Creating the ultimate living environment

WHANGAREI DISTRICT COUNCIL

Parihaka and Hatea River Reserves Management Plan

Including Parihaka Forest, Mackesy Bush, Ross Park, Drummond Park, Mair Park, Dobbie Park, Lovatt Sanctuary Area, Whareora Road Reserve, A H Reed Kauri Memorial Park and Whangarei Falls

WHANGAREI DISTRICT COUNCIL

Parihaka and Hatea River Reserves Management Plan

Reserves Act 1977

This is a true and corrected copy of the Parihaka and Hatea River Reserves Management Plan which was approved by resolution of the Council on 14 December 2006 pursuant to the Reserves Act 1977 and became operative on:

12 June 2009

The **COMMON SEAL OF THE**)
WHANGAREI DISTRICT COUNCIL)
Was hereto affixed this 12th day)
of June 2009)
in the presence of:

Dominic Kula
W. D. C.

COUNCIL SECRETARY

APPROVAL OF THE MINISTER

Approved this 10th day of June 2009)
by Hilary Ann Aikman, Conservation Support Manager)
Northland Conservancy, Department of Conservation,)
pursuant to section 41(1) of the Reserves Act 1977)
insofar as it applies to the areas of scenic reserve,)
and to a delegation from the Minister of Conservation)

In the presence of:

B. Ashbridge
D.O.C.

Parihaka and Hatea River Reserves Management Plan

Acknowledgements

Special thanks are extended to Jo Ritchie, Natural Logic Ltd. and Glenys Mullooly for providing much of the background information in this plan.

Acknowledgement is also given to the following people and organisations who contributed to this plan.

Ngatiwai Trust Board

Ngati Kahu o Torongare – Te Parawhau Hapu

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Peter Anderson and Wendy Holland, Department of Conservation

Joan Maingay, New Zealand Historic Places Trust

Lisa Forrester, Northland Regional Council

Kevin Mason, Watson and Mason

Phil Stocker, Northland Forest Managers Ltd.

The Council wishes to thank those people who made oral and written submissions through various stages of this management plan.

Contents

Section 1 Introduction

1.1 Purpose of this Management Plan

The purpose of this plan is to set out the intentions of Whangarei District Council (WDC) for the future management of the reserves covered by this plan. The plan is guided principally by the classifications under the various Acts of Parliament and Deeds of Gift which have established the reserves, and takes into account other planning requirements such as the Reserves Act, Resource Management Act (RMA), Local Government Act (LGA) and the aspirations of the community and the council.

Photo: Panorama from Parihaka Lookout (WDC)

The plan has been prepared in accordance with Section 41 of the Reserves Act 1977, although there are some parcels of land which are not subject to this Act. The council intends to rationalise the classification of the Parihaka reserves network, and has prepared this plan as if the entire network is subject to the Reserves Act. Section 41(3) of the Act sets out the purpose of a reserve management plan, which is to:

"Provide for and ensure the use, enjoyment, maintenance, protection, and preservation … and development, as appropriate, of the reserve for the purposes for which it is classified."

1.2 Plan Review

The management plan, once approved has a proposed ten year life. During the lifetime of this plan it will be monitored to ensure continued progress is made in the achievement of the Objectives, and Policies and Actions. A full review of the plan will be conducted at the completion of the ten years.

1.3 The Origin of 'Parihaka'

In the whakapapa ('genealogy') of Te Parawhau hapu, it was, Kukupa, the paramount chief of Te Parawhau ki Whangarei, who with his hapu performed a fearsome haka on the top of the steep cliff defending Parihaka from the enemy in the late 1700's.

The battle stories of Parihaka appear in published records – Nancy Pickmere's 'The Stories of Whangarei', Florence Keene's 'Tai Tokerau', A.H. Reed's 'Early Northland' and Glenys Nevin's 'Te Pa o Parihaka – Parahaki'. Maori Land Court records also hold information on Parihaka. At some point subsequent to the battles, the name was changed and some people were referring to it as Parahaki. This is believed by some to be a misspelling of Parihaka (e.g. Nevin, 1990).

The name 'Mount Parihaka' appears to have been used on marae for a long time. In 1937, a delegation from local iwi, including Te Parawhau, Ngati Kahu and Ngati Korora, approached the local council requesting a change in the spelling of the often-used 'Mount Parahaki' to 'Mount Parihaka'. This request was declined.

Te Ihi Tito, the great, great, great grandson of Kukupa and a kaumatua of Te Parawhau, and Tom Parore, of Te Runanga o Ngati Whatua, in 2003, suggested that WDC invite affected hapu and iwi who have strong ties of mana whenua (authority, influence and power over the land) and kaitiakitanga (guardianship) of Parihaka to discuss the future use and management of Parihaka. The resulting Hui took place at Whangarei Terenga Paraoa Marae on 20 October 2003. During the Hui, the name Parihaka was discussed. Iwi and hapu

present were Ngati Hine, Te Parawhau, Te Uriroroi, Ngati Wai, Ngati Whatua and Ngapuhi. Everyone present agreed unanimously that 'Parahaki' should be changed to 'Parihaka'.

Information was tabled by Te Ihi Tito before a meeting of WDC's Community Enterprises Committee in November 2003. The Committee resolved "That council confirms the spelling of Parahaki will be changed to Parihaka."

In March 2004, the WDC forwarded a submission proposal to the New Zealand Geographic Board (who is responsible for place names), to amend the spelling of Mount Parahaki to Mount Parihaka. The Board approved the spelling correction of Mount Parihaka as an intention to assign a place name, and published it in the New Zealand Gazette on 9 March 2005. A period of three months followed for public objections. During the public objections phase, a large and significant Hui, organised by the Geographic Board, was held on 14 June 2005 at Whangarei Terenga Paraoa Marae with representation of all interested iwi and hapu. The purposes of the Hui were for the Board to establish the level of support for Mount Parihaka, hear the views of different iwi and hapu, gather substantial historical information about the proposal and ascertain whether or not there were any other names for the geographic feature of Parihaka. A public meeting was also held, chaired by the former ACT MP, Muriel Newman. This meeting generated great public interest.

In June 2005, the Board agreed to recommend to the Minister for Land Information to correct the spelling of Mount Parahaki to Mount Parihaka, on the basis that this is the original Maori name. The Minister's decision on 12 July 2005 accepted the Board's recommendation. His decision to assign 'Mount Parihaka' as the correct name took effect on 4 September 2005. In respect to the proposal to correct the spelling of Hatea River to Hoteo River, the Board will be notifying its intention to assign a place name in the New Zealand Gazette later this year for public objections.

Te Ihi Tito said "With the name Mt Parihaka we can tell the story of the mountain, but we couldn't do it when it was Mt Parahaki." (The Whangarei Leader, 21 June 2005)

The WDC will change all Council-published information and on-site signage relating to Mount Parihaka to reflect the Minister's decision and the officially recognised original name in recognition of an important taonga (treasure) of the District.

1.4 Location and General Description

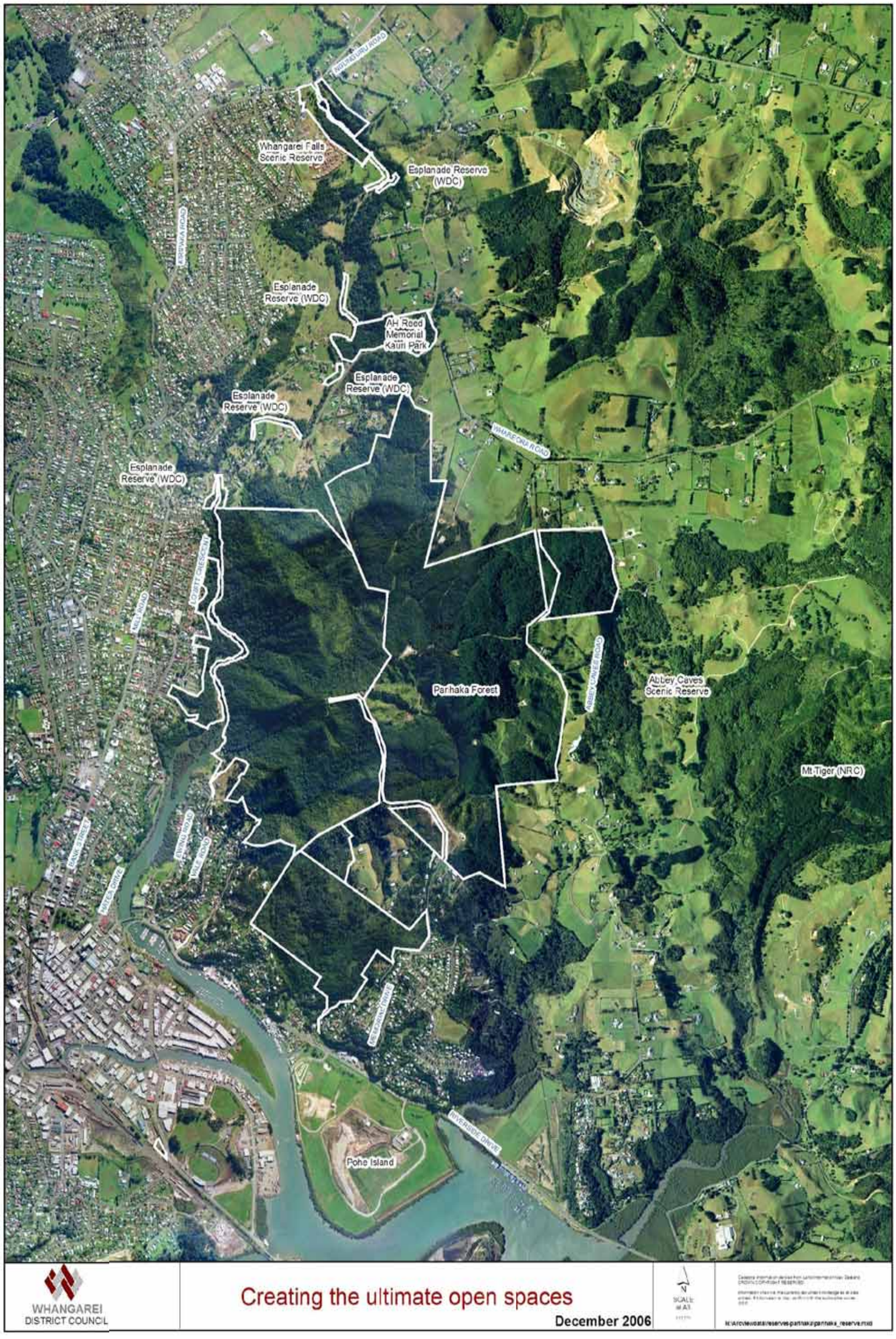
The Parihaka and Hatea River reserves encompass a series of linked reserves (Figure 1), which form a dramatic natural backdrop on the eastern side of the Whangarei city centre. More specifically, the majority of the reserves are located on the eastern side of the Hatea River, except for Mair Park, esplanade reserves along the Hatea River and part of Whangarei Falls Scenic Reserve. The area is roughly bordered by Riverside Drive, Hatea Drive, Whareora Road and Abbey Caves Road, with a narrow corridor extending up the Hatea River to Ngunguru Road.

Parihaka Forest is located on the eastern side of the Parihaka Memorial and is currently managed as a Radiata pine plantation. It is bounded to the east by Memorial Drive and to the north and west by private land, which backs onto Whareora Road and Abbey Caves Road. Pedestrian access is gained from the forest gates off Memorial Drive and off Abbey Caves Road. Vehicular access is restricted to reserve and forestry management activities only. Mountain bikers and horse-riders, as well as walkers, can access the forest from various entrances, including Memorial Drive, Whareora Road and Abbey Caves Road.

The reserves have been linked together in recognition of their significant natural and cultural heritage values, for both the Whangarei district and for Northland. Parihaka Forest has been included in this management plan to recognise its ultimate intended status as a native bush reserve to be managed contiguous with the other reserves to the west. Together, the existing reserves and Parihaka Forest total 389 hectares.

A number of the reserves were gifted to the city in recognition of their natural values and the desire for them to be accessible to the community. The steep, forested slopes of Parihaka are home to a range of native plants and animals as well as a network of streams with very high water quality, which feed into the Hatea River. Their relative proximity to the City centre has resulted in high levels of recreational use, particularly around the Parihaka Memorial area, which affords panoramic views of the wider Whangarei district.

Figure 1: Parihaka and Hatea River Reserves (including Parihaka Forest)



A recent walking link between A H Reed Memorial Kauri Park and Whangarei Falls has been established and will continue to be improved as reserve land is secured along the Hatea River. Improved access to and from the City centre/Town Basin and other reserves in close proximity, including Abbey Caves, is also planned.

Figure 1 shows the Abbey Caves Scenic Reserve and Eureka Place Recreation Reserve. These areas are marked for reference only – this management plan provides no guidance for their future management. A separate management plan is to be prepared for the Abbey Caves Scenic Reserve and Waipu Caves Scenic Reserve, noting their geological (karst) similarities.

1.5 Land Tenure and Status

Land tenure and status information for the Parihaka and Hatea River reserves appears below and in Appendix 1. The order of reserves below, following a description of Parihaka Forest, adopts a general south to north approach, finishing with the Whangarei Falls Scenic Reserve. Figure 1 shows their relative position and wider geographical setting. For historical information on the reserves (e.g. how land parcels were acquired and named, past uses of the land), refer to Section 4: Cultural Heritage and Environment.

There are in excess of 40 separate land parcels for the reserves noted, together totalling 389 hectares of which 183 hectares comprise Parihaka Forest.

1.5.1 Parihaka Forest

On the eastern side of the Parihaka Memorial is the Parihaka Forest. The following land parcels form Parihaka Forest.

- Sections 84, 89, 90, 91, SW87 and W93, Parish of Parahaki
- Section SE 88, Parish of Parahaki

Sections 84, etc. are Crown land, vested in the Council by Order in Council in trust, pursuant to Section 37 of the Reserves and other Lands Disposal and Public Bodies Empowering Act 1924 for Tree Planting Purposes. The Order in Council specified very particular conditions applying as to the manner under which the forestry usage of the property was to be undertaken. It is clear that the vesting of the land in WDC is subject to WDC complying with the purpose of that vesting and the associated conditions. If WDC no longer requires the land for the purpose of forestry management the ownership must revert to the Crown, as Crown Land held under the Land Act 1948. (See also Section 8.1: Reserve Status, for information on a proposal to classify Parihaka Forest as scenic reserve under the Reserves Act following harvesting of the current exotic tree crop.)

Section SE 88 is a Crown Reserve, vested in the former Whangarei City Corporation (now WDC) in trust as a reserve for Local Purpose (Tree Planting), pursuant to the Reserves and Domains Act 1953. It was classified in 1983 for the same purpose pursuant to the Reserves Act 1977 in the NZ Gazette 1983, p.1384.

The forest is currently managed as a Radiata pine plantation. In July 1997, the WDC passed a resolution that following the completion of the harvesting of each compartment the area will be progressively returned to native vegetation.

Overall Parihaka Forest is either not recognised or classified under the Reserves Act. While this management plan can only provide guiding principles for Parihaka Forest inclusion of this land recognises its role in the integrated management of Parihaka[1].

[1] Land which is not subject to the Reserves Act can be included in a Management Plan but the plan has no statutory weight for that land and Council cannot be bound by the terms of the act (Reserves Act Guide, 1999).

1.5.2 Mackesy Bush

Mackesy Bush (41 hectares) is accessed off the lower end of Memorial Drive and adjoins Ross Park. It provides access to the Parihaka tracks from the lower end of Memorial Drive. The reserve comprises seven parcels of land; four being scenic reserves, one being recreation reserve, one as local purpose (recreation) reserve, and the last held by WDC with no reservations (e.g. no legal reserve status). Mackesy Bush is named after the family of Colonel C.E.R. Mackesy.

1.5.3 Ross Park

Mr Douglas Ross purchased from the Robert Reyburn estate an area of some 87 acres running from Dundas Road to Parahaki Creek and up to the top of Mount Parihaka. This land was gifted in November 1943 to the former Whangarei Borough Council for use as a public reserve under sub-section 1(a) of Section 308 of the Municipal Corporations Act 1933. The gift was made as a memorial to Mr Douglas Ross' late father and mother, Hugh and Elizabeth Allen Ross, of Waihou, Te Aroha. Mr Douglas Ross requested the land be called the Ross Reserve. The Borough Council accepted the gift, and approved the naming of the area and erection of a cairn.

Ross Park is accessible from Dundas Road. It comprises one land parcel of 36 hectares.

1.5.4 Drummond Park

Drummond Park (16 hectares) is located between Ross Park and Dobbie Park and contains the Parihaka Memorial. It is accessible across the Hatea River footbridge from Mair Park and Vale Road.

