungatautari (ONFL 6)

This volcanic landform is part of the Central Hill Country landscape type. The cone is located close to the Waikato River. It rises to a height of 797m, and is comprised of the three main peaks - Maungatautari, Pukeatua and Te Akatarere. Although none of the peaks are as high as Pirongia, which is located to the west, Maungatautari stands out very distinctly in the south-eastern portion of the Waipa District. It dominates both the flat lands to the west and Lake Karapiro, the Waikato River, and State Highway 1 to the east.

Photo 3.8 Maungatautari from Arapuni

Maungatautari is surrounded by a range of lower foothills. It has less heavily indented side slopes than Pirongia and there is very little development visible on its lower slopes except for pasture and pines. There are distinctive ignimbrite cliffs on the lowest slopes. The boundary line between the native vegetation and the pasture slopes below is more geometric than on Pirongia.

This landscape has high aesthetic values, and high natural character values owing to its volcanic landform and extensive areas of bush cover, and high cultural values as Maori settlements were established on its slopes.

In the past few years Maungatautari has been established as an ecological island by the Maungatautari Ecological Island Trust. The top of the volcanic cone (the native forest area) is now protected as the Maungatautari Scenic Reserve and is surrounded by a 47 km long pest proof fence.

The main factors contributing to identification of Maungatautari as an outstanding landscape are its high aesthetic values, its elevated volcanic landform located in the fairly flat surrounding landscape, its extensive areas of bush cover, and its cultural values.

Activities that could threaten these values are additional bush clearance of slopes, or exotic forestry, and the introduction of buildings on the lower slopes.

3.7 Pirongia (ONFL 7)

Pirongia, which rises to a height of 958m above sea level, is sited in the Western Hill Country landscape type and straddles the boundary between the Waikato, Waipa and Otorohanga Districts.

The cone visually dominates, or is very visible from, much of the central portion of the Waikato region, and is also clearly visible from the Kaimai Ranges. The mountain towers over Pirongia township and is the main feature of the views. The top of the mountain is frequently in cloud.

Photo 3.9 Pirongia

The cone comprises a number of peaks. Indigenous forest clothes the upper slopes and there are rock outcrops visible in places. Much of the top of the mountain is included in the Pirongia Forest Park and fingers of bush run down the gullies on the lower slopes. Rimu, tawa, totara and tree ferns can be found on the upper slopes. On the mid-slopes pasture is interspersed with clumps of trees, and on the lower slopes are farm buildings, houses, hedgerows and pasture.

Pirongia was used as a military base in the past by Europeans. It was the centre of the Maori wars and a battle was fought here. Recreationally the mountain offers walking, tramping, bird-watching, botany and hunting. The aesthetic quality of this landscape feature is high. The shape of the cone makes it highly distinctive and that, together with the bush on the upper slopes, results in high natural character. Though there are a number of volcanic cones in the region, the height and visibility of Pirongia make it a very distinctive feature.

The main factors contributing to identification of Pirongia as an outstanding landscape are its volcanic shape, the contrast with the surrounding flat land, the bush on its upper slopes and its historical cultural values.

Activities that could threaten these values would be additional bush clearance of slopes, and the introduction of buildings on the lower slopes, and invasive pest species. Commercial scale forestry operations would also threaten these values.

3.8 Kaimai Range (ONFL 8)

The Kaimai Range stretches from the Karangahake Gorge south to the Mamaku Plateau. The northern portion is considered to be outstanding, and the southern portion is identified as a high value amenity natural feature and landscape discussed later in this report (Refer to HVANFL12).

The volcanic origins of the northern portion are clearly evident with a series of peaks, the highest of which is Te Aroha at 953m. This range is part of a strong fault line, which visually dominates the eastern side of the Waikato region, and is in strong contrast with the lowlands dairy country, which runs south from the Firth of Thames and borders the western side of the range.

This range has a steep deeply incised landform with gorges and 'V' shaped valleys running through it. There is an almost complete cover of native forest along the tops, with some pasture on the lower slopes. The bush varies in quality from very mature high quality forest; to forest that has been regenerating for approximately 20 years. There are also areas of pine plantations. The forest cover gives the ranges a homogenous quality. The ranges have a wild and remote character, and in places very high natural character. There are also a number of Pa sites along the west facing slopes. Maori settlers formed tracks through the bush, hunted and used its plants for food and medicine.

The Department of Conservation owns a large part of the ranges - the Kaimai Mamaku Forest Park - which contains 37,000 hectares of land, and stretches along the top of the range from Karangahake Gorge near Waihi to the Mamaku Plateau near Rotorua. The park marks the northern boundary for native red and silver beech and is the southernmost limit of the kauri[7]. There are many kilometres of tracks through the ranges, as well as huts and paragliding off the peaks.

The main factors contributing to its identification as an outstanding landscape are its distinctive peaked landform, its elevation, the extensive bush cover and cultural values.

Activities that could threaten those values are mining and quarrying, commercial exotic forestry and further bush clearance.

Photo 3.10 Kaimai Range approaching from Wairakau

[7] www.doc.govt.nz

3.9 Lake Taupo (ONFL 9)

This expansive lake has an area of 616 km^2 and is the largest freshwater lake in New Zealand; it is the source of the Waikato River. The lake, which has pumice beaches, lies in a caldera created by a series of enormous volcanic eruptions between at least 26,500 and 1,800 years ago, and is surrounded by volcanoes in the nearby central plateau and to the south. Lake Taupo forms the foreground to the Tongariro National Park, and is highly visible from a wide area thus having a large viewing audience. Features around and in the lake include cones, islands, cliffs, rock carvings and native bush. The lake is the focal point for the settlements at a number of locations around it.

3.11 Lake Taupo

The lake and its setting have a strong sense of place and identity. Tangata whenua have strong links to the lake and many live alongside it.

From a recreational point of view the lake is noted for its trout fishery – brown and rainbow trout, for cycling, kayaking, skydiving, waterskiing and boating.

The main factors contributing to its identification as an outstanding landscape are the expansive areas of water, its memorability and vividness, the natural character of the lake edge and its cultural values.

Activities that could threaten these values would be significant additional development around the lake edge, and on the slopes surrounding the lake. Commercial exotic forestry would also threaten this landscape, as would invasive pest species and wildling pines.

3.10 Coastal Areas of Coromandel

3.10.1 Cathedral Cove, Shakespeare Cliff, Cook Bluff and the Coastline South of Hahei (ONFL 10/1)

These landscapes are part of the Eastern Coastline landscape type. Generally this runs from Cooks Bay to Hot Water Beach on the east coast of the Coromandel Peninsula. Cathedral Cove, Hahei, Cook Bluff and the coastline south of Hahei are comprised of dramatic white ignimbrite and rhyolite cliffs which rise to heights of over 100m in places, indented rocky coastline with pinnacles, arches and blowholes, and white silica beaches. Significant expanses of native coastal forest rise from the cliff tops onto the hills behind. Off the coast are a number of small rocky islands – Motueka, Mahurangi, and Te Karaka Islands – which enclose the bay to the north east of Hahei.

This is a dramatic and memorable landscape, with a continuity of key statements – headlands and beaches, and bush along the cliff tops. Parts of the coastline are constantly eroding.

Shakespeare Cliff, Cook Bluff and Cathedral Cove are part of Scenic and Recreation Reserves, and the Whanganui-A-Hei (Cathedral Cove) Marine Reserve extends 9km^2 from the north end of Hahei Beach out to Mahurangi and Motukorure Islands and south to Cook Bluff.

This stretch of coast is unique in the Coromandel. It is the combination of the almost vertical white cliffs topped by coastal forest and regenerating bush in some places, with pines elsewhere. In some locations the slopes which are bush or tree covered, rise up to pasture at higher levels. The patterns that enhance the landscape character are the location of the bush and trees along the cliff tops, and the patterns of bush and pasture. The spatial qualities of the area are derived from the landform (and vegetation). There is a sense of enclosure within the small valleys, but a very expansive quality on the ridges and coastal slopes.

Photo 3.12 Cathedral Cove near Hahei

This is a popular tourist spot in summer. Mercury Bay is a centre for big game fishing from December to April each year. Mercury Bay is popular for recreational boating and yachting activities including canoeing and kayaking off the beaches and snorkelling and diving in the marine reserve. The beaches are popular with swimmers, and there are dramatic coastal walks.

This stretch of coastline has high natural character. The main factors contributing to its identification as an outstanding landscape are the dramatic white coastal cliffs, the indentations in the coastline, the offshore islands, and the coastal features such as arches, blowholes and white sand beaches as well as its cultural and recreational values.

Activities that could threaten those values would be - allowing housing development to spread from Hahei township over the ridge towards Cathedral Cove; allowing housing development to spread up the slopes surrounding Hahei; housing development on headlands between the beaches; roads up steep coastal slopes; and exotic forestry.

3.10.2 Northern Tip of Coromandel Peninsula and Western Slopes of Moehau Range down to the Coast (ONFL 10/2)

A key characteristic of these areas is the steep coastal landforms. In places quite indented, running down to the coast where it flattens out at the base of the slopes often at the beaches and at cliffs. At the northern tip of the peninsula is the ‘Sugar Loaf’ – a volcanic cone headland with The Pinnacle rocks in the sea just off it.

The majority of the land is in pasture but there is good quality indigenous forest remnants in some valleys and on some slopes. These landscapes are dramatic and vivid because of their strong underlying landform and mature bush. There are also a number of coastal landscape features which add to the quality and drama of the landscape, which include cliffs, islands and rocky headlands.

The vegetation is distinctive, comprising almost exclusively native forest remnants. There is low regenerating bush on some coastlines, and a pohutukawa fringe along others. Where there are a few houses they are located immediately behind the beach or on the flat land below the pasture slopes and are very low key. There are also a number of small farm structures such as barns.

The main factors contributing to the identification of these landscapes as outstanding are the steep dramatic landforms, with native forest on the heights above, combined with pasture and the steep cliffs and rocky foreshore. The mature pohutukawas on the coastal slopes, plus the wild and remote character of this area contributes to its outstanding status.

Activities that would threaten these values would be the introduction of housing developments, additional roads, forestry and mining.

3.10.3 Tuateawa (ONFL 10/3)

Tuateawa is on the east coast of the Coromandel between Waikawau Bay and Kennedy Bay. It comprises two coastal areas, one to the south of Tuateawa township and one to the north. The northern coastal area stretches from just east of Little Bay, south to Tuateawa and including Whanake. The southern portion stretches from Tuateawa south, including Tokangawha Point and Kahutara and includes the northern coast of Kennedy Bay.

The Tuateawa coast is unique in its combination of a dramatic coastal edge with a series of stony beaches and rock reefs, and the magnificent views available from the public road. The coastline is backed by steep slopes, a large number of mature pohutukawa, and with groups of pine and regenerating native bush in other places. The pohutukawas are very distinctive along the coastal slopes. The land slopes steeply down to the rocky foreshore.

Photo 3.14 Tuateawa

There are many pa sites either in Tuateawa or close to it. Besides the coastline itself, there are a number of significant landscape features including Kapoai Point to the south, Tuateawa Point itself and Whanake Point to the north.

Steep incised stream valleys run down the slopes to the coastal edge, with the Tuateawa Stream exiting near the boat ramp in the centre of the bay.

The features that contribute to this landscape being oustanding is the dramatic rocky coastline, the pohutukawa on the coastal edge and the magnificent views up and down the coast, and the indigenous forest.

Activities that would threaten these values would include any visible additional development such as housing, removal of mature pohutukawa, forestry, mining and additional roads.

4.1 Hakarimata Range and Mount Taupiri (HVANFL1)

This range of hills is located in the Central Hill Country landscape type, and straddles the Waikato River, which curves through the hills between Taupiri and the southern part of the range. These hills form the backdrop to Ngaruawahia and State Highway 1. The Hakarimata Range comprises smooth topped hills covered in quite mature native forest in places, whilst Mount Taupiri is a distinctive volcanic cone shape, with native vegetation in places. The Hakarimata Range rises to a height of 374m; Mount Taupiri is 288m at its highest point.

Taupiri is a sacred mountain. It was originally a fortified pa, and is now the Waikato tribes' most sacred burial site. It is a very significant local landscape feature. Ngaruawahia was originally the headquarters of the Maori King movement. Turangawaewae, close to the river and Taupiri, is the home of the Maori King.