With the exception of a small parcel of land (0.24 hectares) classified as a local purpose (esplanade) reserve, the rest of Drummond Park is held by WDC with no reservations (e.g. no legal reserve status). Most of the park is described as Part Parahaki Native Reserve, and is held for the purposes set forth in Clause 1 (a) of Section 308 of Municipal Corporations Act 1933. These purposes are defined as pleasure grounds, sports-grounds, rifle ranges, physical training schools, gardens, zoological gardens, music and dance halls, libraries, museums and art galleries. The area is also subject to the provisions of Sections 234 and 601 of the Local Government Act 1974, relating to land reserved for recreation.

Two land parcels within Drummond Park - Part Parahaki Native Reserve (4.42 hectares) and Part Parahaki No. 1 Block (1.83 hectares), were purchased from the Council's Reserves Development Fund in 1983 to facilitate access from Vale Road to the reserves along the Hatea River, and to Drummond and Ross Parks.

1.5.5 Mair Park

Mair Park (9 hectares) is located on the west bank of the Hatea River. The main access is from the end of Rurumoki Street. However, it can also be accessed via Deveron Reserve (end of Banff Street) and Pompallier Park (end of Wairere Avenue). Mair Park is the main access point for crossing the Hatea River onto the Parihaka and Hatea River walking tracks.

Robert Mair, a local native plant enthusiast whose family settled in Whangarei in the 1840's, presented Mair Park to the people of Whangarei in 1914 for the purposes of a public park or domain. Its current status is a mixture of local purpose (esplanade) reserve, recreation reserve, scenic reserve, historic reserve and no reservation.

1.5.6 Dobbie Park

Dobbie Park (55 hectares) is immediately to the north and northwest of the Parihaka Memorial, which runs down to the Hatea River.

The largest land parcel within Dobbie Park, at 49 hectares, is Part Parahaki Native Reserve, ML 1095A. Vested in the Council by Deed by Mr Herbert B Dobbie in 1910, it is to be held upon trust as a public park and recreation ground under the Municipal Corporations Act 1920 (superseded by the Local Government Act 1974 and hence, the Local Government Act 2002).

The Deed of Conveyance limits the use, and management of the reserve to those uses which do not conflict with the protection of native flora and fauna. It states that no buildings or structures are to be erected

other than seats, and footpaths must be a maximum width of six feet. Dogs are to be on leashes. Bicycles, cars and wheeled vehicles, with the exception of wheelchairs, children's go-carts and prams are not permitted. (Deed of Conveyance No. 261494, 10 March 1910. – Mr Herbert B. Dobbie)

It was the first reserve in the former Whangarei Borough for the purpose of scenic and environmental protection.

Also included in Dobbie Park are two small parcels of land, both recognised as Part Parahaki No.1 Block purchased from Mr J.H. Horn in 1914 and 1916. The 1914 purchase was undertaken to provide a connection between Mair Park and Dobbie Park, which lead to the construction of the original walking bridge over the Hatea River. Mr Horn encouraged the 1916 purchase, as the land was adjacent to a diving hole in the Hatea River used extensively by the public. At this time, the Hatea River was the only public freshwater swimming pool. The Council purchased the land as an extension to Dobbie Park and to protect the diving facility for the public. Both of these land parcels are held by WDC with no reservations.

1.5.7 Lovatt Sanctuary Area

This Area comprises two parcels of land, each 11 hectares, to the north of Dobbie Park towards the end of the Hatea River Walk. The trustees of the late Mr C.R. Lovatt and Mr C.S. Lovatt gifted this reserve to the people of Whangarei as a bird sanctuary. The land was transferred into public ownership in 1968, the terms of vesting being that it be managed as a reserve under the Reserves and Domains Act 1953.

1.5.8 Harold Menzies Scenic Reserve

Classified under the Reserves Act 1977 as a scenic reserve, it was subsequently named the Harold Menzies Scenic Reserve by N.Z. Gazette Notice (1982, p.2715). At 0.48 hectares, its management is subject to trust conditions.

1.5.9 Whareora Road Scenic Reserve

Accessed from Whareora Road, this reserve (7 hectares) was vested in the Whangarei City Council on deposit of subdivision plans in 1983. It is subject to the Reserves Act 1977 but has not yet been formally classified.

1.5.10 A H Reed Kauri Memorial Park

The reserve is on a sloping hillside bounded on one side by Whareora Road and the other by Hatea River, some four kilometres from the Whangarei city centre. It comprises some eight hectares of magnificent kauri forest. In 1958 it was designated as the A H Reed Memorial Kauri Park Scenic Reserve under the Reserves Act 1953. It features a canopy walkway, several tracks and a 23.8 metre waterfall that was originally higher and considered more scenic than the Whangarei Falls. The Hatea River Walk links A H Reed reserve with the Whangarei Falls Scenic Reserve to the north.

1.5.11 Whangarei Falls

Whangarei Falls Scenic Reserve has an area of 7 hectares. It comprises three land parcels; all classified under the Reserves Act 1977 as scenic reserve.

The primary feature of the reserve is the picturesque waterfall (26 metres high) over basalt cliffs. (See Section 3.1: Geology for further information on the volcanic rocks of the local area.) A sign erected at the corner of Boundary and Ngunguru Roads in 2004 recognises the importance of the falls as the tribal boundary of Ngati Hau – "Otuihau".

Section 2 Vision and Objectives

The Vision (Section 2.1) provides a statement of how the people of Whangarei would like to see Parihaka and Hatea River reserves in the future. From this statement specific Objectives (Section 2.2), and Policies and Actions (throughout the plan) are developed to enable on-ground projects to happen, resulting in the Vision and Objectives becoming a reality.

Responsibility for implementation of the Policies and Actions rests with WDC Division(s) or other agencies indicated in brackets following each statement, e.g. (Parks Division), (DOC).

Photo: Kauri Tree, A H Reed Kauri Memorial Park (WDC)

2.1 Vision

The natural, scenic and cultural heritage values of the Parihaka and Hatea River reserves are restored and protected and opportunities provided for compatible public recreational use and enjoyment of the reserves.

2.2 Objectives

General

Integrated Management

To provide an integrated approach to the management of the Parihaka and Hatea River reserves.

Partnerships

To establish partnerships between Whangarei District Council, tangata whenua and the local community to enhance the management of the Parihaka and Hatea River reserves.

Natural Heritage

Geology

To protect the enduring nature and values of the land, and recognise and provide for geological features.

Soils

To protect the soil resource and soil processes to assist naturally functioning ecosystems.

Water Resources

To protect and maintain the health (wai ora) of the natural water systems in the Parihaka and Hatea River reserves.

Landscape

To maintain, and where necessary enhance, the landscape, scenic, aesthetic and visual values of the Parihaka and Hatea River reserves.

Ecology

To protect the life sustaining elements (mauri) of the reserves' ecology, including indigenous flora and fauna, their natural communities and habitats, indigenous species diversity and nationally threatened or regionally significant indigenous species, representative of the local area within the Whangarei Ecological District.

To progressively restore the indigenous biodiversity of Parihaka Forest in partnership with the Whangarei community.

Threats to Indigenous Biodiversity

To manage threats to the indigenous biodiversity of the Parihaka and Hatea River reserves so as to protect and enhance the natural and cultural values of the reserves.

Cultural Heritage

To protect and maintain archaeological, historic and cultural values and sites, places and landscapes, and mitigate or avoid threats to them.

To interpret archaeological, historic and cultural sites, places and landscapes in consultation with affected parties.

Production Forestry

To progressively remove the pine plantations from within Parihaka Forest in a manner consistent with sustainable resource management principles, and provide for the forest to be restored to native vegetation.

Fire Management

To reduce the threat of fire, and protect people, built structures and facilities, and the productive forest resource of the Parihaka Forest from fire.

Recreation and Tourism

Visitor Use

To provide for public use and enjoyment of the reserves consistent with the protection of their natural and cultural heritage values.

To more fully understand visitor use, numbers, characteristics, behaviour, needs and expectations in order to provide for effective visitor management and improve the quality of visitor experience.

Information, Interpretation and Education

To enhance visitor understanding and appreciation of the natural and cultural values of the Parihaka and Hatea River reserves, and assist visitor enjoyment.

Facilities and Services

To provide for a range of appropriate visitor facilities and services consistent with the protection of the natural and cultural values of the reserves.

Commercial Recreation and Tourism

To ensure any commercial recreation and tourism operations in the Parihaka and Hatea River reserves are managed to ensure minimal impact on the environment, protection of the natural and cultural values of the reserves, compatibility with existing permitted non-commercial recreational activities and protection of the quality of visitor experience.

Protection of Future Interests

To manage the Parihaka and Hatea River reserves as an integral part of the Whangarei District Council's parks and reserves network.

Reserve Status

To ensure all land parcels comprising the Parihaka and Hatea River reserves have appropriate statutory reserve protection.

Whangarei District Plan

To ensure all land parcels comprising the Parihaka and Hatea River reserves have appropriate Environment and Resource status in the Whangarei District Plan.

Land Acquisition

To provide for land purchase, lease or covenanting to enhance protection of the physical, cultural and public recreational values of the Parihaka and Hatea River landscape.

Leases and Licenses

To ensure that commercial leases and licenses do not compromise natural and cultural heritage values, are compatible with permitted recreational activities and where relevant are in keeping with the original intent/deed of gift of land within the reserves.

Public Safety, Health and Risk Management

To take all reasonable steps to protect visitors and workers from natural or human induced hazards.

Surrounding Land Uses

To work with adjacent landowners to the mutual benefit of the Parihaka and Hatea River reserves and their surrounds.

To minimise adverse external impacts on the reserves.

Community Involvement

To maintain and improve opportunities for Maori and the wider community to participate in the restoration and management of the Parihaka and Hatea River reserves.

Section 3 Physical Environment

With the exception of Parihaka Forest, the remainder of the Parihaka and Hatea River reserves form an almost continuous tract of regenerating forest. The forest rises steeply from sea level to 241 metres at the Parihaka trig at the top of Memorial Drive. The area is characterised by a series of valleys dissected by steep, sharp ridges and narrow streams, which flow into the Hatea River. Parihaka Forest is also comprised of steep ridges and deep valleys but has different hydrological features.

Photo: Native Vegetation, Parihaka (WDC)

3.1 Geology

The following description on geology, with the exception of Section 3.1.3, is adapted from the report, "White, P.J.; Perrin, N.D. 2003: Geology of the Whangarei Urban Area", produced by the Institute of Geological & Nuclear Sciences Limited. Information on the Whangarei Falls noted in Section 3.1.3 comes from the existing sign on site. The various rock types and associated soils are shown on Figure 2: Geology of Parihaka and Surrounds. (NB: The associated legend appears on the following page also as Figure 2.)

The physical geographic features of the Parihaka and Hatea River reserves are closely related to their geology and in particular faulting and volcanism. Mount Parihaka, the dominant feature of the Parihaka Forest is a remnant volcanic dome which erupted through an uplifted, ancient deep marine fault basin that formed west of the Harbour Fault. Younger lava flowed down pre-existing valleys, damming some streams to form lakes which later became in filled by sediment.

3.1.1 Stratigraphy

The oldest group of rocks in the Parihaka and Hatea River reserves are those of the Northland Allochthon which consist of a series of fault-sliced packets of rock. Rocks of this group are typically highly deformed and chaotic, but where this is less pronounced they have been subdivided into sub-groups. Two of these rock sub-groups are present within the reserves; the Whangai Formation (mw) and undifferentiated allochthon (o+m) (see Figure 2).

The Whangai Formation (mw) coincides approximately with the eastern and western portions of Mackesy Bush reserve, Riverside urban area and DOC's Whareora Scenic Reserve. Rocks of this formation are predominantly hard, dark grey, siliceous mudstone. Microscopic fossil assemblages indicate a Late Cretaceous age (approximately 65 million years ago) deposited in a marine environment.

Rocks of the undifferentiated allochthon (o+m) consist of mixed rock assemblages occurring approximately north of Eureka Place Recreation Reserve (bushed area) adjacent to the Harbour Fault. Material of the Northland Allochthon is considered to have been emplaced by large-scale gravity sliding following a brief but intense uplift event prior to the eruption of the Parihaka volcanic dome (approximately 22 million years ago).

The Parihaka reserves are dominated by the remnant dome of Mount Parihaka. Volcanic rocks associated with Mount Parihaka are termed Parahaki Rhyolite (cp) which forms part of the Coromandel Group (see Figure 2 in the Maps section). Parahaki Rhyolite coincides approximately with Parihaka Forest, Ross Park, Drummond Park, Dobbie Park and Lovatt Bird Sanctuary. Parahaki Rhyolite is medium-grained, with 73% silica and visible crystals of plagioclase, quartz and biotite. Time has broken down the Parahaki Rhyolite and over large areas it is represented only by white clay-rich soils with scattered quartz crystals. Age

determination of rock samples indicate Mount Parihaka erupted in the Early Miocene (approximately 20 million years ago).

The Whangarei area was uplifted again and has been above sea level since. Younger sedimentary rocks of the Purua Formation (fp) and basaltic lava of the Puhipuhi-Whangarei Field (kl) are located in the northern and southern regions of the Parihaka and Hatea River reserves (see Figure 2).

The Purua Formation (fp) is dominated by rhyolitic material, with lesser amounts of greywacke, mudstone and plant fragments. Coarse bouldery rhyolite-rich gravel with large plant fragments and wood is exposed at the base of Paranui Falls. The Purua Formation is overlain by lava flows suggesting an age of deposition younger that Late Miocene (approximately 5 million years ago).

Basaltic lava of the Puhipuhi-Whangarei Field (kl) is well preserved at the Whangarei Falls, showing well developed columnar jointing in the lower part. The volcanic rocks are mostly vesicular, typically containing visible crystals of plagioclase and olivine (see Section 3.1.3 below for more detail). The geomorphology of the various lava flows indicate that eruptions have occurred over a considerable time. In the Parihaka and Hatea River reserves age determinations of basaltic material range from Late Miocene (5 million years) to Late Pleistocene (260, 000 years ago).

Recent sedimentary deposits of note for this management plan are related to the damming of streams by lava flows, creating lakes and swamps that slowly filled with sediment. The Hatea River was dammed by a lava flow near Mairtown forming alluvial terraces which extend upstream almost to Whangarei Falls. The Tikipunga lava flow dammed the Paranui River near Paranui Falls, forming alluvial plains to the east. Such alluvial and swamp deposits have probably accumulated since the Early Pleistocene (1 million years).

3.1.2 Geological Structure

Two major fault sets are present in the Whangarei urban area, one strikes between NNW and north and the other roughly east-west. In the locality of Parihaka is the Harbour Fault striking NNW and the Whareora Fault striking roughly east-west (see Figure 2). The Harbour Fault appears to offset the Whareora Fault. They appear to have been active for a short period in late Oligocene-to-early Miocene (23-17 million years approximately), prior to the eruption of Parihaka.

3.1.3 Whangarei Falls

The Whangarei Falls themselves, at 26.3 metres in height, were formed by the Hatea River crossing the basalt lava flow associated with the Puhipuhi-Whangarei Field. The flow flooded a valley formed by faults and built the Tikipunga plateau. The basalt flow, around 40 metres thick at the falls, then cooled slowly and its middle third split into the typical “columnist basalt”. These upright, six-sided columns form when the cooling basalt cracks. Examples of this can be seen at the base of the falls. The river continually corrodes the edge of the falls and slowly cuts a gorge as the fall moves upstream. The falls have moved about 400 metres since the river started crossing the flow and are about halfway across the flow.

Whangarei Falls was excluded from a list of the outstanding natural features and geological sites in Whangarei District, supplied to WDC by the New Zealand Geological Society for inclusion in the Whangarei District Plan.

Objective – Geology

To protect the enduring nature and values of the land, and recognise and provide for geological features.

Policies and Actions

1 Impacts on geology and geological processes, including stream bank stability and the retention of ground cover under vegetation to reduce erosion, will be monitored and actions taken where necessary to minimise any detrimental impacts. (Parks Division)

Figure 2: Geology of Parihaka and Surrounds

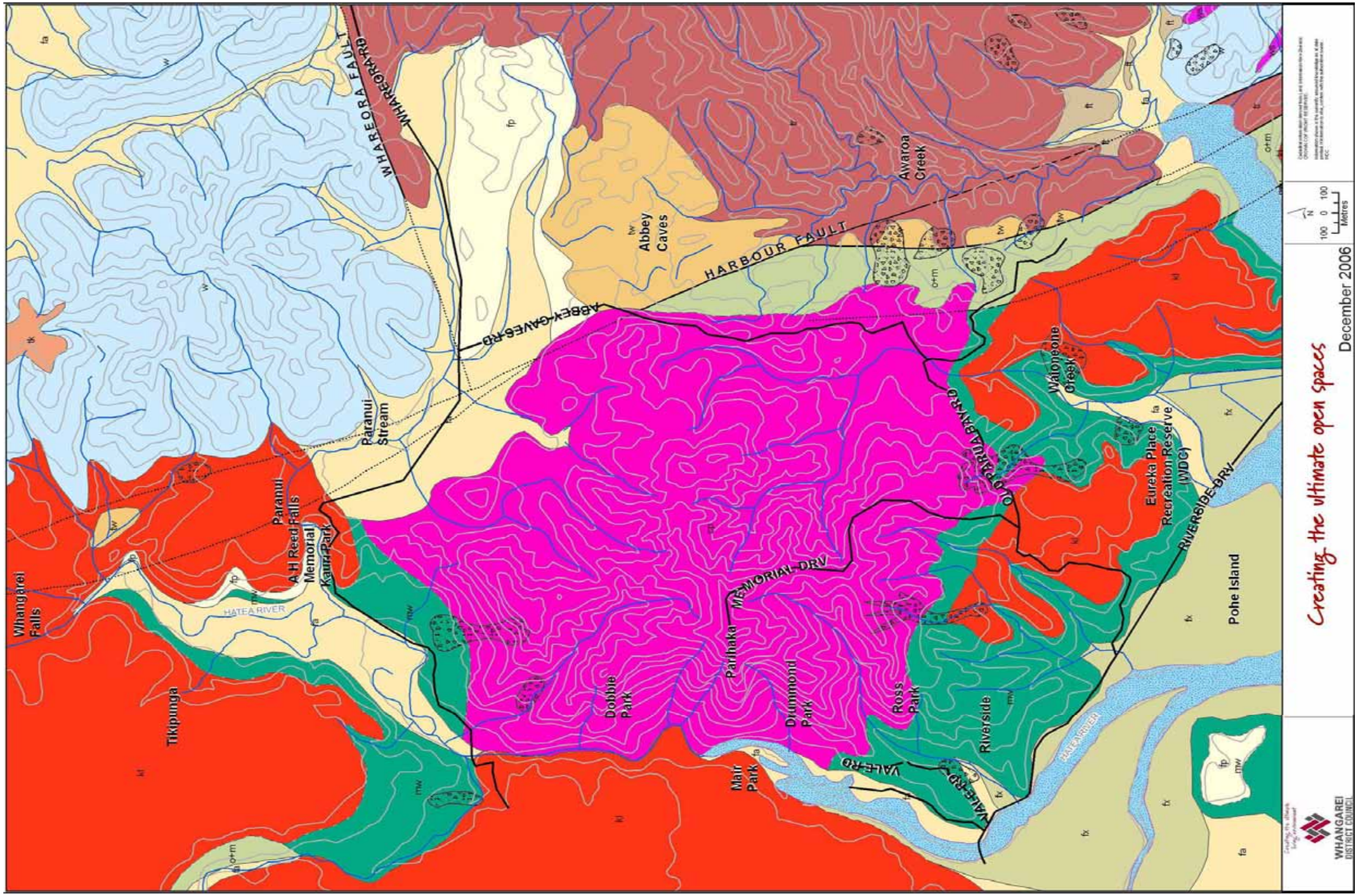
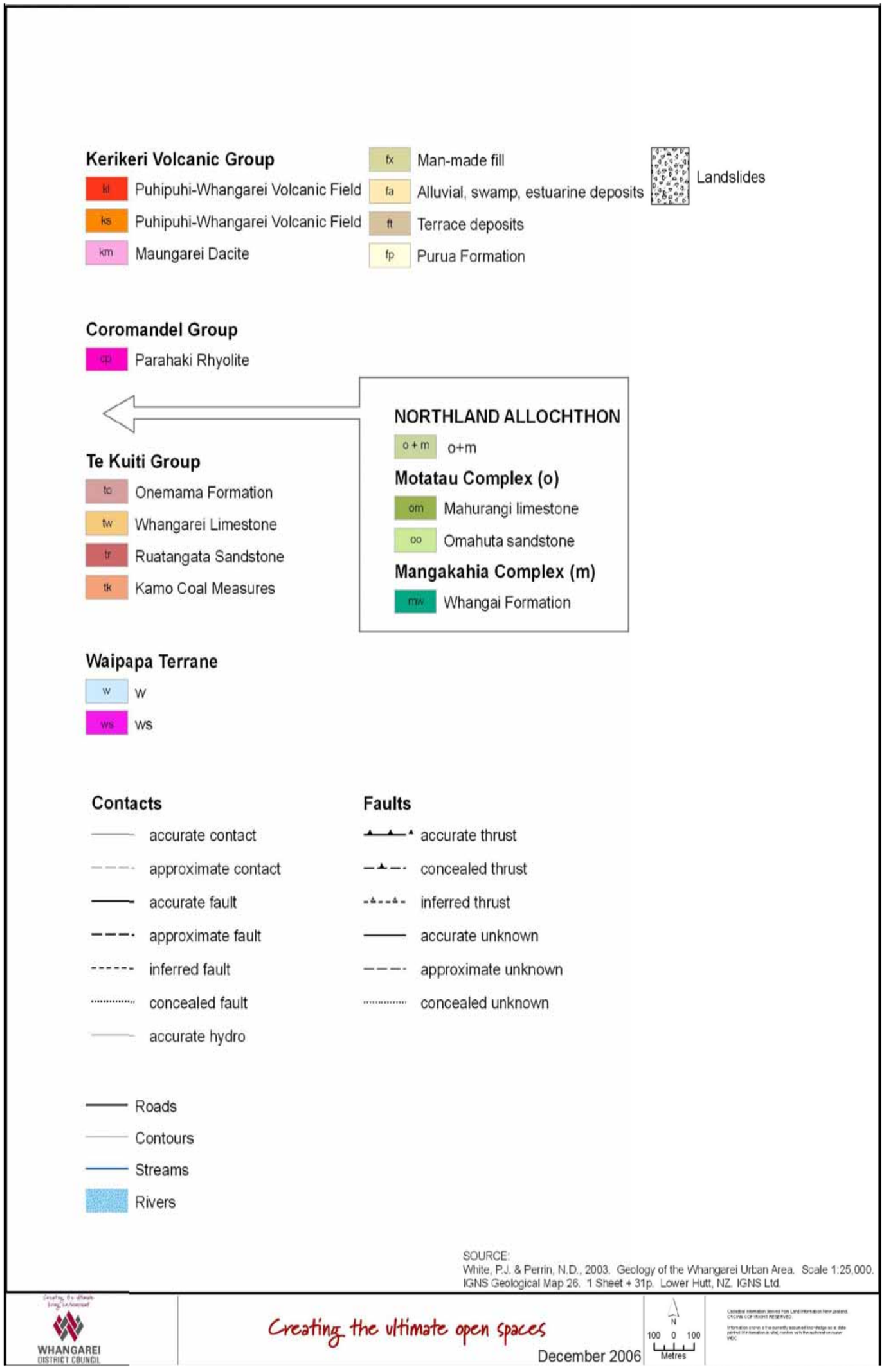


Figure 2: Geology of Parihaka and Surrounds - Legend



3.2 Soils

The area is characterised by poorly drained and highly podzolised Pukenamu silt and Parihaka sandy and silt loam soils. These soils are of low natural fertility and classified as of low suitability for plantation forestry. Clay soils have high erodability. The road edges at the upper end of Memorial Drive are prone to slips and subsidence.

The current crops in Parihaka Forest show signs of nitrogen and phosphate deficiency and have required fertilizing in past years.

Objective – Soils

To protect the soil resource and soil processes to assist naturally functioning ecosystems.

Policies and Actions

1 Soil processes will be protected through erosion control, gully restoration and stream bank stabilisation. (Parks Division)

2 Stormwater will be captured and redirected away from steep slopes, tracks and roads where erosion may result. (Parks Division, Roading Division, Waste and Drainage Division)

3 Land use practices and activities will be adopted which ensure that where practicable a natural bush vegetative cover is retained to minimise the adverse effects of soil erosion and discharge of contaminants. (Parks Division)

4 Where disturbance or erosion of soils is impacting on conservation, amenity or cultural values areas will be rehabilitated. (Parks Division)

5 Tracks, roads and forestry logging skid/hauler sites in the Parihaka and Hatea River reserves (including Parihaka Forest) will be located, used and maintained so as to minimise erosion, minimise deposition of sediment into waterways, and reduce the need for rehabilitation. (Parks Division)

6 Measures to minimise erosion on roadside banks at the upper end of Memorial Drive prone to subsidence after heavy rain will be implemented. These may include silt traps, stormwater infiltration and planting. (Roading Division, Parks Division, in consultation with NRC Land Operations)

7 The WDC, in consultation with the NRC, will map the soil types of the Parihaka and Hatea River reserves as resources permit. (WDC, NRC)

3.3 Water Resources

The Parihaka and Hatea River reserves provide a key role with respect to natural drainage patterns. The vegetation cover effectively controls the quantity and velocity of water discharged while reducing the contaminants and sediments discharged from land-based activity. The reserves on the western side of Parihaka form a relatively small part of the Hatea River catchment. Wetlands and seepages are restricted to the base of valleys on the eastern side of Parihaka Forest. Their existence is due to the underlying soil type of podzolised gumland soils. They offer opportunities for expansion through supplementary edge planting once the pines have been logged.

In 1996/97, the Ngatiwai Trust Board's Resource Management Unit (RMU) gathered baseline ecological data on selected rivers and streams that flow into the Whangarei Harbour. This project was funded through a grant from the Lottery Grants Board. The results were presented to NRC in their report, "Macro invertebrate Community Index: Whangarei Harbour Catchment Study 1996-97, (1997)". A subsequent report produced in 1999 presented further information on the macro invertebrate population from the sites surveyed in 1996-97. Information below is extracted from Ngatiwai Trust Board's 1997 report.

Several sample sites chosen for the baseline ecological data project are relevant to this management plan:

- A small stream alongside the Ross Track, five minutes walk in from the end of Dundas Road
- Whareora Bridge (two sites, one on Hatea River and the other on a small stream)
- Humpbank Bridge, Hatea River (western end of A H Reed reserve)
- Alexander Track (Paranui Stream in A H Reed reserve)
- Whangarei Falls (200 metres downstream from bridge at base of falls).

Results showed that the Ross Track stream site had very high water quality and a high number of macro invertebrates (e.g. molluscs, crustacean). The Whareora Bridge (Hatea River) site had high water quality and taxa. In a native bush environment free of environmental disturbance, the Whareora Bridge (small stream) site, with its moderate flows and stony riffle substrate, creates an ideal habitat for macro invertebrates (Ngatiwai Trust Board Resource Management Unit, 1997, 26). The exposed nature of the Humpback Bridge site, giving rise to high algal growth and high water temperatures, would have suggested limited habitat quality, but the survey results indicated higher values were present. The most diverse taxa were found at the bushed stream site just off the Alexander Track. However, the same site showed a relatively low Macro invertebrate Community Index (MCI), possibly due to moderate organic enrichment from agricultural land upstream encouraging the growth of low scoring pollution tolerant invertebrates (Ngatiwai Trust Board Resource Management Unit, 1997, 28). Results at the Whangarei Falls (below bridge) showed a diverse number of taxa but a low MCI value.

For the past five years, during summer periods, the NRC has been monitoring water quality at Whangarei Falls. At times, usually during and after periods of high rainfall but sometimes during low and slow flowing water conditions, water samples do not comply with the Ministry for the Environment and Ministry of Health guidelines for recreational waters. One of the suspected causes is runoff from adjacent land upstream, resulting in increased faecal coli form counts. It takes approximately two weeks after rain for the coli form levels to return to acceptable limits. Animal waste has also been suspected, though is difficult to prove. There has been to date no evidence of infectious diseases. WDC has adopted a precautionary approach to this situation by erecting signs warning people that swimming or playing in the stream above and below Whangarei Falls is not recommended until water quality improves and the signs are removed.

The Water Services Division of WDC owns and manages a pump station adjacent to the A.H. Reed reserve car park. Water is extracted from the adjacent Hatea River to supplement the Whau Valley dam supply to Whangarei City.

Objective – Water Resources

To protect and maintain the health (wai ora) of the natural water systems in the Parihaka and Hatea River reserves.

Policies and Actions

1 The health of freshwater streams in the reserves and forest will be monitored to ensure the protection of the natural water quality and biota of the streams. (Environmental Health Division)

2 The WDC and the NRC will continue to share information collected on the monitoring and protection of water quality of the streams. (WDC, NRC)

3 Stormwater quality in the catchments of the Parihaka and Hatea River reserves will be maintained at a high level where practicable. (Waste and Drainage Division, Environmental Health Division)

4 The NRC is encouraged to continue to monitor the water quality at Whangarei Falls in compliance with national guidelines for recreational waters. The WDC will encourage water quality monitoring information gathered by the NRC to be shared with the WDC. Signs will be erected to inform the public in the event of unsuitable swimming conditions. (Environmental Health Division and Parks Division, WDC, and NRC)

3.4 Landscape

The Parihaka and Hatea River reserves are a significant landscape feature providing a natural backdrop to Whangarei City. The network of tracks and walkways radiating out from the city into and through the reserves provide a variety of accessible opportunities for people to experience and enjoy a regenerating forest ecosystem. These natural values are further enhanced by the presence of significant cultural heritage sites such as the Parihaka pa complex and the viewing platform at the top of Memorial Drive, which affords panoramic views over the city and its environs.

3.4.1 Whangarei District Landscape Assessment

In 1994 LA4 Landscape Architects carried out a landscape assessment for the Whangarei District. The various landscape types within the district were mapped and ranked in terms of sensitivity and quality. Parihaka Forest (and reserves), in similar fashion to Pukenui Forest, was included within the T14 landscape unit, which the assessment states, "…provide a very strong natural backdrop to the urban centre." (Steven Brown, 1994).

In late 2005 a WDC-commissioned landscape study commenced to update the 1994 work. A District Plan Change is being prepared during 2006-2007 to incorporate new landscape rules into the District Plan.

Objective – Landscape

To maintain, and where necessary enhance, the landscape, scenic, aesthetic and visual values of the Parihaka and Hatea River reserves.

Policies and Actions

1 The WDC will protect Parihaka and Hatea River reserves as a natural backdrop and prominent landmark of Whangarei city and surrounds. (Parks Division)

2 The WDC will seek and encourage appropriate subdivision, use and development which protect and maintain the landscape values of the Parihaka and Hatea River reserves and its margins, including elevated areas, ridgelines and cultural heritage sites. (Parks Division, Policy and Monitoring Division, Resource Consents Division.)

3 Visual intrusiveness of existing and proposed buildings, structures and facilities by the WDC within the Parihaka and Hatea River reserves will be minimised through sensitive positioning, landscaping and design. (Parks Division)

3.5 Ecology

The reserves are contained within the Whangarei Ecological District, part of the Eastern Northland Ecological Region. The Parihaka Forest is indicative of much of the Ecological District, which has been modified to the extent that very few large areas of natural vegetation remain. Pukenui Forest, to the west, dominates the area being the only large forest tract remaining in the Whangarei Ecological District.

The restoration of Parihaka Forest, when combined with the Parihaka reserves, will in time form a continuous tract of forest some 364 hectares in size. This would be a significant achievement as presently in the Ecological District there are only four forest areas of a larger size – Pukenui Forest, Otaika Valley Bush, Maungatapere and Mount Parakiore. The creation of additional wildlife corridors is especially important for species such as the endangered North Island brown kiwi, whose habitat has been significantly reduced.

3.5.1 Native Flora

The native vegetation of the western Parihaka reserves (i.e. between Hatea River and Memorial Drive) and the Parihaka Forest were surveyed in January 1979 (un-named) and 2000 (DOC and WDC staff). Results of these surveys are shown in Appendix 3 (Parihaka reserves) and Appendix 4 (Parihaka Forest) of this management plan. NB: It is not a complete list of species present.

Western Parihaka Reserves

The forested area which clothes the western slopes of Parihaka is a mere remnant of an extensive kauri forest which spread eastward toward Whareora and south to Whangarei Harbour/Terenga Paraoa.

The reserves on the western side of Parihaka are comprised of podocarp-mixed broadleaf associations with some large remnant kauri *(Agathis australis)*. Rimu *(Dacrydium cupressinum)*, miro *(Prumnopitys ferruginea)*, tanekaha *(Phyllocladus trichomanoides)* and totara *(Podocarpus totara)* form the large majority of the canopy trees along with taraire *(Beilschmiedia tarairi)*, tawa *(Beilschmiedia tawa)* and kohekohe *(Dysoxylum spectabile)*. Much of the original forest has been removed either as a result of fire or during the early days of gum digging. A detailed list of native species found in the area of the Drummond, Ross and Dobbie Tracks can be found in Appendix 3.