There is a walkway along the top of the Hakarimata Range.

This landscape has high natural character in places. The main factors contributing to its identification as a high value amenity landscape are the fact that it is the backdrop range to Ngaruawahia, the indigenous forest on its top, its visibility from State Highway 1, and its cultural values.

Activities that could threaten those values are additional bush being cleared, additional quarries and houses located on the lower slopes. Existing quarries extract greywacke, sandstone and siltstone. They are highly visible from local roads and the state highway. There is also coal in the hills.

Photo 4.1 Hakarimata Range from State Highway 1

Photo 4.2 Mount Taupiri from State Highway 1

4.2 Herangi Range - South (HVANFL2)

The southern portion of the Herangi Range is located in the Western Hill Country landscape type north of the Awakino River.

Photo 4.3 Herangi Range

The highest ridgetops in the southern portion of the Herangi Range vary from around 500m to nearly 800m and are less distinctive than the rugged, peaked landforms in the northern portion of Herangi Range (ONFL 3); they form the backdrop to views from Waikawau on the west coast. There is a covering of good quality native forest over most of the range.

This landscape has high natural character. The main factors contributing to its identification as a high value amenity landscape are its elevation, and its bush cover.

Activities that could threaten those values are commercial exotic forestry, clearance of bush, and the addition of roads on visually exposed slopes.

4.3 Rangitoto Range (HVANFL 3)

Photo 4.4 View of the Rangitoto Range from the north west – Toa Bridge

The Rangitoto Range is quite isolated; it is located away from major roads in its position south east of Otorohanga. The highest point – Ranginui – is 978m high.

Part of the range has high natural character values, and on parts of it the forest cover is regenerating. Some of the finest stands of virgin podocarp forest in the North Island are located here and the range is connected to the Pureora Forest Park. The Waipa River has its source near this range.

The main factors contributing to its identification as a high value amenity landscape are its height, and its high quality native forest cover in places.

Activities that could threaten those values would be additional clearance of bush, and the establishment of commercial exotic forestry and the invasion of weed species.

4.4 Kuharua, Kakaramea, Lake Rotoaira and Pihanga (HVANFL4)

The three cones, Kuharua, Kakaramea and Pihanga, are visually prominent and are located close to Tongariro National Park. They reach heights of between 1,200m and just over 1,300m; Kakaramea and Pihanga have rocky tops while Kuharua displays a classic cone shape. Lake Rotoaira lies to the south of these mountains. There is tussock and alpine vegetation on two of the cones. There are also areas of mature bush particularly around Lake Rotoaira however there are pines on some of the lower slopes. Transmission lines are a feature in the landscape.

These cones form the foreground to Tongariro National Park viewed from Lake Taupo; they are part of a World Heritage Site.

There is a strong connection between these cones and local hapu[8].

These landscape features have high natural character values. The main factors contributing to their identification as a high value amenity landscape are their rounded shape and elevation, and their proximity to Tongariro National Park and Lake Taupo, and high natural character values.

Current and likely activities that could threaten those values would be the introduction of more exotic production forestry and additional transmission lines.

Photo 4.5 View of Kakaramea from State Highway 47 looking north

Photo 4.6 View of Pihanga and Lake Rotoaira from the west

[8] *Outstanding and Amenity Landscapes of Taupo District, Isthmus Group, 2008*

4.5 Pureora (HVANFL5)

This is southern of two neighbouring volcanic peaks, the other being Titiraupenga (HVANFL 6). It is located in the Central Volcanic Region landscape type close to State Highways 30 and 32 north west of Lake Taupo where it straddles the boundary with the Manawatu-Wanganui region. It stands 1,165m above sea level and is a smooth rounded cone, which stands out clearly from the flat country around it. Native forest provides a solid cover and stream gullies are clearly visible on its slopes. It has high tangata whenua values and its recreational opportunities include hunting, tramping and walking.

Photo 4.7 Pureora from State Highway 30 looking south east

The main factors contributing to its identification as a high value amenity landscape are its prominence in an otherwise flat landscape, its lack of modification and its high natural character values.

Current or likely activities that could threaten those values are removal of bush, invasion of weed species, and establishment of commercial exotic forestry.

4.6 Titiraupenga (HVANFL 6)

Photo 4.8 Titiraupenga from State Highway 30

Titiraupenga is the more visually distinctive volcanic cone of two peaks, the other being Pureora (HVANFL 5). It is physically very visually prominent, particularly from State Highway 30, because of the conspicuous rock outcrop on its summit. Titiraupenga has a height of 1,042m and can be seen on the skyline from 70 km away; it is considered a landmark feature in the area.

It was once an historic pa site, and is waahi tapu. There is a cluster of pa sites surrounding the base of the mountain.

Native logging was carried out in the 1800s through to early 1900s. Recreational activities include tramping, hunting and walks.

The main factors contributing to its identification as a high value amenity landscape are its high natural character values, such as extensive bush cover, its distinctive shape and its elevation, plus its tangata whenua values.

Activities that could threaten those values include clearance of the bush or the introduction of exotic forestry and weed species.

4.7 Tauhara (HVANFL 7)

This volcanic feature, which comprises three peaks, is located due east of Taupo township, and is a landmark feature for Taupo, the lake and its surrounds. It is surrounded by relatively flat land and is therefore visually prominent. Pasture is present on the lower slopes, while regenerating bush with scattered wildling pines can be found on its upper slopes. There is some erosion evident in the foothills.

Photo 4.9 Tauhara from State Highway 5

This feature is important to local Maori and features in Maori mythology. It gives the area a strong sense of place and identity.

The main factors contributing to its identification as a high value amenity landscape are its prominence in the flat landscape east of Taupo and its distinctive volcanic shape. Parts of it have high natural character values.

Activities that could threaten these values include commercial exotic forestry, further clearance of regenerating bush, and additional transmission lines.

4.8 Te Hoe (HVANFL 8)

Te Hoe is located in the centre of the region, west of Tahuna, in the Central Hill Country landscape type. Reaching a height of 521m at the summit of Ngaraparepa, Te Hoe is a locally distinctive feature but is not particularly memorable or vivid on a regional basis because of its relatively low elevation. It has contiguous native vegetation cover, and is visually intact with no obvious modification however some of the lower slopes are in pasture and there are some pine plantations on the northeast end of the range. There are also gullies running down the face of the feature.

Photo 4.10 Te Hoe from the Tahuna to Te Hoe Road

The main factors contributing to its identification as a high value amenity landscape are its high degree of natural character, its native vegetation cover, and its visual prominence locally.

Activities that could threaten those values include the removal of existing native bush and commercial exotic forestry, and invasive weed species.

4.9 Paeroa Range (HVANFL 9)

The Paeroa Range is located in the Eastern Hill Country to the west of State Highway 5. It is a distinctive range of hills, which reaches a height of 979m and is seen from the Taupo to Rotorua highway (State Highway 5), and also from Te Kopia Road on the northern side of the range with steep shrub covered bluffs which are over 400m high in places. The upper slopes are bush covered, but the lower slopes have pasture and pine; gullies are apparent on the slopes. Te Kopia Scenic Reserve is located on its south western side - steaming cliffs (Refer SNLF5.5.5)

Photo 4.11 View of Paeroa Range from State Highway 5

The range is used by paragliding enthusiasts, and there is a telecom tower on the summit.

It has a moderate degree of natural character. The main factors contributing to its identification as a high value amenity landscape are its elevation, its convoluted landform, its partial bush cover, and its steaming cliffs.

Activities that could threaten those values include exotic forestry, invasion of weed species, removal of additional native forest cover, and the introduction of housing development on the lower slopes.

4.10 Kaahu and Whakaahu (HVANFL 10)

Photo 4.12 Kaahu, Whakaahu and Lake Whakamaru from State Highway 30

Kaahu and Whakaahu are two iconic rock features with heights over 700m; they are seen across Lake Whakamaru which is located south of Whakamaru on the Waikato River. They are comprised of rock buttresses, cliffs and high peaks and combined with the lake they make a very high amenity area. In historic and tangata whenua terms these features were important markers on the river transport routes.

There is a mixture of pine, bush and pasture within this landscape.

The lake is man-made and overall the degree of naturalness is moderate. The main factors contributing to its identification as a high value amenity landscape are the drama of the landform associated with the lake, which makes this landscape memorable and vivid.

Activities that could threaten those values would be the introduction of additional cell phone or other telecommunications towers on the tops of the hills, any additional electricity transmission lines across the faces of the hills or conversion to forestry.

The relocation of existing power lines and towers currently located in front of these hills seen from State Highway 30 direction should be considered.

4.11 Waikato River and Reservoirs (HVANFL 11)

At 354 km long, the Waikato River is the longest river in New Zealand. As it leaves Lake Taupo it is confined in very narrow chasms through the Huka Falls and Aratiatia Rapids. From there it flows north through a mix of landforms and land uses, most notably, rocky gorges which it has carved out for itself over thousands of years. It is a strong flowing river which flows through the Waikato Lowlands, and passes through Cambridge, Hamilton, Ngaruawahia and Huntly, out to Port Waikato on the west coast. Prior to one of the Taupo eruptions, the Waikato River used to flow through the Hauraki Plains into the Firth of Thames, deviating where the Hinuera gap is now.

The Waikato River is often quite difficult to see – in places one has to search for it, because of the depth of the channel below the surrounding land. The vegetation on its banks varies between native forest, willows, pines, and pasture.

The river has been dammed in eight places forming lakes, along approximately half its length, that serve hydro electric stations. These lakes, particularly Lake Karapiro are very popular for recreational pursuits including canoeing, kayaking, water skiing, and motor boating. Fishing is also a regular activity. The lake is an international rowing venue. The Waikato River is used for fishing, waterskiing, wake boarding, boating and swimming, picnicking.

Photo 4.13 View of the Waikato River near Broadlands

The Waikato River was an important trade and access route for Maori and early Pakeha settlers; it has very strong historical and tangata whenua values, which are shared and recognised.

It has high natural character values in places. The main factors contributing to its identification as a high value amenity landscape are its length, its width, its importance to the Waikato region, and in places its drama as it passes through rocky gorges, and the expansive man-made lakes along its length.

Activities that could threaten those values could include additional hydroelectric schemes and transmission lines, visual access being cut off by buildings or forestry, and the reduction in water flow.

4.12 Kaimai Range - South (HVANFL 12)

This part of the Kaimai Range is located south of the Puketutu Stream which is south of Te Aroha. It is located in the Eastern Ranges landscape type. It is part of a strongly defined fault line, and forms a bush covered escarpment on the east side of the Waikato basin. The Kaimai Range itself stretches from the Karangahake Gorge south to the Mamaku Plateau. While this southern part of the ranges retains many of the characteristics of the rest of the Kaimai Range, it is lower, has fewer peaks and distinguishing features, and as a result is less memorable and vivid. The Wairere and Te Ariki Falls are features in this landscape.

Photo 4.14 View of the Kaimai Range from State Highway 27

There is an almost complete cover of native forest along the tops and parts of the slopes, and this part of the range connects the northern parts with the Mamaku Plateau. This part of the Kaimai Ranges has a wild and remote character, and in places very high natural character.

As stated earlier the Department of Conservation owns a large part of the Kaimai Ranges – the Kaimai Mamaku Forest Park contains 37,000 hectares of land, and stretches along the top of the range from Karangahake Gorge near Waihi to the Mamaku Plateau near Rotorua. The park marks the northern boundary for native red and silver beech and is the southernmost limit of the kauri.[9]

Maori settlers formed tracks through the bush, hunted, and used its plants for food and medicine.

There are many kilometres of tracks through the ranges, as well as huts and paragliding off the peaks.

The main factors contributing to its identification as a high value amenity landscape are its visual prominence on the east side of the Waikato basin, its elevation and its distinctive bush covered escarpment.

Activities that could threaten those values would be additional bush clearance, introduction of commercial exotic forestry, additional quarries and mines, and weed species.

[9] *www.doc.govt.nz*

4.13 Western Coastline - River Mouths, Harbours and Islands (HVANFL 13)

These landscape features include the Waikato River mouth, the Raglan, Aotea and Kawhia harbours, and the Marokopa, Waikawau, Awakino and Mokau river mouths and Gannet Island which is 27 km off the west coast.

These Western Coastline river mouths and harbours are mostly surrounded by alluvial lowlands containing pasture and stands of bush, with small discrete settlements in some places. They constantly demonstrate their formative processes – coastal erosion, sand bars being deposited and moved, sand dunes, sand spits, changing water channels and tides. These are the landscapes that demonstrate transient values most strongly – changing weather and light, changing sand bars and water channels. Some of them have sea-grass beds, tidal flats, and black sand.

Maori have a strong relationship with their coastlines and particularly with harbours and river mouths. Hundreds of years of Maori history are represented in these areas. For example, Kawhia is the final resting place of Tainui waka and Aotea is also a waka landing place. The sandspits at the entry to some of the harbours are burial grounds for the iwi (urupa) and are tapu. These coastal areas also have historic connections to settlers and trading, and have a very strong sense of place. These landscapes are much used for food gathering, fishing, and kayaking as well as swimming.

In terms of their aesthetic qualities, the islands, river mouths and harbours along the western coastline are strongly expressive of how they were formed, and also have high natural character and transient values. Many of these areas are wild and remote. The main factors contributing to the identification of this coastline as a high value amenity landscape are the remoteness, the contrast between the high energy coastline and the calm, sheltered harbour areas, the combination of a presence of bush, pasture, cliffs and sand bank areas as well as their cultural values.

Photo 4.15 Awakino River mouth

Current or likely activities that could threaten the values attributed to these areas include increased residential development, increased erosion through poor land management practices, establishment of commercial forestry activities, establishment and growth of quarrying and mining activities, offshore gas and oil exploration and windfarms.

4.14 Eastern Coastline - River Mouths, Harbours and Islands (HVANFL 14)

These landscape features include the Manaia, Te Kouma, Colville, and Port Charles harbours; Potiki Bay, Kennedy Bay, Whangapoua Harbour, Opito Bay, Whitianga, Tairua, Wharekawa, and Whangamata harbours. There are a large number of islands off the west and east coast of the Coromandel Peninsula including the Motukawao Group, the Mercury Islands and Slipper Island.

Photo 4.16 Wharekawa Harbour

These coastal landscapes include narrow coastal edges with cliffs, sheltered harbours, enclosed bays with steep bush clad headlands, enclosed estuaries with tidal flats and native forest fringe, and white sand beaches and the off shore Islands. Many of these landscapes are memorable and vivid, particularly those with white sand beaches punctured by headlands. Some of these such as Cathedral Cove and parts of Hahei have been identified as Outstanding Natural Features and Landscapes.

The harbours and bays are distinctive open expanses of water due to transient values such as fluctuating tide levels, changes in light and weather, and birds. Many of these areas have very large viewing audience. Some of these harbours and estuaries have wetlands associated with them, as well as mangroves and coastal forest.

Again Maori have a strong relationship with these coastlines, especially with the harbours and estuaries. Particularly important is Manaia Harbour, which has a Maori settlement on its edge and is used by Maori for food gathering. Again hundreds of years of Maori history are represented in these areas. There were many pa sites along these coasts. Captain Cook anchored in Mercury Bay in 1769 where he observed the transit of Mercury. Later this area became an important port for the kauri timber and gold trade.

The river mouths and harbours on the Eastern Coastline are a focus for recreation including deep sea fishing, sailing, swimming, kayaking, and tramping and walking and holiday homes.

These landscapes retain high natural character in some places. The main factors contributing to their identification as a high value amenity landscape are the variety of landscape character including inlets, harbours, white sand beaches, the visibility of these water areas, and their value to tangata whenua.

Activities that could threaten those values would include extensive coastal residential development, exotic forestry, aquaculture and marina developments.

4.15 Horohoro Cliffs (HVANFL 15)

These cliffs are located approximately 10 km south of Rotorua on the west side of State Highway 30. They are the eroding edge of a plateau-forming sheet of ignimbrite showing a columnar effect due to a system of vertical joints.[10] The cliffs rise to a height of 817m. There is good quality bush at the northern end of the cliffs. Pine trees have been planted close to the base of the cliffs in some places.

The landscape has a high degree of natural character at its northern end, reducing towards the south. The main factors contributing to its identification as a high value amenity landscape are its visual prominence, dramatic landform and geology and, its value to tangata whenua.

Activities that could threaten these values include removal of native bush cover and additional pine plantations at the base of the cliffs which will reduce their visual prominence and encourage wildling pines to encroach into the indigenous bush cover.

Photo 4.17 Horohoro Cliffs from State Highway 30

[10] *Legends of the rocks - An outline of New Zealand geology. Maxwell Gage. Whitcoulls Publishers. 1980*

5.1 Whangamarino, Kopuatai and Torehape Wetlands (SNLF 1)

These wetlands include the Kopuatai Peat Dome, Torehape wetland and the Whangamarino wetland and lakes. Whangamarino and Kopuatai wetlands between them constitute 15,800 hectares of freshwater wetland. These wetlands are located north and north-east of Hamilton.

Photo 5.1 Kopuatai Peat Dome from the air. From the Hauraki Landscape Assessment 2006

The Kopuatai Peat Dome is located within the Hauraki Plains, is the largest unaltered wetland in the country[11] and 8,800 hectares of it is crown owned. It has national reserve status and is managed by the Department of Conservation. It is the remnant of a huge wetland which once stretched from the Hauraki Gulf to Matamata and from the Kaimais to the Coromandel Ranges.

Whangamarino wetland encompasses Lake Waikare, the Whangamarino River, the Whangamarino Wetland and Lake Whangape. The formation of this wetland began 18,000 years ago when a volcanic eruption changed the course of the Waikato River from the Hauraki Plains to the Waikato Basin. Blocked by ash the river spread out in a huge fan across the flat Waikato landscape, gradually developing channels in the newly formed surface. Eventually the river consolidated in its present channel, leaving a complex of lakes and swamps (both permanent and seasonal) on either side.[12]

This expansive area of wetlands could well be considered to be an invisible part of the region's landscape. Despite their size these wetland areas are difficult to view, because they are surrounded by low lying land and the vegetation of the wetland is of sombre colourings and low stature. There are very few distinctive features except for the occasional clump of kahikatea and other trees. The full extent can only really be appreciated from an aircraft, though distant views can be gained from the surrounding hills.

Wetlands are essentially very concealed and private places. These wetlands are low lying and difficult to see and therefore not particularly vivid or memorable in terms of their landscape aesthetics but they have very high natural character values, and are rare. The main factors contributing to their identification as a significant landscape feature are their ecological values, and their rarity.

Activities that could threaten these values include draining the surrounding land, vegetation clearance and farming, which would alter the water balance in the wetlands.

[11] *www.doc.govt.nz*

[12] *National Wetland Trust website. Whangamarino Wetland and Lake Waikare.*

5.2 Miranda Shell Banks and Chenier Plain (SNLF 2)

A succession of cheniers, or shell ridges, have formed the plain at Miranda over the past 4,500 years. Built off shore in the Firth of Thames, each ridge is gradually pushed landward by tide and storm events. Eventually the ridge is raised above the tide. Sedimentation on the landward side of the ridge allows mangroves and saltmarsh to colonise the area. This process of natural reclamation gradually builds up the plain.

Photo 5.2 Shell banks at Miranda

Chenier plains are rare and Miranda is thought to be one of the finest examples in the world. These shell banks are a home for many migratory birds from the arctic, as well as resident sea birds and internal migrants.

The Firth of Thames is part of the East Asian Australasian Shorebird Site network which ensures the long term conservation of migratory shorebirds. The inter-tidal mud and sand flats extending from Thames to Miranda offer extensive feeding opportunities for wader and waterfowl and the flourishing and expanding mangrove and salt-marsh communities buffering the sea from the land, provide alternative habitats for birds and nursery areas for fish. The Firth provides an important fishery of local significance with flounder and snapper the main species caught as well as incidental catches of other species such as sandshark.

The southern shore of the Firth of Thames is used as a wetland of international importance under the Ramsar Convention. The Firth of Thames Ramsar site of 8,927 hectares lies within the coastal marine area.

Historically, Hauraki Maori lived predominantly on the fertile lowlands along the coast and waterways and the Firth was an important site for gathering both fish and waterfowl.

The shell banks have high natural character, transient and ecological values however they are very low lying and hard to see. The main factors contributing to its identification as a significant natural landscape feature are it is an extremely rare landform in world terms, which also has significant value for migratory birds.

Current or likely activities that could threaten these values include increased tourism, which may result in infrastructure upgrades such as roading, parking and/or drainage as well as additional human activity.

5.3 Huka Falls and Aratiatia Rapids (SNLF 3)

These features are assessed as distinct units within the Waikato River landscape which as an overall body is considered a high value amenity landscape (HVANFL 11). Each of these features includes the water area and the river margins.

Huka Falls and Aratiatia Rapids are located in the Central Volcanic Region close to Taupo. Though they are located in a chasm and therefore are not visually prominent, they form dramatic and visually powerful landscape features from close up.

At Huka Falls, the Waikato River suddenly narrows to a chasm less than 15m across and heaves the total water flow of the river over an 11m high ledge to plunge into a deep semicircular basin. The ledge is a band of silicified conglomerate created by ancient thermal activity.[13]

The Aratiatia Rapids are located in a narrow rocky chasm, rather deeper and narrower than that containing the Huka Falls. The rapids form a series of zig zags. For most of the time the river bed is dry as the flow of the river is diverted through a tunnel to a hydro generating station downstream, but twice a day the waters are returned to the river bed, released from the hydro lake above, and the rapids reappear, crashing and foaming down their old course.[14]

Photo 5.3 Aratiatia Rapids from the middle lookout

These two features – Huka Falls and Aratiatia Rapids - have a strong sense of place and identity. Part of their excitement is the roar of the water which is turquoise blue owing to the amount of air in it, the reflection of the sky and the snow melt.

From a recreation point of view there is a walk around the Huka Falls, and a series of walks to look-outs along the Aratiatia Rapids. A road bridge crosses the Aratiatia Rapids just below the sluice gates and from this road bridge the public can watch the sluice gates open and see the water roaring down the chasm, rising rapidly to its historic flow level.

The Huka Falls may be viewed from jet boats, and kayaking and canoeing is also available.

Both the Huka Falls and Aratiatia Rapids are memorable, vivid, and are very expressive of their formative processes; these are the main factors contributing to their identification as Significant Natural Landscape Features.

Activities that could threaten these values include; additional hydro-electric installations which could affect the flow of the water as well as adding landscape clutter, and Increased tourism involving larger viewing platforms and increased car parking.

[13] *www.hukafalls.com*

[14] *Mobil New Zealand Travel Guide. North Island Diana and Jeremy Pope. 9th edition*

5.4 Limestone Bluffs, Outcrops and Caves in the Waitomo Area (SNLF 4)

There are limestone outcrops, bluffs, pinnacles and caves throughout the area south of Port Waikato and inland of the Marokopa river mouth and in the area known as Waitomo. Though some of these features are distinctive, they are scattered, and do not constitute a 'landscape' in themselves. Also many of the features are underground.

5.4 Limestone pinnacles from the Marokopa Road

The process that made the Waitomo landscape began 35 million years ago. The land was invaded by water and became a shallow sea. Shell fragments and skeletons of sea creatures built up a sea floor and over time were buried, compacted and cemented to form limestone. The limestone became exposed through movements in the earth's crust and then as the limestone became exposed to rain the Waitomo landscape began to form.

These limestone landscapes are called Karst and are famous for their unusual features, including outcrops, stone arches, rivers disappearing underground, tomos and caves.

These landscapes offer a range of recreational pursuits including caving, rock climbing and abseiling and bush walks.

These features occur throughout the western part of the Waikato region, but most particularly in the Waitomo area, and are frequently located in prominent positions on the tops of hills. Activities that could threaten the values of these features would be the introduction more production forestry.

5.5 Geothermal Features (SNLF 5)

The main factors contributing to the identification of these geothermal features as Significant Natural Landscape Features are their uniqueness, recreational/ tourism values, historical and cultural values as well as high natural character in places. The natural character values vary within each area.

Activities that could threaten these values would be the addition of more built structures such as boardwalks, and safety railings, forestry, farming, vegetation clearance and electricity generation, which tend to diminish its qualities.

5.5.1 Craters Of The Moon

Craters of the Moon is a geothermal area located within the Wairakei field just north of Taupo. The area was created in the 1950s when the underground water pressure was lowered by a nearby geothermal power station. It contains craters of boiling mud along with other geothermal phenomena. From a landscape aesthetics point of view, this is not a feature of particularly high quality but as a geothermal landscape it provides a unique visual and recreational experience. It comprises areas of low shrubs interspersed with boardwalks and steaming craters.