A H Reed Memorial Kauri Park

A second remnant of the much larger kauri forest (Parihaka-Whareora-Mount Manaia), the A H Reed Memorial Kauri Park, contains this ancient forest's largest surviving kauri. This tree is approximately seven metres in girth and about 15 metres to the lowest limb. Close to the largest tree is a second kauri with a girth of approximately six metres. These trees may well be a thousand years old, having reached perhaps half their span of life. It is understood that almost all of the areas mapped as Parihaka sandy and silt loam were not in kauri forest during human occupation of Northland.

As well as scattered examples of large kauri, most of the various podocarps are represented together with broad-leafed trees and shrubs, e.g. totara, nikau *(Rhopalostylis sapida)*, rimu.

The fence line in the north-east corner of the reserve is inaccurate. At present, it allows for grazing inside the reserve boundary up to the bush line. The fence should be shifted northwards to the legally surveyed boundary, and the area affected re-vegetated in local native species. Consultation with the adjacent private landowner is essential.

Parihaka Forest

The native enclaves of the Parihaka Forest were surveyed in November 2000 by WDC and DOC staff. Natural values are limited to small pockets of wetlands in the base of the forest which were too wet to plant in pine and areas which have been logged and are now rapidly re-establishing in native species. These areas are dominated by cutty grass (*Gahnia setifolia*) and towai (*Weimannia silvicola*).

Radiata pine *(Pinus radiata)* forest is the predominant cover within Parihaka Forest at present. There is a considerable understorey of native species dominated by towai, pate *(Schleffera digitata)*, nikau and ponga *Cyathea dealbata)* – the species mix possibly determined by the acidity of the soil as a result of progressive generations of kauri. The kauri would eventually have killed themselves off. The mature podsol soils would then have been inhabited by gumland vegetation, including manuka, sphagnum moss and umbrella fern. This gumland vegetation complex is a unique and distinct environment.

Although there is some damage to the understorey when the pine forest is removed, it recovers rapidly as evidenced by the photos below taken in 2002, only 3-4 years after logging.

Compartment 18: Pine Forest removed in 1998/99. Native regeneration dominated by gahnia, mahoe, towai, ponga.

Compartment 10: Pine forest removed in 1998-99. Gahnia rapidly re-establishes.

Cutty grass dominates in the steeper areas on the western side of the forest and plays three key roles – its dense nature creates an effective barrier against plant pests, it acts as a slope stabiliser and as a nurse crop for other native species, and it provides a good seed source for native birds to spread further afield.

In other areas, gorse *(Ulex europaeus)* has been the first coloniser following logging. Gorse is widely regarded as a weed pest and targeted for removal, but it often acts as a nurse crop for native trees and shrub seedlings (the initial colonisers), which will eventually smother the gorse. This is certainly the case at Parihaka Forest where a number of native species are beginning to overtop the gorse. These include pate, hangehange (*Geniostoma rupestre*), mahoe (*Melicytus ramiflorus*), mapou (*Myrsine australis*) and towai.

As well as the communities that exist under pine forest and in logged over areas, there is also a range of other natural communities present within Parihaka Forest. The area is composed of a series of valleys within which there are small streams, seepages and wetlands. Manuka *(Leptospermum scoparium)*, sedges *(Carex spp.)*, pate and pigeonwood (*Hedycerya arborea*) dominate those that are not planted in pine. Ferns and club moss *(Lycopodiella cernua)* dominate these banks with neinei *(Dracophyllum latifolium)*, sundew orchid (*Drosera peltata*), mingimingi (*Leucopogon fasiculatus*) and koromiko (*Hebe stricta*) also common.

See also Section 5.2.1 Native Forest Restoration, Appendix 7: Parihaka Forest Restoration Plan and Appendix 8: Re-vegetation Planning Guide.

Native Orchids

The dry, open clay roadside banks along the upper end of Memorial Drive and the gumlands of parts of the neighbouring Parihaka reserves provide significant specialised habitat for a number of native orchid species (see Table 1). At least 15 species were recorded in a 1999 botanical survey (Manning, 2001). The accessibility and open nature of the Memorial Drive roadside banks provide a rare opportunity to view native orchids, especially during the flowering season.

These habitats are worthy of special management to ensure the longevity of the orchids. Particular care needs to be taken with road works, berm mowing and weed spraying activities. Further investigation into the management of the orchid habitats may be necessary to determine whether or not the promotion of orchid growth on exposed land could be enhanced by regular controlled burning or other controlled land disturbance programmes.

Significant Species

The Department of Conservation's Protected Natural Area Programme (Manning, 2001) identified a range of significant and notable species from the native forest enclaves of Parihaka. These are listed in the following table.

Table 1 Significant Native Flora Species

Common name	Botanical Name	Notes (Source: Brownsey & Smith-Dodsworth, 2000, and St. George, 1999)
King Fern	*Marattia salicina*	Nationally threatened species. Declining occurrence in lowland forest from Kaitaia to Bay of Plenty and Taranaki.
	Loxsoma cunninghamii	Regionally significant fern species only found in lowland areas from Kaitaia to East Cape.
Crimson rata	*Metrosideros carminea*	Regionally significant species. Known to occur in Parihaka in 1898.
	Caladenia bartletti	Orchid only found in the vicinity of kauri forest. Flowers from Sept-Nov.
	Caladenia chlorostyla	Small orchid of beech forests and scrublands. Flowers from Aug-Dec.
Onion orchid	*Microtis parviflora*	Green flowered orchid found in open places. Flowers from Oct-Feb.
	Orthoceras novae-zelandiae	Orchid which grows on clay banks and open places. Flowers from Dec-Feb.
Green hooded orchid	*Pterostylis alobula*	Orchid which grows in scrub and light forest. Flowers from May-Sept.
	Pterostylis banksii	Orchid which grows on sheltered banks. Flowers from Oct-Dec.
	Pterostylis agathicola	Orchid only found amongst kauri leaf litter. Flowers from July-Oct.
	Pterostylis trullifloia	Orchid form in Northland is distinctive. Flowers from May-Oct.
	Thelymitra carnea	Orchid which flowers from Sept-Nov.
	Thelymitra x. dentata	Orchid. A natural hybrid of *Thelymitra pauciflora* & *Thelymitra pulchella*. Flowers from Nov-Jan.
Common sun orchid	*Thelymitra longifolia*	Orchid which grows on clay banks, grassland and under scrub. Flowers from Nov-Jan.
	Thelymitra aff. longifolia	Orchid which flowers from Nov-Jan.
	Thelymitra pauciflora	Orchid which flowers from Nov-Jan.
	Thelymitra pulchella	Orchid which usually grows in clumps. Flowers from Nov-Jan.

See also Section 5.2.1: Native Forest Restoration, and Appendices 7 and 8 giving detailed information on the native forest restoration process for Parihaka Forest.

3.5.2 Native Fauna

Information in the following first two paragraphs concerning the reserves is derived from Patrick Miller and Peter Anderson, DOC, Whangarei. The majority of the remainder has come from Jo Ritchie, Natural Logic Ltd., Auckland. Information on native bees in Parihaka is sourced from Ngaire Hart, resident of Whangarei.

Birds

Birds commonly observed include kukupa (threatened status and in gradual decline), Australasian harrier hawk, shining cuckoo/pipiwharauroa, morepork/ruru and tui. Other smaller bush birds, such as the North Island fantail/piwakawaka, silvereye and grey warbler/riroriro can also be seen in the reserves. The North Island tomtit/miromiro (regionally significant) and the forest ringlet butterfly (nationally threatened and in gradual decline) are also present. Kingfishers are resident along the Hatea River, together with grey duck/parera (in serious decline), little shag/kawaupaka, black shag (sparse) and pied shag (sparse). Introduced birds recorded include house sparrow, dunnock, chaffinch, green finch, goldfinch, myna, starling, hybrid mallard/grey duck and black swan.

To enable populations of kukupa to sustain themselves year round in a particular area a continuous food supply is required. Fruits, foliage and buds are often only obtained where there are large tracts of forest with a diverse range of seasonally available food species. Kukupa are also a vital natural seed disperser; one of the most important seed dispersing species in New Zealand because of their widespread distribution, mobility and the wide range of fruits they eat (at least 70 species). No other common bird is capable of swallowing fruits greater than 12 mm diameter and dispersing their seeds intact (Mander et al, 1998), and because of the decline of other large fruit-eating birds, kukupa are virtually the sole distributors of large seeds (e.g. karaka, taraire, puriri, tawa) (Adapted from Clout & Hay, 1989).

It is likely that due to the limited extent of native enclaves and the limited range of native plant species, that few native bird species would be resident in Parihaka Forest. The presence of damp gullies dominated by native species and older stands of Radiata pine with more developed soil conditions and native understorey combined with the close proximity of the native forest of the Parihaka and Hatea River reserves, potentially provide good habitat for kiwi in the future.

A remnant population of the nationally threatened and in serious decline, North Island brown kiwi, was recorded in the 1993 Northland kiwi survey conducted by DOC, and are known to be able to survive in pine forest. Advice from DOC in September 2006 suggests there could still well be a remnant kiwi population present. A formal survey needs to be undertaken to verify this assertion.

Lizards, Fish

The Auckland green gecko (in gradual decline) is present in the native bush areas and banded kokopu (regionally significant), inanga, long-finned eel (gradual decline) and koura are present in the streams. Otherwise, available information on lizard and fish populations is poor.

Bees

A thriving community of native bees has been observed on Mount Parihaka, as part of a survey conducted for a research project during November 2005. Large numbers of bees were found nesting in the white clay banks, in areas of regenerative forest, at the Memorial Drive entrance into Parihaka Forest. At least six species of bees: *Leioproctus boltoni, L. huakiwi, L. imitatus, L. paahaumaa, L. pango* and *Lasioglossum sordidum*, have been identified by Dr B.J. Donovan, Donovan Scientific Insect Research, Christchurch, and further analysis is pending.

Female bees numbering in their thousands were observed foraging on a single kanuka tree. Many others were seen feeding on manuka, some on two introduced daisies, and a few bees were collected carrying large loads of flax pollen. Male bees were observed swarming over gorse, pine and manuka trees. Several other organisms known to co-exist with native bees were also seen. These include the parasitic wasp, *Pseudofoenus* sp., (which lays eggs in the bees' nests) and the tiger beetle *(Cicindela)* whose larvae (the 'penny doctor') can be found in small holes alongside entrances to the bees nests. Kingfisher nests also appear in the clay banks, and there is a possibility that they may eat the bees.

Because native bees need areas of bare soil to nest in they have benefited greatly from human activities in the area. In particular, road construction, which has created exposed banks free from vegetation. Future management and protection plans for this community are important and would include the preservation of these nest sites; and since native bees forage on native plants (e.g. manuka and kanuka) they provide essential pollination services that will contribute to the regeneration of native bush in the area.

Re-introduction of native species may be possible in the future. However, natural migrations will occur as the native vegetation becomes more established and guides species re-introductions into the reserves.

Objectives - Ecology

To protect the life sustaining elements (mauri) of the reserves' ecology, including indigenous flora and fauna, their natural communities and habitats, indigenous species diversity and nationally threatened or regionally significant indigenous species, representative of the local area within the Whangarei Ecological District.

To progressively restore the indigenous biodiversity of Parihaka Forest in partnership with the Whangarei community.

Policies and Actions

1 A comprehensive flora and fauna survey of the Parihaka and Hatea River reserves will be undertaken within the ten year lifetime of this management plan. Based on the outcomes of this survey a management and monitoring programme will be established focusing on, but not limited to, key native species. (Parks Division)

2 Native species present that are nationally threatened and regionally significant will be identified and management practices established to enhance the protection of such species. (Parks Division, WDC, in consultation with DOC)

3 Measures will be put in place to recognise and protect areas of gumland vegetation within Parihaka Forest and its adjacent reserves. (Parks Division)

4 Mechanisms and systems will be put in place to ensure native orchid habitats within the Parihaka reserves and forest, including roadside banks, is protected and enhanced, with special care taken in management activities during their flowering season of September – February inclusive. (Parks Division)

5 Roadside maintenance and upgrading, and weed spraying and mowing activities within the road reserve of Memorial Drive will be undertaken in a sensitive manner to protect the native orchid habitats. These activities will not be permitted during flowering season, i.e. September – February inclusive without the prior permission of Parks Division of WDC. (Roading Division)

6 A re-survey for North Island brown kiwi will be conducted prior to re-commencement of forest harvesting in early January 2007 to determine the presence or otherwise of kiwi. If kiwi is found, they will be temporarily re-located to Matakohe Island until the completion of forest harvesting. (Parks Division in liaison with DOC)

See also Section 7.1: Recreational Use, Policies and Actions statement #6 with respect to access for dogs in Parihaka Forest.

7 The WDC will protect as far as practicable the known and likely habitats of native bees, including manuka and kanuka vegetation, and the exposed clay banks in and surrounding Parihaka Forest. WDC will encourage further research into native bee communities in Parihaka Forest and reserves. (Parks Division)

8 The removal of any plant or animal material is permitted only for the purposes of reserve maintenance and restoration, the collection of pine cones and firewood from areas of pine forest and approved cultural harvest. (Parks Division)

9 The WDC will explore the setting up of a Trees for Survival programme with local schools and community groups to provide a source of trees and shrubs suitable for planting in the reserves, particularly along the reserve boundaries and road edges. (Parks Division)

10 The WDC, with the assistance of other agencies, will create and enhance ecological corridor connections between Parihaka Forest and other nearby natural areas, such as Pukenui Forest to the west and Mt Tiger/Bream Head to the east. (Parks Division, WDC, in consultation with NRC, DOC and others)

11 An integrated bird translocation plan will be developed in association with DOC. (Parks Division in liaison with DOC)

12 For non-avifauna, such as invertebrates (freshwater and terrestrial), lizards and freshwater fish, management will concentrate on habitat creation, restoration and improvement to aid existing native populations (e.g. riparian and wetland planting, felling away from wetlands) and provide conditions to attract natural migration into Parihaka Forest. (Parks Division)

13 In consultation with the adjacent landowner, a section of the northern boundary fence line of the A H Reed Memorial Kauri Park will be re-aligned to reflect the surveyed property boundary, and the area affected re-vegetated in local native species.

(See also Policies and Actions under Section 3.6: Threats to Indigenous Biodiversity.)

3.6 Threats to Indigenous Biodiversity

The Resource Management Amendment Act 2003 introduced provisions to make regional councils and territorial authorities responsible for maintaining indigenous biological diversity. It is through the NRC's Regional Policy Statement for Northland that direction is given for WDC to control of the use of its land to maintain indigenous biological diversity. At the moment, NRC has agreed to control pests such as Argentine ants and European wasps. However, WDC works closely with NRC in monitoring the pest situation on its reserves. It is the intention of WDC's Policy and Monitoring Division to prepare an Indigenous Biodiversity Strategy for the Whangarei District in 2007-08.

3.6.1 Pest Plants

A field survey conducted in late 2000 by staff of WDC and DOC identified a range of introduced plants present in Parihaka reserves and Parihaka Forest (see Appendix 5 for the complete list). This survey did not extend to the A H Reed reserve or Whangarei Falls. The field survey showed that introduced plants are generally restricted to recently burnt areas, road and track edges and reserve boundaries with private land. Wild ginger (*Hedychium spp.*), climbing asparagus (*Asparagus scandens*), pampas (*Cortaderia spp.*), wandering willy (*Tradescantia fluminensis*) and prickly hakea (*Hakea sericea*) are the dominant species on the western side of Parihaka. Mexican devilweed (*Ageratina adenophora*), mistflower (*Ageratina riparia*), downy hakea (*Hakea gibbosa*) and pampas are the main species in the Parihaka Forest with isolated patches of emergent wattle (*Acacia spp.*), the latter having seeded from larger trees. Wild ginger (*Hedychium spp.*) is concentrated around the wetland areas of the forest and along the forest boundary.

Himalayan feather grass *(Miscanthus nepalensis*), a relative newcomer to the area, is a particular problem along reserve edges on the upper end of Memorial Drive and roadside areas of Whareora Road and Abbey Caves Road. In fact, Parihaka is one of only a few sites in Whangarei where Himalayan feather grass is present. Gorse (*Ulex europaeus*) is also dominating some recently logged areas but is only considered to be a problem where it is encroaching into private property.