5.5 Craters of the Moon west of Wairakei Village

5.5.2 Orakei Korako

Orakei Korako 'the Hidden Valley', located on the Waikato River north of Taupo, was opened as a tourist resort in 1937. This geothermal area contains mud pools, hot springs, approximately 23 active natural geysers, a cave 36.5m deep with a hot pool at the bottom and silica terraces that are thought to be the largest since the pink and white terraces.[15]

From a historical perspective the Orakei Korako area was occupied by Maori from earliest records, however the Ngati Tahu people, who are a sub tribe of Tuwharetoa, are thought to have vacated the area following the eruption of Mount Tarawera in 1886. The area was also located on the earliest known travel route from Rotorua to Taupo. A dugout canoe provided a means of crossing the river. These areas have high tangata whenua values and were used historically for their thermal properties.

5.6 Orakei Korako from Lake Ohakuri

[15] *Orakei Korako web site – www.orakeikorako.co.nz*

5.5.3 Lake Rotokawa

A lake that can be viewed from Broadlands Road between Taupo and Rotorua, this geothermal area includes many features – chloride springs, hot steam, and sulphur cliffs. Was highly valued as a hunting and cultivation area for Ngati Tahu.

5.5.4 Waiotapo Area

Located in a valley, north of Taupo close to the Waikato River, and not visible unless one pays to go in. The attractions include a champagne pool, geysers, mud pools, and volcanic craters and sinter terrace formations.

5.7 Te Kopia Scenic Reserve

5.5.5 Te Kopia Scenic Reserve

This is located on the south western side of the Paeroa Range. It has an elevation range of 400m to 979m. It contains a number of cliffs on the side of the range from which steam erupts. Interspersed between the cliffs are areas of bush. The vegetation extends from geothermal vegetation through to tall forest and a small wetland area. It has high natural character and can be viewed from Te Kopia Road.

5.8 Rainbow Mountain

5.5.6 Rainbow Mountain

Located to the east of State Highway 5 close to the regional boundary. This mountain rises to a height of 743m, and has rock outcrops with a range of colours from the geothermal activity. The bush on the slopes is regenerating and there is a radio mast on the top.

6.0 SIGNIFICANT INDIGENOUS FOREST AREAS (SIFA)

As stated earlier, Significant Indigenous Forest Areas comprise large areas of indigenous forest, usually located on hills, ranges or coastal escarpments, which have not been identified as either Outstanding or High Value Amenity Landscapes, but which are visually significant and contribute to the natural character of an area. The SIFAs have been shown on the GIS Maps that are part of this project. They are:

SIFA1_1	Headland due south of Port Waikato - Bush covered headland with landform up to 182m high
SIFA2_1	Limestone Downs - native forest area to the north and east of Limestone Downs
SIFA3_1	Eastern side of the Hapuakohe Range including Maungakawa west of Kapuatai Peat Dome
SIFA4_1	Large area of indigenous forest west of Te Kowhai, west of Hamilton
SIFA5_1	Large area of indigenous forest north-west of Pirongia, attached to it but at a lower level. Part of the Pirongia Forest Park.
SIFA6_1	Indigenous Forest of headland 418m high, north of the Marakopa River-mouth.
SIFA7_1	Aorangi Gorge on the Awakino River, adjacent to State Highway 3.
SIFA8_1	Indigenous forest on Mangakawa and Te Tapui, east of Cambridge.
SIFA9_1	Northern parts of the Mamaku Plateau, south of SH29
SIFA10_1	Indigenous forest south and east of the Rangitoto Range, Pureora Forest Park.
SIFA11_1	Northern edge of the Kawhia Harbour
SIFA12_1&2	Indigenous forest located on the hill range - Hauhungaroa Range - west of Lake Taupo
SIFA13_1	Indigenous forest on the southern slopes of the Hunua Range.

7.0 PART B CONCLUSION

Summary tables for the Outstanding Natural Features and Landscapes (ONFLs), High Value Amenity Natural Features and Landscapes (HVANFLs), and Significant Natural Landscape Features (SNLFs), have been prepared and are included at the end of this section. These record the ratings from the worksheets. The summary tables show the attributes used to rate these landscapes along the top row, and the features themselves listed in the left hand column. Totals for each landscape/feature are shown in the right-hand column of each table.

All of the Outstanding Natural Features and Landscapes (ONFLs) achieved between seven and fourteen 'high' ratings on the various attributes, particularly on 'memorability' and 'vividness' The ratings for historical associations, and values to tangata whenua relied heavily on access to reliable information. In a few cases no information was available. Similarly the ecological values are based on the information that was available. Recreation values were more easily tracked, through other landscape studies, on the internet, through guide books and from personal experience.

Many of the High Value Amenity Natural Features and Landscapes (HVANFLs) have achieved seven 'high' ratings on the various attributes, with a much larger number of moderate and 'low' ratings. Again the ratings for historical associations, and values to tangata whenua rely heavily on information being available, and in a few cases no information could be found.

The Significant Natural Landscape Features (SNLFs) achieved 'high' ratings of between three and seven. Significant Natural Landscape Features rated lower on the aesthetic values such as vividness and memorability than the other two categories. These are small features, part of bigger landscapes.

The Significant Indigenous Forest Areas (SIFAs), although visually significant and contributing to the natural character values of an area, were not tabulated because they are simply large areas of indigenous forest and not identified as either Outstanding Natural Features and Landscapes, high value amenity landscapes or Significant Natural Landscape Features.

Landscapes and features on both coastlines have been identified as either outstanding or high value amenity. These landscapes contribute strongly to people's appreciation of the pleasantness, aesthetic coherence and cultural and recreational opportunities of the areas. They have strong historical and tangata whenua associations and high recreational values. They are important coastal features and are highly valued by residents and tourists alike.

7.1 Outstanding Natural Features and Landscapes (ONFL)

This comprehensive landscape assessment of the Waikato region has identified the following landscapes as being Outstanding Natural Features and Landscapes (OFNL):

ONFL 1	Tongariro National Park
ONFL 2	Kaimanawa Mountains
ONFL 3	Northern Herangi Range
ONFL 4	Mount Karioi
ONFL 5	Coromandel Range and Moehau Range
ONFL 6	Maungatautari
ONFL 7	Pirongia
ONFL 8	Kaimai Range (north of Ngatamahinerua)
ONFL 9	Lake Taupo

Coastal Areas Coromandel

ONFL 10/1	Cathedral Cove, Shakespeare Cliff, Cook Bluff and coastline south of Hahei
ONFL10/2	Northern tip of Coromandel Peninsula and western slopes of Moehau Range down to the coast
ONFL10/3	Tuateawa

7.2 High Value Amenity Natural Features and Landscapes (HVANFL)

The assessment has also identified the following as High Value Amenity Natural Features and Landscapes (HVANFL):

HVANFL 1	Hakarimata Range and Mount Taupiri
HVANFL 2	Herangi Range - South
HVANFL 3	Rangitoto Range
HVANFL 4	Kuhama, Kakaramea, Lake Rotoaira and Pihanga
HVANFL 5	Pureora
HVANFL 6	Titiraupunga
HVANFL 7	Tauhara
HVANFL 8	Te Hoe
HVANFL 9	Paeroa Range
HVANFL 10	Kaahu and Whakaahu
HVANFL 11	Waikato River and Reservoirs
HVANFL 12	Kaimai Range (south of Puketutu Stream)
HVANFL 13	Western Coastline - river mouths, harbours and islands -

- Waikato River mouth
- Raglan (Whaingaroa) Harbour
- Aotea Harbour

- Kawhia Harbour
- Marokopa River mouth
- Waikawau River mouth
- Awakino River mouth
- Mokau River mouth

HVANFL 14 Eastern Coastline - river mouths, harbours and islands -

- Manaia Harbour
- Te Kouma Harbour
- Colville Harbour
- Port Charles
- Potiki Bay
- Kennedy Bay
- Whangapoua Harbour
- Opito Bay
- Whitianga Harbour
- Tairua Harbour
- Wharekawa Harbour
- Whangamata Harbour
- Off shore islands

HVANFL 15 Horohoro Cliffs

7.3 Significant Natural Landscape Features (SNLF)

Five Significant Natural Landscape Features have been identified. These are features that are located within a larger landscape and are neither outstanding nor high value amenity but have specific ecological or geological values.

As described in earlier sections, the Significant Natural Landscape Features (SNLF) are:

SNLF 1 Whangamarino, Kopuatai and Torehape wetlands

SNLF 2 Miranda shell banks and chenier plain

SNLF 3 Huka Falls and Aratiatia Rapids

SNLF 4 Limestone bluffs, outcrops and caves in the Waitomo area

SNLF 5 Geothermal features -

- Craters of the Moon
- Orakei Korako
- Lake Rotokawa
- Waiotapu Area
- Te Kopia Scenic Reserve
- Rainbow Mountain

7.4 Significant Indigenous Forest Areas (SIFA)

Thirteen areas of significant indigenous forest have been identified and are shown on the maps. These forest areas are located within a larger landscape and are neither outstanding nor high value amenity but are visually significant and contribute to the natural character of an area.

These areas are:

SIFA1_1	Headland due south of Port Waikato - Bush covered headland with landform up to 182m high
SIFA2_1	Limestone Downs - native forest area to the north and east of Limestone Downs
SIFA3_1	Eastern side of the Hapuakohe Range including Maungakawa west of Kapuatai Peat Dome
SIFA4_1	Large area of indigenous forest west of Te Kowhai, west of Hamilton
SIFA5_1	Large area of indigenous forest north-west of Pirongia, attached to it but at a lower level. Part of the Pirongia Forest Park.
SIFA6_1	Indigenous Forest of headland 418m high, north of the Marakopa River-mouth.
SIFA7_1	Aorangi Gorge on the Awakino River, adjacent to State Highway 3.
SIFA8_1	Indigenous forest on Mangakawa and Te Tapui, east of Cambridge.
SIFA9_1	Northern parts of the Mamaku Plateau, south of SH29
SIFA10_1	Indigenous forest south and east of the Rangitoto Range, Pureora Forest Park.
SIFA11_1	Northern edge of the Kawhia Harbour
SIFA12_1&2	Indigenous forest located on the hill range - Hauhungaroa Range - west of Lake Taupo
SIFA13_1	Indigenous forest on the southern slopes of the Hunua Range.

7.5 Coastal Environment

Outstanding natural landscapes and features, high value amenity landscapes and Significant Natural Landscape Features within the coastal environment have been specifically identified. It should be noted that although an assessment was undertaken no landscapes or features within the region's coastal environment have been identified as pristine.

All of the harbours, inlets, river mouths and islands have been identified as high value amenity landscapes. Some parts of the eastern coastline have been identified as Outstanding Natural Features and Landscapes.

The coastal environment is of significant value to the Waikato region and this has been identified from a landscape perspective on the GIS maps in accordance with the definition of the coastal environment that is discussed in section 2.2 Landscape Classifications.

7.6 Summary

The identification of Outstanding Natural Features and Landscapes, High Value Amenity Natural Features and Landscapes and Significant Natural Landscape Features and Significant Indigenous Forest Areas provide a basis upon which to prepare regional policy to guide decision making at a regional level and also to guide the preparation of district plans and policy to manage the effects of activities on landscape and natural character values at a local level.

The context for the preparation of policy relating to landscapes, the coastal environment and significant natural features is set out in sections 6, 7 and 30(1)(a), (1)(b) and (1)(gb) of the Act. It is a matter of national importance under section 6(a) of the Act, to preserve the natural character of the coastal environment and under section 6(b) to protect Outstanding Natural Features and Landscapes from inappropriate subdivision, use and development. Section 6(c) of the Act requires the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Section 7 of the Act sets out 'Other matters' to which particular regard must be had in exercising functions under the Act; sub-sections (c) and (f) are relevant in that they relate to the maintenance and enhancement of amenity values and the maintenance and enhancement of the quality of the environment.

As well as identifying these landscape values and features this assessment has identified threats and pressures on landscapes that may adversely impact on landscape qualities.

The landscapes and features that have been identified are regional assets of value for a number of reasons including tourism, other business and development activities, recreational, and aesthetic. Because these landscapes and features are of value they need to be managed so that the values are preserved, protected and/or enhanced.