As the Parihaka and Hatea River reserves are in close proximity to residential areas, care needs to be taken to minimise the chances of garden escapes. Species such as jasmine (*Jasminum polyanthum*), Taiwan cherry *(Prunus campanulata)*, agapanthus (*Agapanthus praecox*) and Mexican daisy (*Erigeron karvinskianus*) are of particular concern as they are in widespread use as garden plants and can rapidly establish dense communities in the wild. Every effort should be made to make adjoining property owners aware of the risks of garden escapes and the steps they can take to minimise the chances of this happening.

The control of willows within the Hatea River waterway is the responsibility of WDC's Waste and Drainage Division. Willows are only removed when they become a physical obstruction to the operation of the waterway.

Wilding pines will require control work as the forest re-generates. Seedlings can rapidly re-establish in cut-over areas.

As the pines are removed from Parihaka Forest and the native forest begins to re-establish itself, it is likely that seed dispersing birds such as kukupa and blackbird will visit the forest on a more regular basis. These species as well as bringing native seeds can also bring non-native problem seeds. Examples include monkey apple *(Eugenia spp.)*, woolly nightshade *(Solanum mauritanicum)* and loquat (*Eribotrya japonica*).

During 2005/06, the initial phase of a weed control and associated vegetation restoration programme was carried out on the western slopes of Parihaka and Mair Park, covering 103 hectares approximately. A couple of satellite infestations, in the vicinity of the Vale Road and Whareora Road (Hatea River bridge) entrances, were also treated. Weed control efforts are set to continue and expand in area coverage up to and including Whangarei Falls in the future under the Natural Area Maintenance contract for Parihaka.

Ongoing pest plant control is aimed at reducing the spread of key species such as pampas and Himalayan feather grass. Control work will also need to be undertaken prior to any revegetation planting to reduce competition and minimise the need for post-planting care. Post logging pest plant control is also important to control key emergent weeds such as pampas, wattle and ginger. Pampas rapidly re-establishes once areas have been logged.

A co-operative approach between WDC and DOC is taken in the control of weeds on Parihaka, including for the removal of Himalayan feather grass.

Further detail on the control of weeds in Parihaka Forest is set out in the annual harvesting plans for the forest (Northland Forest Managers Ltd.).

3.6.2 Pest Animals

Possums are known to be present throughout the Parihaka and Hatea River reserves. Tree ferns at the Parihaka summit show signs of possum browse. Mustelids and rats are also present but there is no information on population size or distribution. Feral cats may also be present as a result of the proximity of residential areas.

No work has been undertaken to determine what pest animals are present in Parihaka Forest, but it is likely that possums, rodents, mustelids and hedgehogs will be present. Feral cats, domestic cats and dogs may also be present as a result of the proximity of residential areas. Rabbits are unlikely to be a significant problem due to the soil conditions, which are not conducive for burrowing.

Rodent and mustelid numbers are likely to increase as the native forest cover develops and provides a greater variety of food sources. Rodents are omnivorous and are known predators of birds, especially eggs and chicks and also take a wide range of invertebrates. They can have significant impacts on natural regeneration processes as a result of their consumption of seeds of certain species, which tend to be those with fleshy fruit, e.g. nikau, taraire, puriri and kohekohe. Mustelids are a threat to lizards and larger insects (e.g. weta and spiders) and ground dwelling birds such as water birds and kiwi that are potential candidates for reintroduction to Parihaka Forest in the future.

The presence of feral cats is a threat to native birds and lizards. Registration of cats can only be done via a bylaw, and it is doubtful that such a bylaw can be enforced.

At present minahs are not viewed as a serious enough pest problem to warrant requesting NRC assistance in their control. The culling of black-backed gulls is not supported by DOC as, according to their advice, there are not many local colonies and the population appears to be in decline since the removal of food sources with the closure of the Pohe Island landfill. The younger generation of these gulls is fewer in number. The red-billed gull is a protected species.

Possums will be present in the pine plantation and their home ranges will extend into neighbouring farmland and the Parihaka and Hatea River reserve complexes. The combination of pine plantations which provide a source of food (the catkins) in late winter/early spring and the variety of native food sources provided in the area are likely to sustain a large possum population. The proximity of residential housing to the reserves network means that feral and domestic cat numbers need to be closely monitored.

The collective impact of this suite of animal pests in a regenerating forest surrounded by native bush reserves, farmland and residential areas is potentially significant.

It is recommended that a survey be undertaken to determine what pest animals are present throughout the Parihaka and Hatea River reserves, including Parihaka Forest, so that a targeted pest animal control programme can be conducted. To maximise its effectiveness the programme should also include surrounding private land. The prospects for controlling these pests are good due to the reserves being accessible both by walking tracks and the number of surrounding landowners who are interested in undertaking pest control in and around their properties.

In addition to the animal pest control programme, consideration should be given to predator proof fencing an area of either Parihaka Forest or Parihaka reserves. These two large valley systems (refer Figure 1 in the Maps section) could be completely enclosed, thereby providing a predator free haven for native plants and animals, particularly ground dwellers such as North Island brown kiwi that are extremely predator sensitive.

Predator-proof fencing is a new conservation management tool, which offers opportunities for the protection of wildlife and the enhancement of native forest areas. It provides an effective means to achieve the permanent eradication of most mammalian pests on the mainland. It can also engender considerable community support as has been demonstrated with the creation of the Karori Wildlife Sanctuary in Wellington and the Maungatautari project in Waikato. (Mice and Argentine ants are still a problem, the latter recognised as a key threat to biodiversity.) However, the cost effectiveness of establishing and maintaining a predator-proof fence around the reserves and/or Parihaka Forest is questionable. In addition, complete exclusion of pests and the clearance of a strip of land to ensure integrity of the fence are required. Following consideration of this option, WDC has decided not to proceed further, concentrating its efforts instead on increased pest animal control.

3.6.3 Integrated Pest Management and Control

The Northland Regional Pest Management Strategy aims to achieve comprehensive and integrated management of both plant and animal pests across Northland. The WDC intends to prepare integrated pest plant and pest animal strategies for the Parihaka and Hatea River reserves, in accordance with this Strategy. The NRC has expressed an interest in contributing to this task.

Section 3.5 of the Northland Regional Pest Management Strategy deals with Community Pest Control Areas (CPCA), whereby the NRC will carry out pest control in a defined area, and may supply subsidised resources for ongoing maintenance operations. The NRC has expressed a wish to work with WDC to establish a CPCA in the Parihaka reserves and assist with maintenance of drains in the area.

Objective – Threats to Biodiversity

To manage threats to the indigenous biodiversity of the Parihaka and Hatea River reserves so as to protect and enhance the natural and cultural values of the reserves.

Policies and Actions

1 Integrated weed control and vegetation restoration plans will continue to be prepared and implemented across the Parihaka and Hatea River reserves, forming part of a district-wide Pest Management Strategy. Pest plant control in the reserves will continue to focus on the reserve edges and entrances, tracks and road sides, and within logged areas of the forest, and on those species which have the potential to spread rapidly and/or inhibit natural regeneration. (Parks Division, WDC, in consultation with NRC)

2 Pest plants will continue to be monitored to help determine priorities for control. (Parks Division)

3 Gorse will only be controlled where it is within 10 metres of a 'reserve' property boundary, encroaching onto private land and along road and track edges in the Parihaka Forest or a major fire hazard. (Parks Division)

4 Eucalypts along reserve boundaries, and wilding pines and other exotic trees (e.g. wattle) in Parihaka Forest that do not have heritage value will be progressively removed. (Parks Division)

5 Willows will be removed from within the Hatea River waterway when they pose a physical obstruction to the operation of the waterway. (Waste and Drainage Division)

6 Locally sourced native plants will be used to restore former weed infested areas, for revegetation and amenity. (Parks Division)

7 Council will liaise with adjoining landowners to encourage minimising of garden weeds escapes by planting species unlikely to become problem weeds or those that will not pose a threat to the health of the native vegetation of the Parihaka and Hatea River reserves. (Parks Division)

8 An integrated pest animal management strategy for the Parihaka and Hatea River reserves will continue to be prepared and implemented in consultation with the NRC. It will form part of a district-wide Pest Management Strategy. It will focus on the following tasks.

- Eradication of key species such as goats and pigs
- Control of possum populations to low levels (aim for =/< 5% Residual Trap Catch)
- Control of mustelids and cats to low levels
- Control of rats during the bird breeding season (spring-summer) in high ecological areas of the reserves
- Control of mice and hedgehogs in high ecological areas to levels where their impacts on native species are minimised
- Monitoring of all pests and indigenous fauna.

(Parks Division)

9 The WDC will work with the NRC to establish a Community Pest Control Area for the Parihaka and Hatea River reserves in accordance with the Northland Regional Pest Management Strategy. (Parks Division in consultation with NRC)

10 The WDC will carry out a public awareness programme of the potential impacts of cats and dogs in the Parihaka and Hatea River reserves, promote responsible pet ownership and provide advice and incentives for adjoining landowners to carry out pest animal control on their land. (Parks Division)

Section 4 Cultural Heritage and Environment

WDC acknowledges the history of the whole area, as told below, is incomplete. There are significant gaps as it relates to the Parihaka Forest.

With respect to Tikanga Maori, it is acknowledged that most of the information has been sourced 'second-hand', i.e. from authors such as Glenys Nevin 'Te Pa o Parihaka – Parahaki', Nancy Pickmere 'The Story of Whangarei', Florence Keene 'Tai Tokerau' and A.H. Reed 'Early Northland', rather than directly from local kaumatua. WDC is keen to gather other stories on Parihaka and Hatea, and welcomes further comment from Maori.

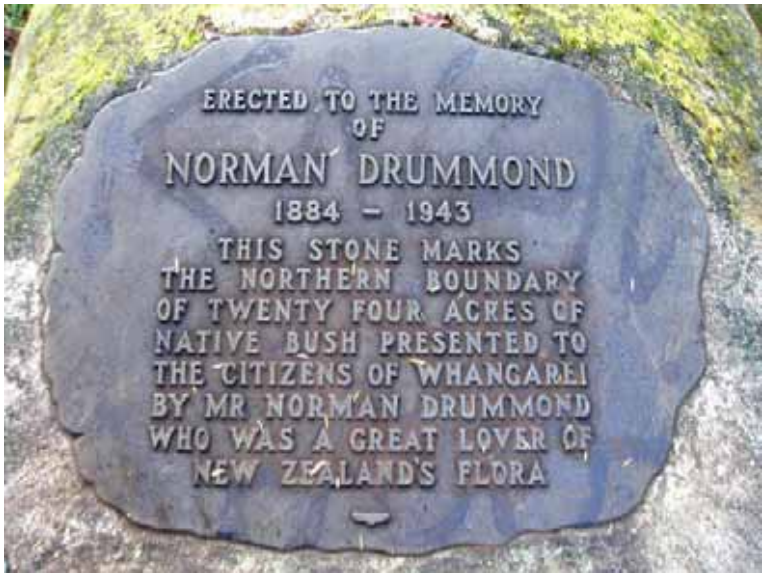


Photo: Tribute to Norman Drummond, Drummond Park

4.1 Tikanga Maori

WDC acknowledges and respects that Parihaka is a site of extreme cultural and historical significance to Maori in the region. For Maori, the values of tapu (under restriction, sacred), mauri (life essence), mana (influence, authority, and power), wairua (spirit/spiritual) and many others are imbedded in this Maunga (mountain). Parihaka will be managed to recognise its status as a significant waahi tapu site.

4.1.1 Ngai Tahuhu Occupation

Whangarei was originally the territory of the Ngai Tahuhu. This tribe had villages, fortifications and cultivations in the surrounding hills, near the harbour and rivers and on the sandy river flats where the present day Whangarei City centre is situated.

Stretching from the Regent, to Kensington, to Whau Valley and to Mair Town, this wide plateau was one of the most intensively cultivated places in the Whangarei area. Swamps and streams once flowed across the plateau and down to the Hatea River and Waiarohia Stream. Rich volcanic soils and plentiful sunlight would have produced large crop harvests to feed the people based on and around Parihaka.

The Parihaka pa and an attached open village, both known as Tawatawhiti, were located in Mair Town. Here lived some of the people who planted and harvested kumara from the cultivated areas nearby, and who probably filled the storage pits of Parihaka pa, ensuring the provision of this staple food for the local population. These people were hapu (sub-tribes) of Ngai Tahuhu.

Over the years, owing to intertribal warfare, the territory of Ngai Tahuhu, which originally covered a large portion of the north, diminished considerably, and the tribe was divided into two main hapu; Ngati Tu and Ngati Rangi. Their lands stretched as far north as Ohaeawai. Ngati Rangi occupied the Kaipara and inland area and they had a pa on the western shore of Whangarei Harbour. Hikurangi, chief of Ngati Tu, was, at one stage, living in a pa on the north side of Whangarei Harbour in the Parua Bay area.

The remnant of original kauri forest, now known as A H Reed Memorial Kauri Park, was protected against fire by Ngati Tu because of its beauty, and the berries it produced for the kukupa. Its greatest importance, however, lay in its use as a burial place for chiefs. An extensive rock cave had been discovered by the Tohunga of Ngati Tu, though it is probable this has now been obliterated by rock fall (Reed, undated).

4.1.2 Conquest of Ngapuhi and Inter-tribal Wars

The powerful and aggressive Ngapuhi and its hapu were showing interest in extending their territory southwards. Chiefs were impressed with the plentiful food supply of Whangarei during several visits to the

area. The chief, Ngaro-ki-te-uru, son of Hikurangi's sister, Mihiao, and her Ngapuhi husband, Uiho, sent for the two warrior chiefs, Tawhiro and Wahanui, half brothers of Ponaharakeke. They arrived in Whangarei with a war party which attacked Ngati Tu, killing many of their people and sacking most of their villages. The Ngati Tu land was then divided up among the conquerors. Ngaro-ki-te-uru secured possession of Tamaterau, Parihaka, Kamo, Ketenikau and land to the north for his hapu, who became known as Ngati Kahu.

By the beginning of the 1800's, the land around Whangarei Harbour was occupied by several tribes connected by blood ties and all part of the Ngapuhi 'confederation'. The strongest tribe was Te Parawhau. They occupied the western shore at the head of the harbour and had a number of pa. The chief of Te Parawhau was Kukupa, the acknowledged war leader in a time of great unrest.

Kukupa was born about 1770-1780 at Tauranga-kotuku, on the north bank of the Otaika River near the harbour, and not far from his pa, Onemama. He was grandson of both Te Ponaharakeke and Tawhiro, and part of a long line of fierce, ambitious warriors. At the time of his birth, a wood-pigeon flew against the barge-boards of the house – hence the name, Kukupa (wood-pigeon). He became the paramount chief of both Te Parawhau and Uri-roroi. Like his contemporary, Hongi Hika, Kukupa spent a great deal of his life on the war-path, attacking tribes at Hauraki, Tauranga and East Cape. It was Kukupa and his Hapu who performed the fearsome haka on top of the steep cliffs defending Parihaka from their enemy in the late 1700's.

Kukupa's eldest son, Te Ihi, was a chief and a celebrated warrior whose feats of prowess were legendary. Whenever Ngapuhi needed a man of athletic skill, Te Ihi, known as *'te mana o Ngapuhi'* (the pride of Ngapuhi) was chosen to represent them. Te Ihi died at a relatively early age. Tirarau, Kukupa's second son and eventual successor, became paramount chief of the Wairoa and Whangarei districts. At his death, the mana and leadership of Te Tirarau passed to his brother, Taurau, and nephew, Tito.

Inter-tribal wars continued throughout the 1820's and into the 1830's. During this time, Whangarei became the meeting place where the northern war-parties assembled on their way southward in their waka taua (war canoes). Sometimes the assembled 'armies' would number 2,000 – 3,000 men. They would camp on the shores of the harbour, retell the stories of past victories and defeats, dance the haka and polish their muskets. It was these great gatherings of the tribes that, according to one account, gave the harbour the name *Whangarei Terenga Paraoa* – literally the 'swimming place of the whales', which could be translated as 'the meeting place of the chiefs', since the whale-bone *mere* was a weapon of chiefly status. Inevitably, Whangarei, because of its coastal accessibility, bore the brunt of many retaliatory expeditions of the southern tribes as they sought *utu* for the injuries they had suffered at the hands of Ngapuhi.

When the European settlers came to Whangarei, there was still much evidence of a battle on the slopes of Mount Parihaka, with many whitening bones. Around 1842, when Robert Mair first climbed Parihaka, he found an upright post of totara and a ridge pole – the structural remains of a house – resting on the ground. Both Drummond Park and Ross Park have an extensive complex of pa and associated features.

Whilst mana ki te whenua (influence or authority over the land) is considered to be the preserve of Ngaitorongare, it is acknowledged that other hapu in the region have vested customary interest in Parihaka. All have kaitiakitanga (guardianship) responsibilities.

4.1.3 Whangarei Falls and Hatea River

Several stories exist in the Maori community on the significance of the Whangarei Falls/Hatea River area. This management plan presents the current situation (November 2006) and recognises the name 'Hatea' is still under consideration.

The succession of responsibility for the area is understood to have passed from Ngai Tahu to Ngati Kahu, Te Parawhau and on to Ngati Hau.

The old name for the area is believed to be Otuihau, which possibly reflects the 'sowing of the winds', or the whirlwinds which were once prevalent at the foot of the falls. The falls themselves are understood to mark an important boundary of Ngati Hau territory. It is said the river was full of eels and the local Maori set their traps here.

Above the falls, the river becomes two streams; the Mangakino and the Waitaua. This area was known to be rich in tuna (eels) and koura (crayfish). The name of a local block of land – ramarama – reflects this at it

means 'using traps for eeling'. Tikipunga, the name which appears to have replaced Otuihau, means 'fetch eel traps'; 'punga' being the local word for eel trap.

There were allegedly many huts on the slopes behind where Pehiaweri Marae is now, that were occupied by tohunga. The wounded from the battle at Ruapekapeka were also treated here. It appears that several of the dead from Ruapekapeka were buried at the church, although the graves are not marked.

It is believed that the foot of the falls was once tapu. After the battles on Parihaka, the pool below the falls was apparently used for washing the wounded and dead, and was known as an area of healing. One of the stories says some of the warriors' bodies were left lying below the falls for a long time and seeped into the river. The river became a calabash that carried the spirits of those that had fallen in battle, from whence the name Hoteo came from. The calabash has also been understood as a gourd that carried water for food – reflecting the shape of the landform and the pouring of water (over the falls). (For some Maori, the river corridor between Whangarei Falls and A H Reed reserve is sacred, and they are not allowed to get eel from the river.) In a letter dated 10 August 1914, Mr Gilbert Mair, writing from Ohope to his brother Robert in Whangarei, stated "...and remind one of the old trees up the river Hoteo."

Support for the name 'Haatea' comes from an understanding of Haatea as a type of pounamu/greenstone, which was a prized possession by the tupuna; other types of greenstone being Waitangi and Iinanga. Haatea has milky-to-creamy and brown swirls going through it, and if the river is observed when the tide is coming in, this will be evident.

The name Hatea/Hoteo/Haatea is being considered by the New Zealand Geographic Board in late 2006. The WDC and public will be advised of their decision.

4.2 European Associations

4.2.1 Crown Purchase of Parihaka

In 1857 Andrew Sinclair surveyed the Parahaki Block (4481 acres). The Crown purchased it in the same year from the following Ngati Kahu chiefs; Pohe, Tipene and Te Pui of Ngaitorongare whanau, and others including Mangawhare. The sale is recorded in the "Maori Deeds of Land Purchases" as MD 108. The Native Title to the land was extinguished by a proclamation notified in the NZ Gazette of 14 November 1857.

Debate arose in the Native Land Court during the 1860's between Chief Te Puia and the Crown over the alienation of the Parahaki Native Reserve. The Court ordered that a Certificate of Title be issued in favour of Te Puia and Pohe for the Native Reserve called Parahaki, which lead to the establishment of the Parahaki Nos. 1, 2 and 3 Blocks.

4.2.2 Parihaka Reserves

A number of the Parihaka reserves take their names from early European settlers who founded the city of Whangarei (Keene, 1966). Some were gifted to the City – Drummond Park, Mair Park, Dobbie Park and Lovatt Bird Sanctuary.

Mackesy Bush is named after the family of Colonel C. E. R. Mackesy who took up a land grant in the Mackesy Road area in the 1890's. Colonel Mackesy was a volunteer soldier in the New Zealand land wars, and went overseas as officer in charge of the Auckland Mounted Rifles in 1914. Following the end of WW1 he became a land and estate agent in Whangarei.

WDC records indicate that Mrs. Norman Drummond acquired Drummond Park in the name of the Council in 1944 to fulfil a bequest from her late husband. Norman Drummond was responsible for planting many native trees along the Drummond track leading up to the summit (Keene, 1966).

Mair Park takes its name from Robert Mair. The Mair family was one of the first to settle in the Whangarei area as a result of the Navy exchanging family land at Wahapu (south of Russell) for an 1800-acre block in Whangarei, which became known as Mair's Grant. This occurred in the early 1800's. Mair Park was presented to the people of Whangarei in 1914 for the purposes of a public park or domain. In 2002 members of the Mair family gifted a seat and plaque to be installed in the park to confirm the pride they felt for the gift of the park by their ancestors.

Dobbie Park was gifted to the people of Whangarei by Mr Herbert B. Dobbie in March 1910. Mr Dobbie's association with the Parihaka area dates back to the 1880's. Following the completion of the Whangarei to Kamo rail line, he became Whangarei's first Stationmaster in October 1880, and in 1882 established an orchard known as Wairere, off Mill Road at the base of Parihaka. He is the author of "New Zealand Ferns" published in 1930.

Lovatt Bird Sanctuary, Drummond Park and Ross Park were also named after local people who gifted the land as public reserves – see Sections 1.5.7, 1.5.4 and 1.5.3 respectively for further information.

4.2.3 A H Reed Memorial Kauri Park

Due to the foresight and initiative of James McKinnon, former Clerk of the Whangarei County Council, an area of 45 acres (18 hectares) of remnant kauri forest and adjoining land (in part known today as the A H Reed Memorial Kauri Park) was gazetted in 1889 as a recreation reserve under the Public Domains Act. Subsequently, the reservation of the southern portion of some 25 acres (10 hectares) was revoked for future farming purposes. The entire 18 hectares however, which included a quarry reserve, was vested in the former Whareora Road Board in 1909, and thence to the former Whangarei County Council in 1921 when the Board was merged with the Council.

In 1925, the Minister of Crown Lands authorised the quarrying of stone in the recreation reserve. It is believed the late A H Reed wrote to Council requesting stopping the quarrying of rocks at the falls for road metal, as he wanted to see the kauri trees, which were the best examples of such in close proximity to Whangarei, protected. The quarrying operations ceased two years later, but by this time the height of the Paranui Falls, originally considered more scenic than the Whangarei Falls, had been reduced.

The recreation reserve was renamed the A H Reed Memorial Kauri Park in 1957, and its status changed to scenic reserve the following year. The pioneer Reed Homestead adjoins the eastern boundary of the reserve, on the opposite side of Clapham Road from the upper car park. (Reed, date unknown, The Story of a Kauri Park). The late A H Reed, who died in 1975 aged 99 years, was a well known New Zealand author, publisher and long distance walker.

4.2.4 Whangarei Falls

In the 1880's and 1890's, the Whangarei Falls were a very popular picnic spot for residents of Whangarei. With the exception of Whangarei Falls and A H Reed reserve, there were no other parks in the Hatea River vicinity. The only means of crossing the river within kilometres of the town were by boat or a ford below the town wharf. At this time, there was also no river-side road, merely a narrow horse track which eventually led up to a road branching off from that to Whareora and down through Mackesy's homestead to Onerahi (then called Grahamstown), Parua Bay and Whangarei Heads. It was apparently a fairly dusty journey from the town, as the metalled footpath ended at the parting of Kamo and Mill Roads; beyond there was no metal surface. Thus, it was difficult to get to Whangarei Falls from the town.

In the late 1920s it was purchased by Mr Archibald Clapham, reputedly to prevent the falls being developed as a commercial watermill site. (Several surrounding properties are still owned by the Clapham family.) In 1946 a local businessmen's association raised the purchase price by public subscription and the property was vested in "His Majesty the King" as a public domain. The Domain Board handed over control to the Whangarei Borough Council in 1958.

4.2.5 Mining and Early Forestry

The hillside of Parihaka has also been prospected for gold. Three shafts have been sunk. The first was by Daniel and Jeremiah Horne in the 1850's on the right hand side of the gully facing Mair Park. J W and A H Reed and Colonel Mackesy sank a further shaft in 1893 from a property on Mackesy Road and the final shaft was sunk in 1909 in the area of Ross Park. Economic quantities of gold were never found. In 1898 H R Holman and G Kerr prospected in various parts of Parihaka but, again, did not find gold in payable quantities.

During the second half of the 19th century, fossil gum to the value of many thousands of pounds was dug from the kauri forest on the western slopes of Parihaka. Charred timber beneath the ground surface shows that the majority of the forest was destroyed by fire. (Reed, date unknown, The Story of a Kauri Park.)

Halloysite which is potentially suitable for use as china clay is extensively developed on Parahaki Rhyolite. It has been mined on the western side of Parihaka (White & Perrin, 2003).

4.2.6 World War II War Memorial

The war memorial, located at the top of Memorial Drive, was constructed in 1956 and formally unveiled a year later. It represents the lives of New Zealand men and women who died in World War II, those who are buried overseas and those who have no known grave. Approximately 30,000 New Zealanders are buried in 61 countries and in the oceans of the world. They include 9,000 New Zealanders who have no known grave. The memorial is a reminder of sacrifice of the lives of 170 citizens of the Whangarei District. It also honours all who served.

The war memorial is an important cultural, spiritual and heritage icon, a symbol of national identity showing international achievement by New Zealanders and the contribution of servicemen and servicewomen to gain the freedom of others.

Interpretation signage will be erected to explain the historical importance of the war memorial, who the RSA are and what they value. Consideration will be given to the inclusion of the names of those who went from Whangarei to fields of conflict, who were killed in battle or died of wounds, on the memorial. These initiatives could assist young New Zealanders gain an understanding of their country's military heritage and the contribution made by those who served and still serve in the armed forces. The WDC is liaising with the Whangarei RSA on the memorial and nearby lookout.

The cultural history of the area, both Maori and non-Maori, is significant in the development and settlement of Whangarei township and provides unique on-site interpretation opportunities. The panoramic views from the Parihaka summit also provide opportunities to link the history of the town with the wider district and surrounding features such as Matakohe/Limestone Island and the Portland cement works.

See also Section 1.5: Land Tenure and Status.

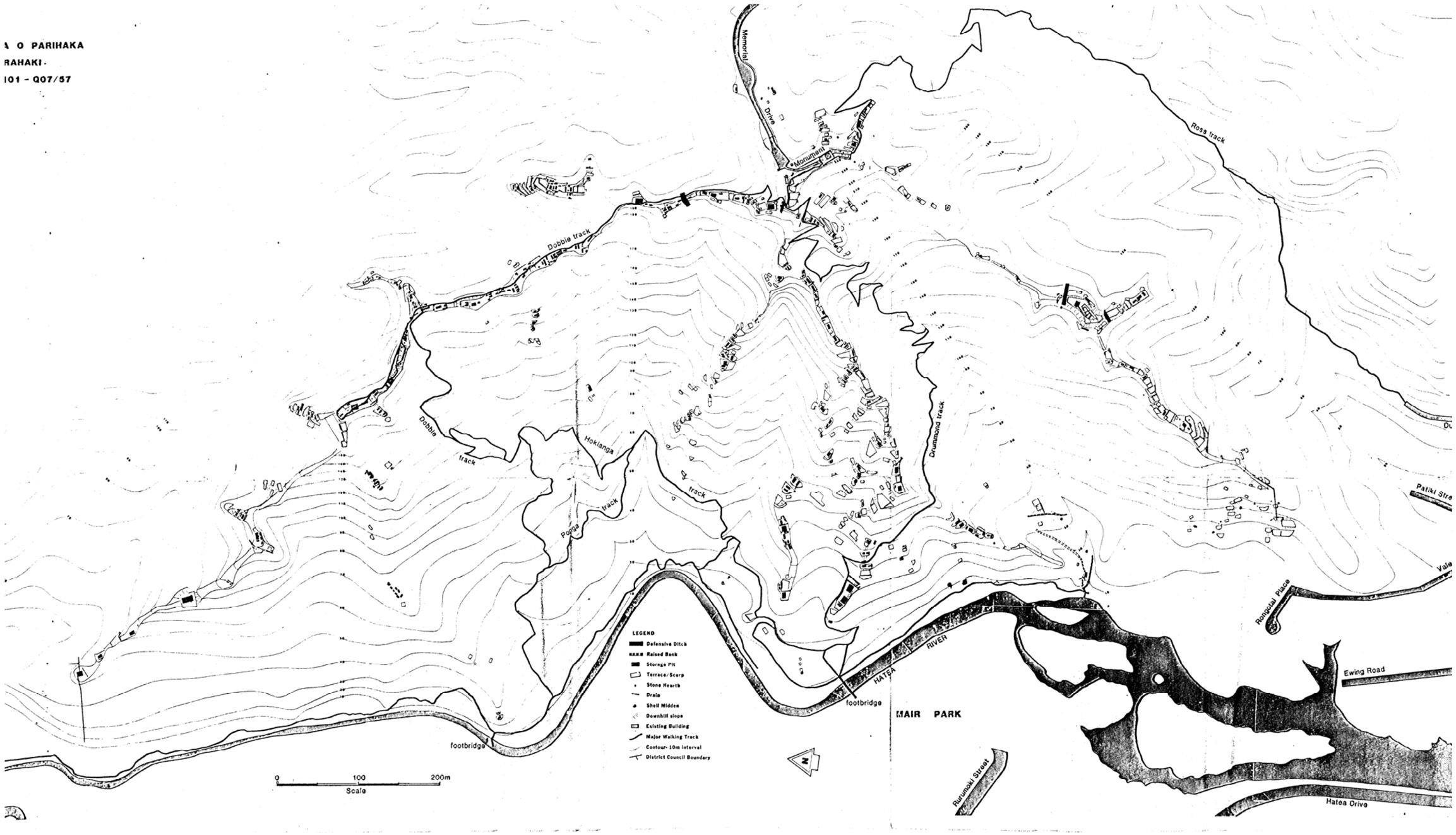
4.3 Archaeology

Mount Parihaka was the site of one of the most impressive and largest pa complexes and settlements in Aotearoa/New Zealand (pers. comm., Richard Shepherd, Ngati Kahu o Torongare – sourced from T Hamilton, CRON.01, 19 September 2005).

The Parihaka pa complex is recognised by the NZ Historic Places Trust as one of the most significant heritage sites in Northland (Figure 3). Although comprising three pa sites – at the summit, on the knoll halfway along the southern ridge and beyond this at the end of Vale Road, it has been recorded as one site in recognition of the interrelationship of all three pa sites. The three pa sites were heavily defended by major ditches and palisading. Remains of the pa and ditches and associated storage pits and house sites can be seen in the bush along the upper tracks, which lead down from the summit.

The Northland Archaeological Site Recording Team undertook the first formal archaeological survey of Parihaka in 1979. The plans from this survey were redrawn and reduced by Glenys Nevin in 1981 to produce a compiled plan - the first archaeological map of the complex to be completed. Glenys Nevin compiled additional information on the complex in 1990, which resulted in the installation of the present information signs at the main pa site along the Drummond Track.

Figure 3: Parihaka Pa Complex



An archaeological survey of the Parihaka Forest was undertaken in early 2002 and a resulting report produced a couple of months later (Nevin, 2002). The survey indicated no sign of Maori settlement was found, but given the close proximity of Parihaka pa and the likelihood that the original cover of the area would have been kauri forest, it is likely that the area would have been used as a food resource and for the gathering of other materials. The survey report concluded that there is little likelihood of unknown earthwork sites such as pa and pits appearing when the pine forest is removed.

WDC's forests contractor, Northland Forest Managers, commissioned in 2005 an archaeological assessment and evaluation of the forest compartments to be harvested over the summer of 2005/06. The resulting report was produced in October 2005. Its conclusion agreed with findings of David Nevin's report of 2002, that archaeological sites in Parihaka Forest are low. The New Zealand Historic Places Trust, in a letter dated 25 November 2005, issued an Authority pursuant to Section 14 of the Historic Places Act 1993, and stated they were satisfied Maori had been consulted and sufficient archaeological research had been conducted prior to commencement of forest harvesting. Similar archaeological assessments will be prepared annually just prior to harvesting of forest compartments.

The Historic Places Act 1993 provides for the identification, protection, preservation and conservation of the historic and cultural heritage of Aotearoa/New Zealand. Under the Act, an archaeological site is defined as a place associated with pre-1900 human activity, where there may be evidence relating to the history of Aotearoa/New Zealand. The Act provides protection for all archaeological sites, whether recorded or not.

It is an offence under the Historic Places Act to modify, damage or destroy an archaeological site without an archaeological Authority obtained from the New Zealand Historic Places Trust. An Authority is required whether or not the land on which an archaeological site may be present is designated, or a resource consent or building consent has been granted. Should any site be inadvertently uncovered, work should cease, and the Trust and local iwi consulted immediately. The NZ Police should also be consulted if the discovery includes koiwi or human remains. Prosecution under the Historic Places Act is risked if damage to an archaeological site occurs when and where it can be demonstrated by the Trust that the offender had 'reasonable cause' to know of the site's existence.