Part B provides the basis upon which Part C of this report will be completed by identifying the landscape values so that an appropriate policy framework can be developed for managing these landscape values and features and ensuring that the values are maintained and enhanced into the future.

SUMMARY TABLE – OUTSTANDING NATURAL FEATURES & LANDSCAPES (ONFL)

	Aesthetic Values					Physical Attributes				Associations					Totals		
Attributes ➔ / ONFL ⬇	Memorability	Vividness	Expressiveness	Cohesion	Eminence	Geology	Topograpy	Ecology	Dynamic Change	Historical Assocaitions	Value to Tangata Whenua	Recreation Values	Shared/Recognised Values	Natural Character	High	Medium	Low
1. Tongariro National Park	H	H	H	H	H	H	H	H	H	H	H	H	H	H	14	0	0
2. Kaimanawa Mountains	M	H	H	H	M	H	H	H	M	M	H	M	M	H	8	6	0
3. Northern Herangi Range	H	M	H	H	H	M	H	H	M	M	M	M	L	H	7	6	1
4. Mount Karioi	H	H	H	H	H	H	M	H	M	H	H	M	M	H	10	4	0
5. Coromandel Range and Moehau Range	H	H	H	H	H	H	H	M	M	H	H	H	H	H	12	2	0
6. Maungatautari	H	M	H	M	H	H	H	H	M	H	H	M	H	H	10	4	0
7. Pirongia	H	H	H	M	H	H	H	M	M	H	H	M	H	H	10	4	0
8. Kaimai Range	H	H	H	H	H	H	H	M	M	H	H	M	H	H	11	3	0
9. Lake Taupo	H	H	H	M	H	H	M	M	H	H	H	H	H	M	10	3	1
Coastal Areas Coromandel 10/1 Cathedral Cove, Shakespeare Cliff, Cook Bluff, coastline south of Hahei	H	H	H	H	H	H	M	M	H	H	H	H	H	M	11	3	0
10/2 Northern tip of Coromandel Peninsula and western slopes of Moehau Range down to the coast	H	M	H	H	H	M	M	M	H	H	Φ	H	H	M	8	5	Φ
10/3 Tuateawa	H	H	H	M	H	H	H	M	H	H	H	M	M	H	10	4	0

Key

H High
M Medium
L Low
Φ No information available

SUMMARY TABLE – HIGH VALUE AMENITY NATURAL FEATURES & LANDSCAPES (HVANFL)

	Aesthetic Values					Physical Attributes				Associations					Totals			
Attributes → / HVANFL ↓	Memorability	Vividness	Expressiveness	Cohesion	Eminence	Geology	Topograpy	Ecology	Dynamic Change	Historical Assocaitions	Value to Tangata Whenua	Recreation Values	Shared/Recognised Values	Narural Character	High	Medium	Low	No info available
1. Hakarimata Range and Mount Taupiri	M	M	M	H	M	M	M	M	H	H	H	L	M	M	4	9	1	0
2. Herangi Range - South	M	M	M	H	M	M	H	M	L	Φ	Φ	M	Φ	H	3	7	1	3
3. Rangitoto Range	M	L	L	M	L	H	H	M	M	Φ	Φ	Φ	Φ	M	2	5	3	4
4. Kuharua, Kakaramea, Lake Rotoaira and Pihanga	M	M	H	H	M	H	H	M	H	M	H	M	M	H	7	7	0	0
5. Pureora	M	M	M	H	M	M	M	L	M	H	H	M	M	H	4	9	1	0
6. Titiraupenga	M	H	M	H	M	H	H	L	L	H	H	M	M	H	7	5	2	0
7. Tauhara	H	H	H	M	M	H	M	L	L	H	H	M	H	M	7	5	2	0
8. Te Hoe	M	L	M	M	M	M	M	H	L	Φ	Φ	Φ	Φ	H	2	6	2	4
9. Paeroa Range	M	M	M	L	M	M	H	L	L	Φ	Φ	M	L	M	1	7	4	2
10. Kaahu and Whakaahu	H	H	M	M	H	H	H	L	L	H	H	L	M	M	7	4	3	0
11. Waikato River and Reservoirs	M	M	H	M	L	M	M	L	H	H	H	M	H	M	5	7	2	0
12. Kaimai Range - South	M	M	H	H	M	H	H	M	H	H	M	M	M	H	7	7	0	0
13. Western Coastline – river mouths, harbours and islands	M	M	H	H	M	L	H	M	H	H	H	M	M	H	7	6	1	0
14. Eastern Coastline – river mouths, harbours and islands	H	H	M	M	M	M	M	M	H	H	H	H	H	M	7	7	0	0
15. Horohoro Cliffs	H	H	H	M	M	H	H	M	M	H	H	M	M	M	7	7	0	0

Key
H High
M Medium
L Low
Φ No information available

SUMMARY TABLE – SIGNIFICANT NATURAL LANDSCAPE FEATURES (SNLF)

	Aesthetic Values					Physical Attributes				Associations					Totals			
Attributes → / SNLF ↓	Memorability	Vividness	Expressiveness	Cohesion	Eminence	Geology	Topography	Ecology	Dynamic Change	Historical Associations	Value to Tangata Whenua	Recreation Values	Shared/Recognised Values	Natural Character	High	Medium	Low	No info available
1. Whangamarino, Kopuatai and Torehape wetlands	M	L	M	M	L	L	M	H	L	H	M	M	M	H	3	7	4	0
2. Miranda shell banks and chenier plain	M	M	H	M	M	M	M	H	M	H	Φ	M	H	H	5	8	Φ	1
3. Huka Falls and Aratiatia Rapids	H	H	H	M	M	H	M	L	M	H	M	H	M	M	7	6	1	0
4. Limestone bluffs, outcrops and caves in the Waitomo area	M	M	H	M	M	H	H	M	M	M	M	M	M	M	3	11	0	0
5. Geothermal Features	Values vary for each geothermal feature – Natural character values for each feature are identified in the background data of the GIS Maps.																	

Key
H High
M Medium
L Low
Φ No information available

PART C

POLICY FRAMEWORK TO MANAGE IMPORTANT LANDSCAPES

PART C CONTENTS

1.1 Economic and Landuse Activity

Geographically the region forms the northern part of the country's economic spine which is formed by the State Highway 1, North Island Main Trunk Railway and the Waikato River corridor. It lies between New Zealand's biggest city and one of the country's busiest ports. It provides a vital corridor for road, rail and transmission infrastructure.

The State Highway 1 corridor remains the principal corridor for the passage of trade and goods and services out of the Auckland region and to the rest of the country. Continued improvement of State Highway 1 and its supporting network of State Highways is reducing congestion and improving efficiencies. Improvements to the transport network and consequential reductions in congestion and travel times can be expected to increase interest from the transport and distribution sector around key transport interchanges for air, rail and road.[1]

Growth in the neighbouring regions of Auckland and Bay of Plenty also has an impact on the region as they rely on the Waikato to meet many of their recreational and resource needs (including energy, water, waste disposal and aggregate supplies).

Paralleling parts of the State Highway network with the North Island Main Trunk railway also provides the opportunity for significantly increasing rail related business in certain settlements.

Industry within the region encompasses the key sectors of: horticulture, agriculture, dairy produce, forestry, coal mining, gold mining, aggregate extraction, tourism, and electricity generation.

The Waikato River dissects the region, providing water supply for both local residents and the Auckland population, as well as providing support for the agricultural and energy production sectors.[2]

The dairy industry is a dominant industry in the Waikato region. It comprises two main industries, namely dairy cattle farming and dairy product manufacturing.[3] The region's rich soils and productive pastoral land are the mainstay of the agricultural, and dairying sectors and the significant volume of employment and regional wealth that they generate.

1 *Waikato District Council - District Growth Strategy*

2 *Waikato District Council - District Growth Strategy*

3 *Waikato Region Economy - Environment Futures Report*

The forestry industry in the Waikato region consists of three main industries: forestry and logging; wood and wood product manufacturing; and paper and paper product manufacturing.[4] Extensive areas of forest plantation are a distinctive element in the region. It can be expected that production forestry and its associated harvesting and trucking activity will remain an important element in the rural landscape.

The National Grid owned by Transpower has numerous lines in the region taking electricity from the Huntly thermal power station and from further afield with lines from Stratford and Whakamaru. Vector has a major pumping station at Waikokowai, close to Huntly and part of the gas pipeline network from New Plymouth to Manukau crosses the region. There are geo-thermal power generating plants at Wairakei, north of Taupo.

The Waikato region is a key area for electricity generation. Increasingly, the extent and diversity of local resources is seeing the region develop as an energy centre for New Zealand. The Genesis Huntly Thermal Power Station provides electricity to the National Grid generated from both coal and natural gas; it is a significant component of the National Network. Wind power is also being seriously investigated. One wind farm for WEL Energy on the Wharauroa Plateau, near Te Uku was granted by Council but appealed to the Environment Court and a second wind farm south of Port Waikato has been applied for by Contact Energy.[5]

The Waikato region is endowed with valuable minerals supporting mining and quarrying industries. These include the removal of sand, gravel and rock for use in the building and road construction industries. The North Islands most important coal field is at Rotowaro, 10 km west of the Huntly township. There is also gold mining occurring at the Martha Mine in Waihi. With the possible closure of this mine on the horizon, the mining industry may follow a downtrend. In the case of mining, higher production costs associated with signing the Kyoto Protocol may also affect longer term growth.[6]

Like most of the regions in New Zealand, the Waikato region has a rich cultural and historical background that dates back to the 18th century. The Waikato region was the centre for the largest and most formal war between Maori and European in the nineteenth century. Ngaruawahia is the official residence of the Maori King.

Tourism is a dominant industry in the Waikato region. A significant aspect of the areas attraction to tourists is the number and variety of landscapes and landscape features. Attractions such as the beaches of the Coromandel Peninsula, Waitomo Caves, Lake Taupo, Tongariro National Park, geo-thermal fields near Taupo and Rotorua, together with the region's proximity to Auckland, Tauranga and Rotorua make the Waikato region popular for domestic and international tourists alike.[7]

4 *Waikato Region Economy - Environ Futures Report*

5 *Waikato District Council - District Growth Strategy*

6 *Waikato Region Economy-Environment Futures Report*

7 *Waikato Region Economy-Environment Futures Report*

With these attributes, and as travel times reduce, the region becomes increasingly attractive for housing choice. Similarly, the regions largely congestion free environment offers a competitive advantage over alternative locations within Auckland for economic development.

Due to the range of economic activities occurring in the region there are associated threats and pressures on landscape values that need to be managed in order to fulfil the Councils' legal obligations under the Act.

1.2 Environmental Threats and Pressures on Landscape Value

1.2.1 Background

As stated above the Waikato region is an attractive location for a wide range of economic activities due to the variety and quality of natural resources (minerals, aggregate, water supply, geo-thermal energy, versatile soils) and also physical resources such as the mountains (Tongariro, Ngauruhoe and Ruapehu), extensive coastline, Waikato river, wetlands and lakes. The geographic location of the region adjacent to New Zealand's largest metropolitan area and the improvements in transport networks ensures ongoing demand for business to locate in this area, as well as for development around the major urban areas and coastal locations.

Much of the region is rural with Hamilton being the main urban centre. The region encompasses some of the most highly prized areas of coastline in New Zealand as well as some of the most rugged and remote coastline.

Because of the diversity of landscape types and land uses within the region there are a wide range of threats and pressures to landscape values.

The Act states that the preservation of the natural character of the coastal environment, wetlands, lakes, rivers and their margins is a matter of national importance. The protection of Outstanding Natural Features and Landscapes is also stated as a matter of national importance.

General matters that Councils' have to have regard to in all decision making under the Act include the maintenance and enhancement of the quality of the environment as well as the maintenance and enhancement of amenity values.

Given the above; activities and actions that threaten landscape values and landscape quality need to be carefully managed.

1.2.2 Soil Erosion

One of the most significant impacts on the visual quality of the rural landscape in the Waikato region is soil erosion.

The visual impacts of soil erosion are particularly prominent in the farming and forestry country in the central and southern areas of the region and also along the western coastline. The western coastline in particular has been denuded of vegetation and is exposed to the harsh westerly environment. Primarily vegetation removal and land use activities such as farming and forestry are the main contributors to soil erosion.