When any development work is proposed, such as track maintenance and upgrading, installation of a signboard or construction of a car park, an assessment should be carried out on whether the proposed works will potentially affect any archaeological site and if so, how such impacts will be managed to the extent that damage is ideally avoided. The first option should be redesign of the proposal to avoid damaging the site. If avoidance is not possible, an Authority is required.

4.4 Managing Cultural Heritage

In recognition of the significant cultural heritage values of the area and the inter-relationship of various sites to one another, the Parihaka reserves will be formally managed as an integrated cultural heritage landscape. Increased emphasis will be placed on the protection and sensitive management of key sites.

In the western reserves this will include the upgrading, re-routing or rationalisation of sections of tracks and the development of a better on-site interpretation package. This will include interpretation of both Maori and European history of the actual reserve area but also how Parihaka relates to the wider district.

The cultural heritage of Parihaka Forest is integrally connected to the western Parihaka reserves and the associated pa and occupation sites contained within these reserves. Although previous sites in the forest may have been destroyed with past pine plantation activities, it is important to manage Parihaka Forest as a linked site in relation to the extended cultural heritage landscape that surrounds the Parihaka pa complex. Iwi will be considered as a key partner in the management of the whole area and will be invited to have representation on any community group established for Parihaka.

As a precautionary measure, and in keeping with the requirements of the Historic Places Act 1993, resource consents for logging in Parihaka Forest area will incorporate conditions to protect any archaeological or natural features that may be present. Any maintenance or development work, particularly those that require resource consents, will have a condition which requires that if any materials (e.g. shell, hangi stones) are found of archaeological importance, work should stop to minimise further disturbance. The New Zealand

Historic Places Trust will be consulted. Contact should be made with WDC who can then organise for an archaeological survey to be undertaken.

There is opportunity for local iwi to take part in commercial activities relating to visitor hospitality, guided visits and cultural interpretation and education.

Consideration will be given to issues relating to cultural harvest where this does not adversely affect natural values of the area. This may include the collection of seed for revegetation programmes in the wider Whangarei district and the removal of other material for traditional purposes. WDC will continue to work with iwi who have mana whenua as the management plan is developed and implemented.

Objectives – Cultural Heritage and Environment

To protect and maintain archaeological, historic and cultural values and sites, places and landscapes, and mitigate or avoid threats to them.

To interpret archaeological, historic and cultural sites, places and landscapes in consultation with affected parties.

Policies and Actions

1 The WDC will consult with the New Zealand Historic Places Trust in recognition of their statutory responsibility for protecting archaeological sites under the Historic Places Act 1993.

2 The WDC will ensure appropriate mechanisms are in place for the protection of archaeological sites and for the identification of unrecorded or unknown archaeological sites in accordance with the Historic Places Act 1993. (Policy & Monitoring Division)

3 The WDC will have due regard for the need to protect and maintain archaeological sites when planning and siting new recreational/public facilities, upgrading existing facilities, providing new recreational opportunities, carrying out logging activities and re-vegetating Parihaka Forest. (Parks Division)

4 The WDC will comply with the requirements of the Historic Places Act 1993 where work (e.g. logging, recreational facility development, re-vegetation) is to be undertaken on or near archaeological sites and ensure that any disturbance that results in the exposure of potential archaeological material will be stopped immediately and reported to the WDC. Internal procedures will be developed to follow in the event of the discovery or disturbance of archaeological sites (Parks Division)

5 A Memorandum of Understanding between WDC Parks and those who hold manawhenua status over Parihaka and Hatea River reserves will be prepared by WDC Parks in consultation with Maori. (Parks Division)

6 In association with local iwi, WDC will develop protocols for cultural harvest, procedures to deal with disturbance of waahi tapu or other sites and a site condition monitoring programme to ensure that reserve use and/or development is consistent with their protection. The WDC will encourage local hapu to take the lead in the identification, survey and management of Maori cultural heritage and archaeological sites. (Parks Division)

7 Reserves established which take their names from early European settlers will continue to be managed in the spirit of their original gifts. (Parks Division)

8 The WDC will develop an on-site cultural and historical interpretation programme designed to increase public awareness and appreciation of the significance of Parihaka as a cultural heritage landscape and the significance of the area in the European settlement of the Whangarei Town Basin, Mairtown and Kensington areas. (Parks Division)

Section 5 Production Forestry

5.1 WDC Forest Estate

The Parihaka Forest is part of the total WDC forest estate, which comprises 267 hectares. (The actual land title area of the forest estate is 370 hectares and includes native forest, scrub and pasture.) Management of the forest estate is undertaken by a contract forest manager as the forest estate is too small to justify WDC employing full time, in-house, forestry expertise. Watson and Mason Forestry Northland Limited managed the estate from 1991 to end September 2004. Subsequently, Northland Forest Managers (1995) Limited has been given the responsibility for harvesting and marketing timber from Parihaka Forest, and a new Forest Harvesting and Management Contract written.

Photo: Regenerating Bush with Radiata pine forest in background (WDC)

Guiding the future management of the WDC forest estate, and as an adjunct to the Forest Management Agreement, is the Forest Management Plan 2004-2008. General objectives of the plan include:

- Maximising the financial return to WDC from management and harvesting of the forest estate
- Maintenance of soil and water resources
- Protection of historic places and artefacts
- Allowing for public use of the forest estate for recreational purposes compatible with their productive use.

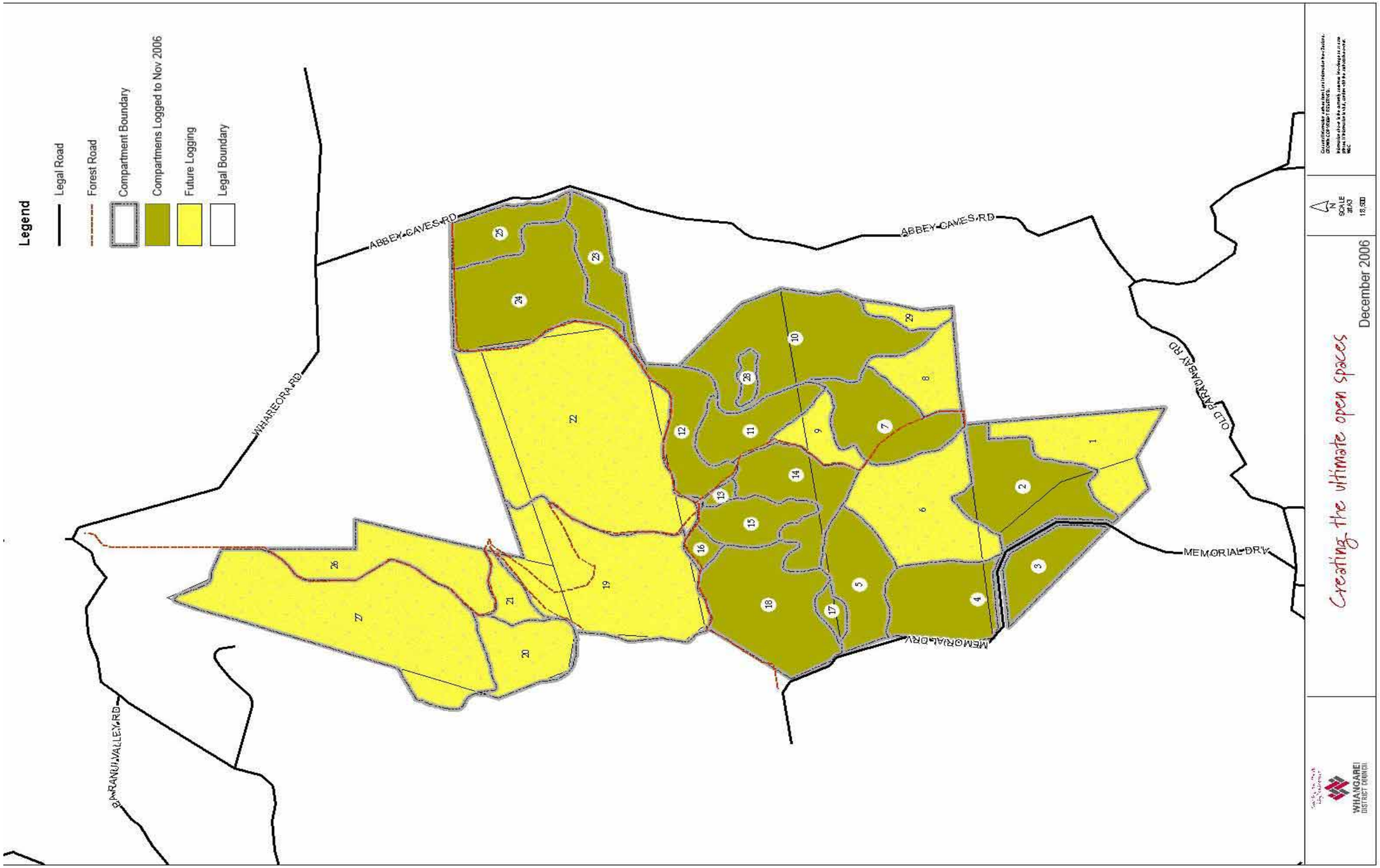
Annual forest harvesting plans are also produced for Parihaka Forest by Northland Forest Managers Ltd.

5.2 Parihaka Forest

At 183 hectares (128 hectares in exotic forest production cover), Parihaka Forest is currently WDC's largest forest. The predominant vegetation cover within the forest is Radiata pine.

Planted between 1974 and 1985, the second rotation of *Pinus radiata* has been grown under several silvicultural regimes with the older age classes having some pruning whereas the younger age classes managed under an unpruned regime. As a result of the poor soils tree quality is good in terms of straightness and branching but growth rates are generally low. Harvesting of this tree crop commenced in 1997 though was later placed on hold waiting for maturity of the trees. As at the end of November 2006, 16 compartments have been logged over approximately 73 hectares – see Appendix 6: Logging Plan. The logging plan identifies which forest compartments will be logged and when this will occur. Figure 4 shows which forest compartments have been harvested and which will be harvested over the coming years.

Figure 4: Parihaka Forest Harvesting Activities



A resource consent issued by the NRC to WDC (CON20051366701) provides for the harvesting of *Pinus radiata* within Parihaka Forest between 1 October and 30 April the following year, commencing 2005/06 and finishing 2009/10. It further provides for earthworks for the upgrading of forest processing sites and logging tracks, the discharge of stormwater to land from activities and the diversion of stormwater. Conditions of consent include preparation of an annual harvest plan, compliance with NRC's Regional Water and Soil Plan for Northland, minimisation of the potential for soil erosion and sediment loss, and the protection of archaeological sites or koiwi (human remains).

Harvesting occurs six days per week, leaving Sundays free for public access. The public also has access to the forest on public holidays. Signs will be erected to advise the public that the compartments are to be harvested and the Abbey Caves Road forest entrance will be closed to public access during harvesting activities.

See also Section 4.3: Archaeology.

5.2.1 Native Forest Restoration

In July 1997, the Community Enterprises Committee, under delegated authority of full Council, resolved:

That the replanting of the Parahaki Forest Block be in native species.

It was further resolved by the Committee that the Parks Division would administer the land.

The restoration of Parihaka Forest will concentrate on natural regeneration, supplemented by managed revegetation in target areas such as wetlands and riparian margins and along ridge tops. Local native seed collection for planting commenced in 2006 and will continue throughout the restoration process. Further details on forest restoration are set out in Appendices 7 and 8 of this management plan.

There may be times when the WDC will exercise its powers under Section 55 of the Reserves Act 1977, and prohibit access to parts of the reserve(s) while they are being planted and/or regeneration is occurring.

It is worth noting that overall Parihaka Forest is either not recognised or classified under the Reserves Act (see Section 8.1: Reserve Status, for information on a proposal to classify Parihaka Forest as scenic reserve under the Reserves Act following harvesting of the current exotic tree crop). While this management plan can only provide guiding principles for Parihaka Forest inclusion of this land recognises its role in the integrated management of Parihaka[2].

Objective – Production Forestry

To progressively remove the pine plantations from within Parihaka Forest in a manner consistent with sustainable resource management principles, and provide for the forest to be restored to native vegetation.

Policies and Actions

1 The management of Parihaka Forest for productive use will be in accordance with the WDC's Forest Management Plan until the completion of harvesting of the forest. (Parks Division)

2 During the period of forest harvesting, public access and recreational use of the Parihaka Forest will be permitted providing it is compatible with the forest's productive use. (See Section 7.3: Facilities and Services – Objective.) (Parks Division)

[2] Land which is not subject to the Reserves Act can be included in a Management Plan but the plan has no statutory weight for that land and Council cannot be bound by the terms of the act (Reserves Act Guide, 1999).

3 Logging and the clearing of access roads, tracks and skid sites will be undertaken so as to minimise adverse effects on the environment (e.g. sedimentation of waterways, erosion of slopes and stream banks, archaeological sites). (Parks Division in consultation with NRC)

4 Trees felled will not encroach into or close to wetlands and riparian areas. (Parks Division in consultation with NRC)

5 Information signs, in accordance with public safety requirements, will be installed by Northland Forest Managers Ltd. at the Abbey Caves Road, Memorial Drive (lower and upper gates) and Whareora Road (Goetzee Track), and at strategic points in the forest, to notify the public of forestry harvesting activities, and which areas are closed/open to the public. (Parks Division)

6 The WDC, Northland Forest Managers Ltd., and recreational clubs using Parihaka Forest will maintain close communication throughout the period of forest harvesting. (Parks Division)

7 Restoration of the Parihaka Forest following logging will be carried out in accordance with the Parihaka Forest Restoration Plan (Appendix 6). The emphasis will be on natural regeneration, supplemented by revegetation of ridge tops and valley canopies, boundaries, wetlands and riparian margins and the south eastern portion of Parihaka Forest. The WDC will seek community and iwi assistance with the revegetation programme. (Parks Division)

See also Policies and Actions for Section 3.5: Threats to Indigenous Biodiversity for the control of pest plants in forest areas, removal of wilding pines and changes to forestry management practices where kiwi are present.

See also Policies and Actions for Section 4: Cultural Heritage and Environment.

See also Policies and Actions for Section 6: Fire Management.

Section 6 Fire Management

The Whangarei District comprises a total area of approximately 271,000 hectares. Within this area approximately 8,833 hectares of Urban Fire District are under the control of the New Zealand Fire Service (NZFS). Approximately 92,926 hectares of Crown land with a one kilometre safety margin is under the control of DOC. The balance, approximately 169,241 hectares of land is administered by WDC, who contract out their fire management responsibilities to Forest Protection Services (FPS). Fire management for the Parihaka reserves is fragmented between these three authorities, with NZFS looking after Whangarei Falls, part of A H Reed reserve and Mair Park, DOC looking after their Whareora Road Scenic Reserve and the remainder of A H Reed reserve, and WDC the rest.

WDC and DOC are legally recognised as Rural Fire Authorities (RFA). A Principal Rural Fire Officer is responsible for carrying out fire control functions within their Rural Fire Area including response to fire incidents. Rural Fire Plans detail policies and procedures for fire reduction, readiness, response and recovery. There are three phases of Fire Season – Open, Restricted and Prohibited. Under a Restricted Fire Season, the lighting of any fire in the open air (e.g. not in a fireplace, barbecue unit or incinerator) is restricted and controls may be put in place on the use of 'commercially constructed barbecues'. Further, no fire shall be lit or allowed within 500 metres of any bush, scrub, forest or reserve.

WDC's mandate as a RFA comes from Section 10 of the Forest and Rural Fires Act 1977. Under the Local Government Act 2002, WDC is also responsible for controlling fire hazards.

DOC's mandate as a RFA comes from both the Conservation Act 1987 and the Forest and Rural Fires Act 1977. They are responsible for the control of fires on lands they administer, on a one kilometre buffer zone around these lands and on un-alienated Crown lands. DOC runs a 365 day, all year "Restricted Fire Season". Fire Prohibitions can also be imposed during periods of high fire risk.

The need for an integrated approach to fire management across the Parihaka and Hatea River reserves is required. A Fire Prevention and Management Plan, prepared jointly between NZFS, DOC and WDC, with significant input from Northland Forest Managers would improve current arrangements. It would require Memorandum of Understanding between the three authorities. Mapping the reserves' resources – conservation values, historic and archaeological sites, roads and access tracks, water points, visitor use areas and hazards – would greatly assist in this exercise.