Photo 1.1 Hill country erosion south of Te Kuiti State Highway 1

In a landscape sense soil erosion detracts from the visual continuity and quality of the landscape by creating large scars on hill slopes.

Soil erosion is also linked with the sedimentation of water ways. Potentially this reduces the quality of water in water ways detracting from habitat quality, and also the ability to use these resources for water supply and recreational purposes. Sedimentation also leads to the silting-up of water ways and can increase downstream flooding. As ecological aspects as well as endemic and recreational qualities form part of the assessment criteria of landscape values, activities that adversely affect these qualities need to be managed, particularly in respect of outstanding or highly valued landscapes or natural features.

1.2.3 Removal of Native Vegetation

Native vegetation, particularly in large stands, on mountain ranges and on the margins of wetlands, lakes and rivers contributes significantly to the natural character and landscape values of the region.

Historically land has been cleared of native vegetation for the establishment of farming and forestry activities. In wetland areas historical land development techniques resulted in wet areas being drained with a subsequent loss of the native vegetation endemic to these areas. On slopes and mountain areas in particular the loss of native vegetation and the replacement with pasture can result in significant adverse effects on the landscape.

Given the significant contribution that the presence of native vegetation makes to landscape values it is important to create a policy framework to manage the effects of activities in relation to the removal of native vegetation. There are policy and other mechanisms, such as education and rates relief, that may be employed to encourage the protection and planting of native vegetation.

Photo 1.2 Western Coastline

1.2.4 Commercial Forestry

Commercial forestry poses a range of threats to landscape values both when established as well as during and post harvest.

When commercial forests are felled the remnant debris affects the ability to accurately view the variety of landform and the felled forest detracts from the visual quality of the landscape, at least in the short term. Established commercial forestry also affects the ability to accurately view contour and the variety of land form.

Photo 1.3 Landform contrast

Commercial forestry is an important rural land use particularly in areas where the soils may be of poor quality, and consequently the range of rural land uses limited. Forestry in general is also an important reservoir for greenhouse gases that they have removed from the atmosphere and forests assist in managing peak flows of water in storm events minimising soil erosion.

Commercial forestry activity contributes approximately 3% to New Zealand's annual GDP and the commercial forests in the central north island are significant generators of this value[8].

However in recent times due to the fall in value of wood products some of the forestry in the region is being converted back to pastoral farm land. Over the past few years Carter Holt Harvey has sold about 5000 hectares of the Kinleith estate near Tokoroa and most of this has been converted to dairy pasture. The single largest block of land identified for conversion in the region however was the Waikato Tauhara Lease Lands near Taupo which is now owned by Wairakei Pastoral Ltd. The 25,693 hectare area is to be used for dairying, beef and sheep farming as well as cropping. The conversion is to take 15 to 20 years to complete.

This conversion of forest to pasture is opening views of the wider landscape up that have been closed to travellers on state highways in the area for years. It is however also increasing nutrient loads in the area's waterways and groundwater, as well as affecting flood levels, soil contamination, greenhouse gases and biodiversity.

In relation to managing the effects of land use activity on landscape values, natural character values, and Outstanding Natural Features and Landscapes, a tiered policy framework is necessary so that forestry as an activity is only managed where this is directly necessary to ensure that the natural character of the coastal environment, wetlands, lakes, rivers and their margins are preserved and that Outstanding Natural Features and Landscapes and high value amenity landscapes are protected.

[8] *New Zealand Institute of Forestry – Forests and Forestry – A briefing paper to the incoming Government November 2008 – page 5.*

1.2.5 Urban Sprawl, Rural Residential and Coastal Development

In times of economic growth there can be significant demand for urban residential and business land expansion within towns and cities, rural residential development around the periphery of significant towns and cities, as well as residential development in coastal areas as a greater number of people seek, and can afford, holiday homes.

The expansion of urban land areas for residential and business purposes usually coincides with periods of economic growth. This type of growth can adversely affect landscape and natural character values if it is poorly planned and / or occurs in an ad-hoc manner. By planning the expansion of urban areas in a coordinated manner, landscape values can be protected by avoiding areas of high landscape and/or natural character value, providing for reserve networks, protecting water ways, minimising earthworks, and generally following the principles of low impact design.

Rural residential development provides an alternative rural living environment usually in relatively close proximity to urban areas and on smaller sized landholdings that do not require full time land management. This type of development can adversely affect landscape values by reducing open space and altering the pattern of land development from farming based activities to more residential based land use activities. It has also taken extensive areas of high quality land out of production, reducing the economic capacity of the region. Further, the introduction of urban values into a rural setting has put remaining traditional rural industries under pressure to reduce noise, dust, smell and other factors that are an unavoidable aspect of their activity if they are to continue to survive and operate efficiently. Often the dwellings on these sites are larger and more prominent in the landscape than typical rural farm houses.

Coastal development has the potential to adversely impact on the natural character of the coastal environment, the preservation of which is a matter of national importance. Natural character can be affected by a range of factors including the removal of vegetation, earthworks and an increased density of housing.

Policy frameworks need to be applied to manage the effects of rural residential development and the expansion of urban land. As stated above these types of development can be appropriate if they are properly managed and areas of the highest landscape character and value are avoided. Requiring structure plans to be prepared in relation to the extension of urban areas for residential or business purposes will ensure that overall environmental values can be protected. In terms of rural residential development, this type of development has the potential to adversely affect rural character values and can also generate a range of other adverse effects such as reverse sensitivity effects. Potentially this form of development can have significant adverse cumulative effects in relation to eroding landscape character and therefore requires

careful management. Identifying specific areas for this type of activity to occur or minimising the density of rural residential sites are methods available to manage the effects of this type of development.

In respect of the coastal environment, it is important that any policy framework reflects the New Zealand Coastal Policy Statement and ensures that any additional coastal development is in areas where the natural character of the coastal environment is already compromised i.e. the areas of the coastal environment with the highest levels of natural character should be avoided. There is also the potential to provide incentives through the policy framework to enhance the natural character of the coastal environment. One method is to enable subdivision on the basis of undertaking native revegetation and protecting it in perpetuity. This incentive framework of enhancement is one that has been supported by the Court in a number of decisions (*Evensons Investments versus Rodney District Council, Di Andre versus Rodney District Council*) involving subdivision of coastal land. However consents have generally only been granted when it has been able to be demonstrated that the associated development can occur without adverse visual effects or adverse effects on the landscape character and quality of the environment.

Photo 1.4 Waikato Region

1.2.6 Energy and Infrastructure

The Waikato region is energy rich, possessing significant energy resources and because of its strategic location, the Waikato region contains a number of major infrastructure sites. Primarily infrastructure development is related to electricity generation through hydro, gas, coal, geo-thermal and more recently wind generation. However, increasingly the high growth in the neighbouring regions of Auckland and Bay of Plenty has meant that they rely on the Waikato region to meet many of their resource needs such as energy, water, waste disposal and aggregate supplies.

As stated there are also major roading networks through the region. Continued improvement of the State Highway 1 and its supporting network of State Highways is reducing congestion and improving efficiencies. The progressive implementation of the Waikato Expressway is reaching deeper into the region and will ultimately bypass Huntly and Ngaruawahia. State Highways 2 and 26 provide nationally important routes out to the east coast from Auckland and Hamilton respectively. Infrastructure whilst necessary also has the potential to have significant adverse effects on visual and landscape values. Addressing environmental effects is always a significant issue for any infrastructure provider when seeking consent for new projects.

Because infrastructure is generally large scale in terms of size and the area required for it is often extensive, there can be significant adverse effects on landscape. Power pylons and wind farms are two types of infrastructure that can create significant adverse visual effects and significantly detract from the quality of a landscape. The effects of infrastructure on landscapes can be minimised by careful siting, avoiding important view shafts and avoiding locating on or near Outstanding Natural Features and Landscapes. In May 2008, consent was granted by Waikato District Council and Waikato Regional Council for WEL Networks and Meridian Energy to build and operate a 28 turbine wind park on the Wharauroa Plateau, near Te Uku, seven kilometres east of Raglan; this consent has subsequently been appealed to the Environment Court by three submitters. A further wind farm application has been lodged by Contact Energy for a 180 turbine wind farm south of Port Waikato along the remote western coast of the Waikato region to Te Akau South and is currently being considered by a Board of Inquiry.

An appropriate method to manage the potential adverse effects of infrastructure on landscapes is to clearly state where infrastructure, with the potential to adversely affect landscape values and features, shall avoid locating i.e. on or near the 'best' landscapes and natural features. This then means that there is scope to locate outside of these areas, which is the majority of land areas in the region.

1.2.7 Quarrying and Mining

A range of quarrying and mining activities occur in the region including iron sand mining, gold mining, aggregate, limestone and coal extraction. Other mineral resources include clays, sulphur, pumice, petroleum, perlite, ilmenite and serpentinite. Minerals are used for a variety of purposes and are vital to the economic and social wellbeing of the region. The contribution that mining makes to the regional economy is almost three times as great as its contribution to the national economy as a whole.[9]

Photo 1.5 Source: The Encyclopaedia of New Zealand – Internet Taharoa Ironsands

Because the activity is confined by the location of the resources there is always a balance between the effects of any proposal on the landscape and the demand or need to extract the resource. Different extraction techniques also generate different levels of environmental effects, and some extraction methods are more costly than others so again there is a balance between achieving quality environmental outcomes and ensuring the economic viability of activities.

[9] *Operative Waikato Regional Policy Statement (October 2000).*

Currently some of the most significant quarrying and mining activities in the region occur within the coastal environment, for example iron sand mining at Taharoa, south of Kawhia Harbour and at Maioro, near Port Waikato. Sand extraction has occurred at several coastal locations in the past however most of these operations have now stopped. Quarrying and mining activities have the potential to significantly adversely affect landscape by virtue of location, associated machinery and the scale of earthworks and landform modification that is often required to extract the resource.

Because extraction based activities rely on the location of the resource there is limited ability to avoid certain locations, however as for infrastructure a clear and directive policy framework is considered the most appropriate so that the 'best' and most highly valued areas are avoided leaving the remainder of the land area available for consideration. In addition to this policy framework it would be appropriate for territorial authorities to include detailed assessment criteria relating to the avoidance and mitigation of effects in relation to proposals for the establishment of new extraction activities.

1.2.8 Recreational Activities and Associated Facilities

Photo 1.6 Source Internet – Mount Ruapehu

As discussed the Waikato region is rich in natural resources and as such is a haven for recreational activities of all varieties, including some that are recognised world-wide. There is skiing on the mountains in the Tongariro National Park which is a World Heritage Site recognising its outstanding cultural and natural landscapes. Lake Taupo is an important tourist attraction as an international trout fishery and water sport location, and the Waikato River with Lake Karepiro is a primary location for competition rowing. There are also numerous walkways, particularly in the Coromandel ranges which contain a significant area of Department of Conservation estate.

In addition to the above there are all the beaches of the Coromandel Peninsula which are popular destinations for holiday homes and holiday destinations. Mining in the Coromandel, including heritage values associated with historical mines, as well as present day operations, is an area of significant potential for tourism. Raglan boasts one of the best left hand surf breaks in the world.

These areas, together with other areas throughout the region, are particularly suitable for a wide range of activities including tourism, recreation, temporary military training and search and rescue exercise.

National and regionally recognised natural and physical resources within the region contribute significantly to tourism within the region, for example: Waitomo Caves, beaches, significant indigenous flora and fauna and dive locations make an important contribution to the adventure tourism industry.

Photo 1.7 Coastline

Issues associated with coastal development have been discussed above however recreational activities can have other impacts or threaten landscapes in other ways that have not yet been addressed in this report. For example the construction of infrastructure such as chair lifts for skiing can have adverse cumulative effects on the quality and natural character of the mountain landscape. The values of the Tongariro Crossing are being threatened by increasing numbers of trampers creating erosion along the track. Boating activities can threaten the quality of water ways by spreading noxious weeds, can result in noise pollution. They can also lead to a demand for infrastructure such as boat ramps and associated car parks which can detract from landscape quality if not well located and designed.

Because the issues associated with recreational activities are generic and also diverse it is recommended that the most appropriate method for addressing these issues is through generic statements of policy that would filter down to territorial authority policy in a more detailed manner. It is also considered that public education in relation to matters such as litter and spreading of weeds etc on water ways and in bush areas is an effective tool to address these issues.

2.0 THE IDENTIFICATION AND MANAGEMENT OF OUTSTANDING NATURAL FEATURES AND LANDSCAPES

New Zealand Environment Court case law, such as the Whakatipu Environmental Society Inc. versus the Queenstown Lakes District Council, has provided guidance as to the way in which assessments of Outstanding Natural Features and Landscapes can be appropriately carried out.

Photo 1.8 Mount Tongariro

Part A of this study details how the assessment criteria for determining landscape quality in the region has been derived. The criteria utilised reflects the level of detail required to undertake a regional study and also provide a framework within which more detailed landscape assessments can be undertaken by territorial authorities.

Through researching New Zealand landscape studies and also overseas examples it became apparent that there is no 'agreed formula' although there were commonalities amongst both overseas and New Zealand examples in relation to the assessment criteria. For example most studies incorporate a combination of assessment between the geo-physical characteristics of the landscape, human / cultural elements and ecological patterns.

Outstanding Natural Features and Landscapes are identified through undertaking a broad landscape study across the defined study area with the Outstanding Natural Features and Landscapes being those that rate the highest within the assessment area.

In this instance the study area is the Waikato region, and those natural features and landscapes that are significant at a regional level are identified. A local study, such that of the Thames Coromandel district, is carried out at a finer grain and identifies landscapes and features that are significant at a local level, but may not be at a regional level.

This study adopted an assessment methodology that combined the assessment criteria utilised in the *Wakatipu Environmental Society Inc versus Queenstown Lakes District Council* case with international and local accepted practice and also the author's professional experience.

The assessment criteria utilised in this study were:

- Aesthetic values:
  - Memorability
  - Vividness
  - Expressiveness.
  - Cohesion
  - Eminence
- Physical attributes/Natural science factors:
  - Geological components
  - Topographical features
  - Ecological aspects
  - Dynamic components
- Associations:
  - Historical associations/endemic
  - Value to tangata whenua
  - Recreational values
  - Values that are shared and recognised
- Natural character
  - Absence of development
  - Natural elements
  - Natural patterns
  - Natural processes

These criteria provide a framework for more detailed studies that are, and will be, undertaken by territorial authorities.

Utilising these criteria this study has identified ten outstanding landscapes and natural features in the Waikato region.

Because of the requirements stated in section 6(b) of the Act these landscapes have to be protected. In protecting outstanding landscapes a clear and direct policy methodology is favoured. The matters set out in section 6 of the Act are matters of national importance and therefore there is no scope for discretion in relation to the implementation of these legal requirements.

In order to protect Outstanding Natural Features and Landscapes there needs to be a clear understanding of the elements and features that contribute to the rating of outstanding. In this way any development proposals can be assessed in relation to the impact that they will have on the values that contribute to the rating of outstanding.

This study has provided a specific description in relation to each of the outstanding landscapes and natural features that have been identified detailing the elements that contribute to the rating of outstanding. It has also provided a list of current threats and likely pressures.

3.0 THE IDENTIFICATION AND MANAGEMENT OF AREAS OF PRISTINE OR HIGH NATURAL CHARACTER

Section 6(a) of the Act requires that the natural character of the coastal environment, wetlands, lakes and rivers and their margins be preserved.

It is worthy to note that natural character is accepted as being a sub-set of overall landscape classification. In a 1997 study undertaken by Ministry for the Environment, Boffa Miskell and Environment Waikato it is stated that:

> *'The primary components which underpin natural character in terms of Section 6(a) are natural processes, natural elements and natural patterns'* [10]

Natural character therefore represents the 'natural' rather than cultural components of landscape. This interpretation of the concept of natural character continues to be correct in relation to current case law. The New Zealand Coastal Policy Statement is currently under review. Policy 1 of the review sets out those features that represent the coastal environment. To ensure that this study is current it is these elements that have been utilised when considering coastal landscapes as required by the study. The elements are:

- The coastal marine area;
- Land and waters where coastal qualities or influences are a significant part or element;
- Land and water affected by active coastal processes;
- Areas at risk from coastal hazards;
- Coastal vegetation and habitat;
- Landscapes and features that contribute to the natural character and visual qualities or amenity values of that environment.

Because the Act requires that the natural character of the coastal environment, wetland, lakes and rivers and their margins be preserved a higher status of policy direction is required than for the protection of Outstanding Natural Features and Landscapes.

'Preservation' is a stricter requirement than 'protection', and means:-

> '*no change, whereas protection involves a value judgement as to the degree of protection necessary and how it can be afforded'.*[11]

[10] *Natural Character: Concept Development in New Zealand Planning Law and Policy – page 92.*

[11] *Ministry for the Environment report to Select Committee on Supplementary Order Paper 22*

Case law has generally recognised a spectrum: areas of high natural character require the greatest degree of preservation and protection, whereas environments that have been modified do not need to be preserved as such and require less protection. However, the Court has also been quite clear that the effect on the remaining natural character in a modified environment must be considered and may, though diminished, still warrant preservation or protection.

Given the need to 'preserve' a policy framework of avoidance in terms of activities that may detract from or adversely impact on the most highly valued areas of the coastal environment, wetland, lakes and rivers and their margins is considered appropriate.

The policy framework of the New Zealand Coastal Policy Statement recognises that preservation of the natural character of the coastal environment does not mean blanket avoidance within the coastal environment, but rather is a management regime to ensure that activities occur in those areas that are already compromised in relation to their degree of natural character. The same approach is practically adopted in relation to wetlands, lakes, rivers and their margins.

4.0 THE MANAGEMENT OF HIGH VALUE AMENITY NATURAL FEATURES AND LANDSCAPES

Amenity values are defined in the Act as:

> *'those natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes:'*

High Value Amenity Natural Features and Landscapes are therefore those landscapes that are not outstanding but are important because of how they are valued by people due to their pleasantness, aesthetic coherence and their cultural and recreational attributes.

A Ministry for the Environment paper on rural amenity values states that:

> *'Amenity, as a resource management issue, is comprised of two components. First, amenity attributes – these are the tangible and measurable matters such as noise, odour, density of development, shading, etc that together define the amenity character of an area. The second component is perceptions and expectations that people hold about rural amenity. These derive from people's culture, values, and desires, and from people's differing tolerances in relation to amenity attributes and to changes to those attributes.'*

Landscape values clearly represent a combination of both components of amenity. Density of development affects landscape and perceptions are an important component in determining landscape quality and value.

As detailed in Part B, in the Waikato region High Value Amenity Natural Features and Landscapes include:

- Hakarimata Range and Mount Taupiri
- Southern portion of the Herangi Range
- Rangitoto Range
- Kuhama, Kakaramea, Lake Rotoaira and Pihanga
- Pureora
- Titiraupunga
- Tauhara – due east of Taupo
- Te Hoe – west of Tahuna
- Paeroa Range – north of Taupo
- Kaahu and Whakaahu
- Waikato River and Reservoirs
- Kaimai Range (south of Puketutu Stream)
- Islands, river mouths and harbours – Western Coastline
    - Waikato River mouth
    - Raglan (Whaingaroa) Harbour
    - Aotea Harbour
    - Kawhia Harbour
    - Marokopa River mouth

- Waikawau River mouth
- Awakino River mouth
- Mokau River mouth

- Islands, river mouths, harbours and islands – eastern coastline
  - Manaia Harbour
  - Te Kouma Harbour
  - Colville Harbour
  - Port Charles
  - Potiki Bay
  - Kennedy Bay
  - Whangapoua Harbour
  - Opito Bay
  - Whitianga Harbour
  - Tairua Harbour
  - Wharekawa Harbour
  - Whangamata Harbour
  - Off shore islands
- Horohoro Cliffs

High Value Amenity Natural Features and Landscapes require a more generic level of protection and management than Outstanding Natural Features and Landscapes and the coastal environment, wetlands, lakes and rivers and their margins.

An appropriate policy framework is considered to be one where the elements contributing to the amenity values of the identified landscapes and features are managed such that overall the amenity values of those landscapes and features are not eroded.

5.0 PART C CONCLUSION

The location of the Waikato region adjacent to New Zealand's largest metropolitan area to the north, one of the country's busiest ports to the east and the central plateau area to the south ensures that the region plays an important role in a wide range of economic and social aspects of New Zealand society. For these reasons, as well as the fact that there is a wide variety of landscape types and some world and locally renowned landscape features, the region is highly valued as a destination for business, recreational, and living opportunities.

The area boasts significant features such as the central plateau mountains that are popular for skiing, the Waikato river which is a source of water and hydro electric energy, as well as a valued recreational features including Huka Falls and the Aratiatia rapids; the popular surf breaks at Raglan, the geothermal fields, and the popular holiday destinations of the Coromandel Peninsula.

The results of this study have proven that the region has a wide variety of landscape types as well as some Outstanding Natural Features and Landscapes which are internationally, nationally and regionally significant. The study has also identified that some of the most important landscape values and natural features are under pressure or subject to environmental threats that could adversely affect their value.

Pressures and threats need to be managed in the region on an ongoing basis in order to ensure that the important landscape values and natural features that are of significance in the region are protected or preserved.

As well as being a requirement of the Act protecting the important landscapes and natural features of the region is important in relation to business, lifestyle and recreational values. Protecting the important landscapes and natural features of the region means that the Waikato region is a more pleasant place to live, work and play.

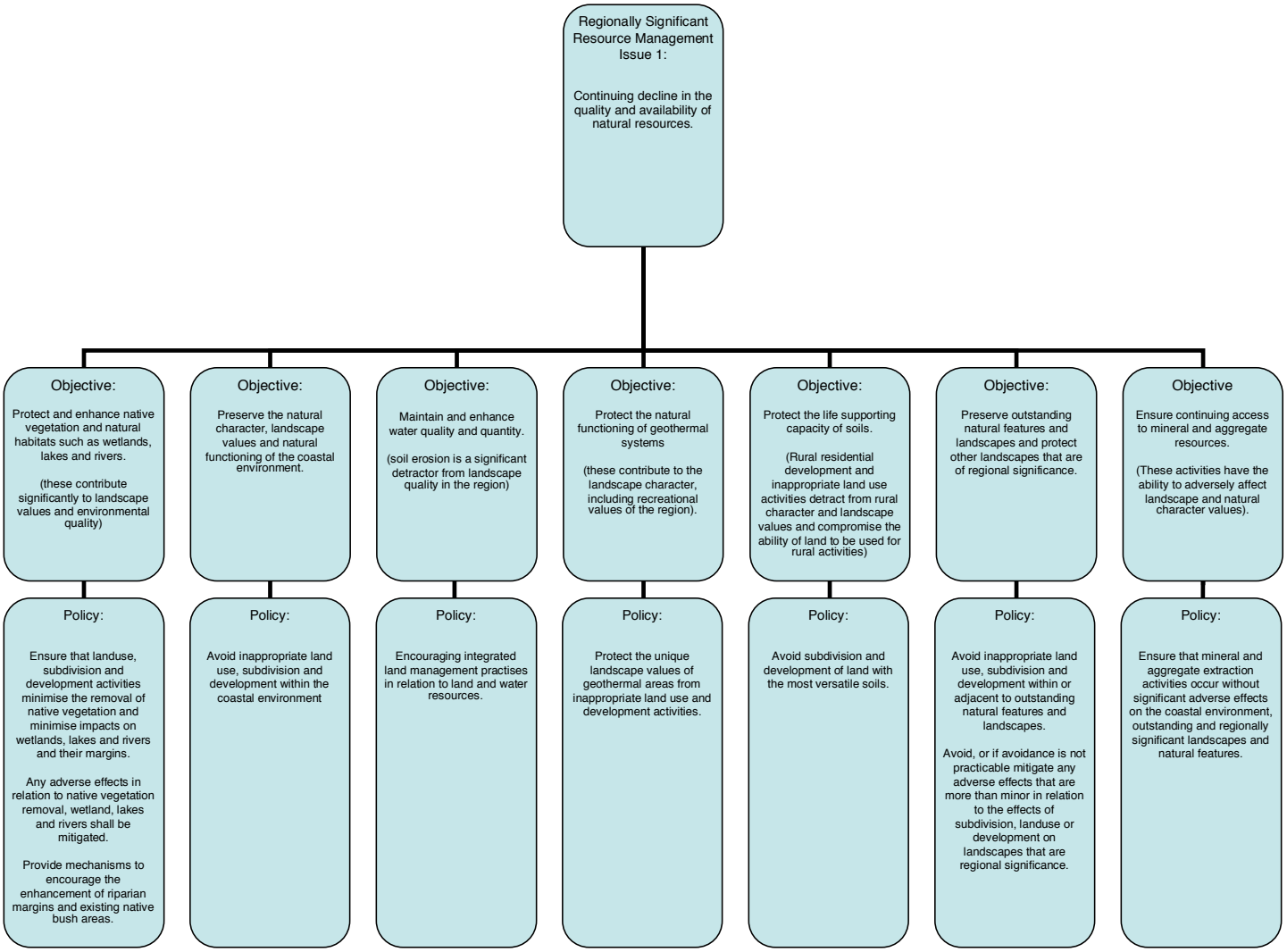
A possible policy framework has been prepared providing suggested topics for objectives and policies relating to landscape values and managing landscape values. The proposed framework has been prepared using the Proposed Regional Policy Statement regionally significant resource management issues as a basis.

Throughout the text of this section of the study other methods for managing landscape values and natural features have also been discussed. Objectives and policies within planning documents are one method of managing landscape values and natural features however other methods such as rates incentives, education and collaborative projects are other methods that are in some instances, more appropriate methods for managing landscape and landscape values.

As well as preserving, protecting and enhancing landscape values and natural features there is also the opportunity for enhancement, particularly in relation to soil quality and the management of riparian margins.

Overall this study provides the Council with an assessment basis to protect enhance and manage landscape values and natural features. The study also assists in providing baseline information for the future monitoring and management of landscapes within the region.

Possible Policy Framework for Managing and Protecting Landscape Values



Regionally Significant Resource Management Issue 2:

Effects of climate change.

Objective:

Protect and enhance native vegetation.

(This contributes significantly to landscape values and environmental quality and assists with the effects of climate change)

Policy:

Ensure that landuse, subdivision and development activities minimise the removal of native vegetation.

Objective:

Ensure that exotic forestry activities that are important for managing the effects of climate change to not have significant adverse effects in relation to landscape values and natural features.

Policy:

Encourage exotic forestry activities to locate in areas where adverse effects on landscape values and natural features will be avoided where practicable.

Regionally Significant Resource Management Issue 3:

Secure Access to Energy.

Objective:

Avoid locating energy infrastructure in areas where this would result in adverse effects on outstanding landscapes and natural features.

Policy:

Encourage energy infrastructure to locate in areas where the effects associated with this activity will not adversely affect or detract from outstanding landscapes and natural features.

Objective:

Ensure that the natural character of the coastal environment, including the coastal marine area, wetlands and lakes and rivers and their margins are protected from the potentially adverse effects of energy infrastructure.

Policy:

Encourage energy infrastructure to locate outside of the coastal environment however where this is not possible ensure that any adverse effects are adequately remedied or mitigated.

Objective:

Protect regionally significant landscapes and natural features from the potentially adverse effects of energy infrastructure.

Policy:

Encourage energy infrastructure to locate in areas where the effects associated with this activity will not adversely affect or detract from regionally significant landscapes and natural features, however where this is not possible ensure that any adverse effects are adequately remedied or mitigated.

Regionally Significant Resource Management Issue 4:

Regional form and development.

Objective:

Achieve the integrated management of natural and physical resources.

Policy:

Encourage integrated decision making regarding the expansion of land areas for residential, commercial and industrial development.

Objective:

To achieve the sustainable management of natural and physical resources by providing for planned and coordinated development.

Policy:

To encourage the sharing of information and resources between the Regional Council and the territorial authorities.

Objective:

Avoid ad hoc development of coastal and rural land.

Policy:

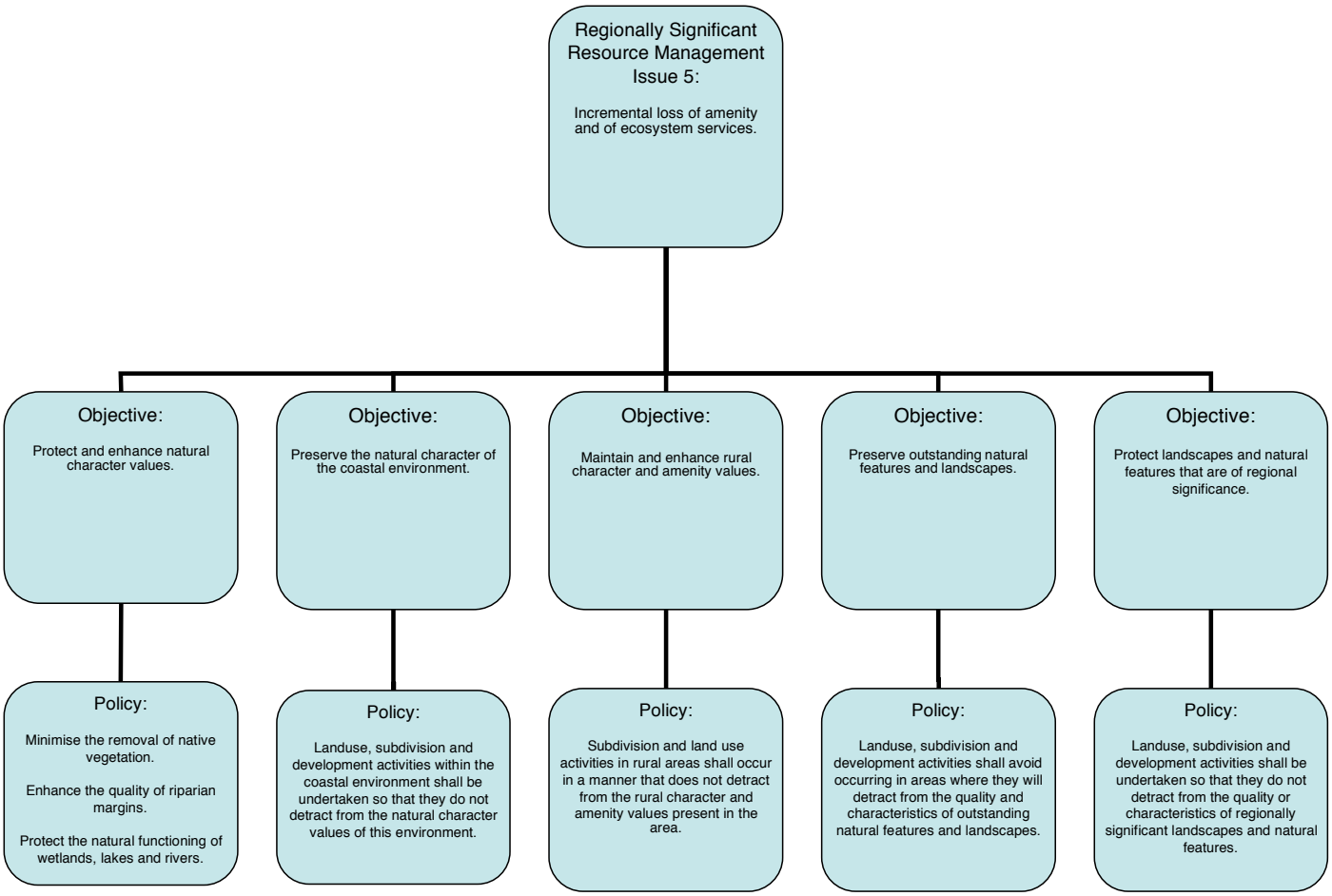
Ensure that reasonable provision is made by the territorial authorities for planned growth and development.

Objective:

Provide for the coordinated provision of infrastructure, including roads.

Policy:

Ensure that the development of infrastructure, including roads, occurs in a manner that avoids, remedies or mitigates any adverse effects on landscape or natural character values.


Regionally Significant Resource Management Issue 5:
Incremental loss of amenity and of ecosystem services.
Objective:
Protect and enhance natural character values.
Policy:
Minimise the removal of native vegetation.
Enhance the quality of riparian margins.
Protect the natural functioning of wetlands, lakes and rivers.
Objective:
Preserve the natural character of the coastal environment.
Policy:
Landuse, subdivision and development activities within the coastal environment shall be undertaken so that they do not detract from the natural character values of this environment.
Objective:
Maintain and enhance rural character and amenity values.
Policy:
Subdivision and land use activities in rural areas shall occur in a manner that does not detract from the rural character and amenity values present in the area.
Objective:
Preserve outstanding natural features and landscapes.
Policy:
Landuse, subdivision and development activities shall avoid occurring in areas where they will detract from the quality and characteristics of outstanding natural features and landscapes.
Objective:
Protect landscapes and natural features that are of regional significance.
Policy:
Landuse, subdivision and development activities shall be undertaken so that they do not detract from the quality or characteristics of regionally significant landscapes and natural features.

APPENDICES

APPENDIX A : THE RESOURCE MANAGEMENT ACT 1991 (RMA)

The RMA largely addresses the country's landscape in Part II – 'Purpose and Principles' Under Section 5 of Part II, the stated purpose of the Act is promoting *'..the sustainable management of natural and physical resources.'*

Sustainable management is defined in section 5 (2) which states:

> *In this Act, sustainable management means managing 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 wellbeing and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
>
> *(c) Avoiding, remedying or mitigating any adverse effects of activities on the environment.*

Section 6 relates to 'Matters of National Importance' and states:

> *In achieving the purpose of the Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*
>
> *(a) The preservation 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 in appropriate 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.*
>
> *(f) The protection of historic heritage from in appropriate subdivision, use and development.*
>
> *(g) The protection of recognised customary activities.*

Section 7 relates to 'Other Matters' and states:

In achieving the purpose of the Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to –

- *(a) Kaitiakitanga:*
- *(aa) The efficient use and development of natural and physical resources:*
- *(b) The efficient use and development of natural and physical resources:*
- *(ba) The efficiency of the end use of energy:*
- *(c) The maintenance and enhancement of amenity values:*
- *(d) Intrinsic values of ecosystems:*
- *(e) [Repealed]*
- *(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:*
- *(i) The effects of climate change:*
- *(j) The benefits to be derived from the use and development of renewable energy.*

Part 4 of the Act relates to *'Functions, powers, and duties of central and local government'* Section 30 relates *'Functions of regional councils under this Act'* and states:

- *(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:*
  - *(a) The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region:*
  - *(b) The preparation of objectives and policies in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance:*
  - *...*
  - *(gb) The strategic integration of infrastructure with land use through objectives, policies, and methods:*
  - *...*

WAIKATO REGION LANDSCAPE ASSESSMENT

LANDSCAPE TYPE:

AESTHETIC VALUES	HIGH	MOD	LOW	COMMENTS
Memorability – Is this landscape easily remembered and worth remembering?				
Vividness – Is this landscape immediately impressive, as a result of its visual distinctiveness, diversity, or other compositional and geophysical factors?				
Expressiveness – Does this landscape demonstrate the formative processes that have lead to it?				
Cohesion – Is there a continuity of key statements / patterns / themes and accents that give this landscape character and a sense of unity?				
Eminence – Is this landscape exalted, distinguished, and remarkable in degree?				
TOTAL:				

PHYSICAL ATTRIBUTES / NATURAL SCIENCE FACTORS	HIGH	MOD	LOW	COMMENTS
Are geological components clearly evident in the landscape (eg. volcanic, fault scarps etc)?				
Are topographical features obvious (eg. hills, spurs etc)?				
Are there distinctive ecological features in the landsape (eg. wetland)?				
Does the landscape show evidence of dynamic change (eg. erosion, sand bars etc)?				
TOTAL:				

DESCRIPTION:

ASSOCIATIONS	HIGH	MOD	LOW	COMMENTS
Historical associations / endemic values – Are there natural or man-made qualities in this landscape that give it a sense of place and identity?				
Value to tangata whenua				
Recreational values				
Values that are shared and recognised – e.g. art, poetry, literature, tourism				
TOTAL:				

NATURAL CHARACTER	HIGH	MOD	LOW
Degree of Naturalness – i.e. Absence of development, natural elements, patterns and processes.			

SUMMARY TOTALS	HIGH	MOD	LOW
Aesthetic, Physical Attributes / Natural Science Factors and Associations Totals			
	Outstanding Yes / No		
Natural Character Value Totals			
	Pristine Yes / No		

APPENDIX B VALUES ASSESSMENT WORKSHEET

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