The Forest and Rural Fires Act 1977 provides for 'Specially Protected Areas' to be established, with the permission of the National Rural Fires Authority. There is currently none under WDC's jurisdiction. The closest existing arrangement is the operation of a permanent Prohibited fire season for Matakohe/Limestone Island and Rabbit Island. This prohibition is to ensure protection of unique ecological values on both islands, and will remain in force until further notice. 'Specially Protected Areas' status would enhance integrated fire management of the Parihaka reserves and Parihaka Forest.

The fire danger levels in the district can reach "extreme". These extreme periods generally occur in late summer and tend not to be prolonged due to regular autumn/winter rain. With consistent rainfall, however, vegetation growth rates are high contributing to very high fuel loading in scrubland and forest areas. These areas can cause extreme fire behaviour and prove very difficult to control in times of elevated fire danger.

The threat of fire is a particular concern identified by landowners surrounding the reserves along Memorial Drive. Deliberately lit fires have destroyed regenerating bush on the western side of Memorial Drive and placed private property at risk, as witnessed in early 2006.

The establishment and maintenance of fire breaks by adjacent landowners and WDC would assist in the control of fire hazards. This does not mean a width of bare ground or earth. Instead, it means controlling the under-storey (e.g. in the short term cutting out woodys such as some, not all, of the gorse) and planting fire resistant species. The NZFS and WDC do not want people to rush out and flatten all the vegetation near their property boundaries adjoining reserve land, as this hampers regeneration of natives. WDC will provide for regeneration to occur and gradually remove eucalypts and pines which could be a fire hazard. Unless gorse is an immediate and real threat, it will not be removed as it acts as a good nurse crop. The fire services require a minimum width of 10 metres "defensible area" for fire control access on all public and private properties. This can be as lawn, as lawns tend to stop fires.

The major risks within Parihaka Forest are associated with public roads, recreational areas and illegal entry. Pursuant to Section 32 of the Forest and Rural Fires Act 1977 the WDC, in consultation with the forest managers, may restrict entry into Parihaka Forest in times of elevated fire danger. All recreational and other non-operational access to the forest would require a permit from WDC. Restrictions may be imposed at other times, by agreement between the WDC's Principal Rural Fire Officer and the forest manager, when any combination of factors indicate that entry restrictions would be a prudent fire prevention measure.

Objective – Fire Management

To reduce the threat of fire, and protect people, built structures and facilities, and the productive forest resource of the Parihaka Forest from fire.

Policies and Actions

1 The WDC, in association with NZFS and DOC, will prepare a Fire Prevention and Management Plan for the Parihaka and Hatea River reserves, including Parihaka Forest. Resources of the reserves will be mapped and included in the plan. Until completion and approval of this plan, the area will continue to be managed under the individual fire plans of the WDC, DOC and NZFS. (Emergency Management Section, Parks Division)

2 The WDC will explore further 'Specially Protected Areas' status for the Parihaka and Hatea River reserves, including Parihaka Forest. (Emergency Management Section, Parks Division)

3 The WDC will implement Open, Restricted and Prohibited fire seasons to control the lighting of fires in the open air within their areas of jurisdiction, in accordance with their Rural Fire Plan. (Emergency Management Section)

4 Restricted entry and access for recreational and non-operational activities into Parihaka Forest in times of high fire danger, or at any other times when any combination of factors indicate that entry restrictions would be a prudent fire prevention measure, may be imposed in accordance with the Forest and Rural Fires Act 1977 and WDC Rural Fire Plan. (Emergency Management Section)

5 The use of chainsaws by private individuals within the Parihaka Forest is prohibited. The collection of wood materials from the forest is limited to what can be taken without requiring a chainsaw. (Parks Division)

6 The WDC will reduce fuel loads by ongoing control of species such as pampas and gorse in fire prone areas and encourage adjacent residents to do the same. (Parks Division, Emergency Management Section)

7 Fire resistant or fire tolerant species will be used in revegetation plantings along Memorial Drive, in areas of high public use (e.g. car parks, track entrances), on ridges and on property boundaries with adjacent private land, where appropriate. (Parks Division)

8 Access tracks and fire breaks will be provided and maintained and all practicable steps taken to lessen the risk of fire especially over drier periods where the Rural Fire Authority concerned deems it to be necessary. (Parks Division, adjacent landowners)

9 During periods of high fire risk, neighbouring residents will be encouraged to maintain a 500 metre buffer from any bush or shrub within the adjacent Parihaka and Hatea River reserves. (Emergency Management Section, Parks Division, adjacent landowners)

10 The use of enclosed fuel stoves, gas cookers and portable barbecue units is not permitted within the Parihaka Forest or the Parihaka and Hatea River reserves. Due to repeated vandalism of fixed barbecue units provided by WDC in Mair Park and Whangarei Falls Scenic Reserve, these facilities will no longer be provided in the reserves. (Parks Division)

Section 7 Recreation and Tourism

7.1 Recreational Use

Mair Park, A H Reed Memorial Kauri Park and Whangarei Falls receive reasonably high levels of recreational use due to their proximity and ease of access to residential areas and the Town Basin. This tends to be of a more informal nature (e.g. walking, jogging, walking the dog), picnicking, swimming, sightseeing and use of the playground. The Hatea River Walk is extremely popular for walkers and joggers of all ages and also provides access for canoeing and kayaking on the river. The tracks leading up from the Hatea River Walk to the Parihaka summit are regularly used, particularly during the summer months.

Photo: Mair Park, Hatea River, Mount Parihaka (WDC)

Recreational use of Parihaka Forest is informal at the moment. Due to the presence of the forestry operation, the forest has not yet been formally promoted as a recreational destination. This is because production forestry has precedence over recreational use within the forest until the completion of forest harvesting activities. It is however a popular place for local people, particularly residents on or near Abbey Caves Road who often use the area for walking, running, horse riding and mountain bike riding. Orienteering is also popular, not only in the forest but also in the western reserves and along the Hatea River Walk.

7.1.1 Dogs

The Whangarei District Dog Management Bylaw 2005 states that no dogs are allowed in A H Reed reserve, Whangarei Falls Scenic Reserve and Parihaka. Parihaka is defined as 'the bush area on the eastern side of the Hatea River, bound by Memorial Drive on one side and Whareora Road on the other.' By this definition, it includes the Dobbie Track, Drummond Track, Hokianga Track and Hatea River Walk; the latter between Ewing Road and Whareora Road.

The Hatea River is a useful geographic boundary to define 'no dogs' and 'dogs allowed' areas. However, once a parallel Hatea River Walk is constructed on the western side of the river between Mair Park and Whareora Road, it is envisaged dogs will be allowed to use this track.

Mair Park is recognised as a "Dog Exercise Area", where dogs must be under continuous and effective control. This means dogs are allowed to exercise freely off the leash, but dog owners must have in his/her possession a lead or strap to restrain the dog if necessary and dogs are not allowed to come within 10 metres of the Mair Park children's' playground.

The Parihaka Forest is not mentioned in the Dog Management Bylaw. Advice received from DOC indicates there could still well be a remnant kiwi population present in Parihaka Forest. It has therefore been decided to adopt a precautionary approach towards dogs in the forest. Until such time as a re-survey for North Island brown kiwi is conducted and the results known, dogs will not be permitted in the forest. If kiwi is found, they will be temporarily re-located to Matakohe Island until the completion of forest harvesting. Once the results of the re-survey are known and discussions held between WDC and DOC, the public will be advised of the decision regarding future dog access into Parihaka Forest and signs erected to advise of the decision.

A review of the Dog Management Bylaw will be conducted in 2007. WDC's animal management contractor, Environmental Northland, and Parks Division staff currently have problems with enforcement of the bylaw, including what it means for a dog to be under 'continuous and effective control' without having to be on a lead, dogs chasing ducks and other river wildlife, children being scared by dogs rushing towards them and vandalism of signs. There also seems to be an expectation in the community, from public submissions on this management plan, phone calls and letters to staff, and staff regular inspections of its reserves, that dogs must be on a lead. The Parks Division of WDC is therefore considering changing the provisions in the Dog Management Bylaw relating to dog access in Mair Park to require dogs on a lead. No other changes to the Bylaw for dog access in the Parihaka and Hatea River reserves are envisaged.

See Section 7.3.3 for information on mountain bikes.

Objectives – Recreational Use

To provide for public use and enjoyment of the reserves consistent with the protection of their natural and cultural heritage values.

To more fully understand visitor use, numbers, characteristics, needs and expectations in order to provide for effective visitor management and improve the quality of visitor experience.

Policies and Actions

1 The WDC will conduct a comprehensive recreational use survey of the Parihaka and Hatea River reserves following the completion of forest harvesting. (Parks Division)

2 The WDC will commence visitor use monitoring at the completion of forest harvesting. This monitoring will focus on:

- Visitor numbers and their impact on the values of the reserves and on visitor experience, and
- Visitor impact on cultural sites, natural values and vulnerable sites to help determine site protection and management. (Parks Division)

3 Track counters will be installed at strategic visitor points in the forest and reserves following the completion of forest harvesting. (Parks Division)

4 Recreational access and use of the Parihaka and Hatea River reserves, *including* Hatea River Walk but *excluding* Parihaka Forest, will be based on the following criteria:

- Casual access for walking, running, picnicking and swimming will be permitted and does not require a formal permit.
- Bicycles are not permitted until WDC has secured public access and constructed a suitable track, initially along the western side of Hatea River between Mair Park and Whareora Road, for bicycles.
- Horses are not permitted.
- Motorbikes and trail bikes are not permitted.
- Motor vehicles are not permitted except for reserve management or emergency purposes.
- Dogs are not permitted in A H Reed reserve, Whangarei Falls Scenic Reserve and Parihaka to help protect the scenic and ecological values of these areas. Parihaka is defined as 'the bush area on the eastern side of the Hatea River, bound by Memorial Drive on one side and Whareora Road on the other', including the Dobbie Track, Drummond Track, Hokianga Track and Hatea River Walk. Mair Park is recognised as a "Dog Exercise Area", where dogs must be under continuous and effective control, i.e. dogs are allowed to exercise freely off the leash provided dog owners have in their possession a lead or strap to restrain the dog if necessary. Dogs are not allowed to come within 10 metres of the Mair Park children's' playground. (WDC Whangarei Dog Management Bylaw 2005). Following construction, dogs will be permitted on a parallel Hatea River Walk on the western side of the Hatea River between Mair Park and Whareora Road. WDC Parks staff will ensure signs are erected in the reserves to inform the public of provisions for access for dogs. See Policies and

Actions statement #7 below for intentions to strengthen dog control across all the reserves, including Parihaka Forest.

- Organised activities (e.g. fun-runs, orienteering, etc.) will require prior approval of the Parks Manager, WDC.
- No access will be allowed during periods of extreme fire risk.
- Recreational hunting is not permitted.

(Parks Division, Compliance Division)

See also Section 7.4: Commercial Recreation and Tourism.

5 Until the completion of forest harvesting, public access and recreational use of Parihaka Forest will be allowed provided it is compatible with the forest's productive use. (Parks Division)

6 Recreational access and use of the Parihaka Forest will be based on the following criteria:

- Casual access and use such as walking, running, orienteering, horse riding/horse trekking and mountain biking will be permitted and do not require a formal permit.
- Organised activities and events, including fun-runs, orienteering, mountain biking and horse riding, will require prior approval of the Parks Manager, WDC or delegated staff member. (See also Section 7.3: Facilities and Services, Policies and Actions statement #21.)
- As a precautionary measure to recognise there could still well be a remnant kiwi population present in the forest, dogs are not permitted until a re-survey for North Island brown kiwi is conducted and the results made public. If kiwi is found, they will be temporarily re-located to Matakohe Island until the completion of forest harvesting, and a 'no dogs' policy enforced in the forest. Once the results of the re-survey are known and discussions held between WDC and DOC, the public will be advised of the decision regarding future dog access into Parihaka Forest and signs erected to advise of the decision. (See Policies and Actions statement #7 below in this section.) (See also Section 3.5: Ecology, Policies and Actions statement #6.)
- No commercial ventures are permitted with the exception of existing commercial users who were granted approval to operate prior to 27 September 1995 (Policy adopted by WDC's Community Enterprises Committee)
- Motorbikes and trail bikes are not permitted.
- Motor vehicles are not permitted except for forest management or reserve management or emergency purposes.
- WDC will not allow any access which will place the forest at significant risk of damage.
- No access will be allowed during periods of extreme fire risk.
- Existing 'use rights' are not transferable and cease to apply when an operator stops the business should this be earlier than the period defined.
- All existing 'use rights' within the forest will cease following harvesting of the current rotation and the forest is handed over as a reserve to WDC Parks.
- No recreational hunting will be allowed. (Parks Division)

7 The Whangarei District Dog Bylaw 2005, under review in 2007, will be amended to ensure consistency with intentions of this management plan. (Parks Division, Compliance Division)

See also Section 7.4: Commercial Recreation and Tourism for information on guided walks, visitor centres.

7.2 Information, Interpretation and Education

Information, interpretation and education are critical to the delivery of quality experiences, as well as fostering an appreciation of, and caring attitude towards the reserves and their values.

The main themes for interpretation and education of the Parihaka and Hatea River reserves are considered to be:

- Cultural heritage – Maori, European, archaeological
- Native flora and fauna – in particular, if present, North Island brown kiwi, but also including kauri forest remnants, native orchids, tui, kukupa, banded kokopu and glow worms.

Parihaka has been described as the 'Hidden City' and is rich in cultural history. Like Ruapekapeka Pa site south of Kawakawa, Te Pa o Parihaka site has the potential to be an important gateway into the tikanga of Tai Tokerau. European history is also rich in the surrounding river flats associated with earlier Whangarei settlement. Parihaka is a focal viewing point into these two different cultures. From its heights, one can look outwards onto not only its physical landscape but also its cultural landscape.

Interpretation projects for Mount Parihaka in the short term are the war memorial (including a new Parihaka Lookout, upgrade of parking facilities at the top of Memorial Drive and improvements to access between the car park and memorial) and Parihaka pa (interpreting the mana of Parihaka). The WDC is working closely with the Whangarei RSA, landscape and archaeological consultants, and Maori on these projects.

Track markers have been erected along the Hatea River Walk showing an eel symbol. The eel represents the traditional significance of the Hatea River for eeling and the presence of eels today in the river.

On-site and off-site information on the Parihaka and Hatea River reserves needs to be improved. Some track markers and information boards are looking somewhat tired. In other instances, information is just not there. A series of temporary signs is suggested for the adjoining Parihaka Forest associated with its current use. These temporary signs will be replaced with permanent signs following completion of forest harvesting.

It is suggested a three-tier hierarchy of signs/information boards be developed for the western reserves as indicated below, placed at prominent entry points, track intersections and along tracks.

Welcome signs – welcoming visitors, providing site orientation, describing historical and ecological values, indicating features of interest and landmarks to help people navigate.

Interpretation signs – describing a particular feature or site, e.g. Parihaka Pa, 'Hidden City', pre-European house sites, freshwater/saltwater.

Small feature signs – scaled-down versions of the interpretation signs with particular focus on the archaeological sites in the upper track area of Mount Parihaka.

The 'Whangarei Walks' (2006) brochure contains information on the Parihaka and Hatea River reserves, Coronation Scenic Reserve and Waimahanga Walkway. It is the first of several new walks brochures for Whangarei, others signalled in the near future will be produced for Pukenui Forest/Whangarei Quarry Gardens/Barge Showgrounds and Whangarei Heads.

Objective – Information, Interpretation and Education

To enhance visitor understanding and appreciation of the natural and cultural values of the Parihaka and Hatea River reserves, and assist visitor enjoyment.

Policies and Actions

1 The WDC will provide opportunities for outdoor education/environmental learning experiences through the provision of environmental education kits and resources. (Parks Division)

2 The restoration of Parihaka Forest will be used as an opportunity to inform visitors about native forest regeneration processes. (Parks Division)

3 The WDC will prepare an interpretation plan for the Parihaka and Hatea River reserves. It will identify key themes and a range of mediums to get information out to visitors and other potential users of the reserves, and provide for a series of self-guided walks using the track network. (Parks Division)

4 The WDC, guided by tangata whenua and local historians, will explore and develop the theme of Parihaka as a 'Hidden City' and the pre-eminent mana of Mount Parihaka (te Maunga o Parihaka). (Parks Division)

5 The WDC will develop and implement a multi-tier hierarchy of signs and information boards for Parihaka and Hatea River reserves, initially concentrating on the western reserves, and following forest harvesting extended into Parihaka Forest. (Parks Division)

6 An 'eel' symbol will be used for on-site and off-site information to identify the Hatea River Walk. (Parks Division)

7.3 Facilities and Services

Facilities and services presently provided in the Parihaka and Hatea River reserves tend to cater for passive and informal recreational use (Figure 5). This includes walking tracks, signs, interpretation panels and viewing platforms. Roads and access tracks associated with forestry activities in Parihaka Forest are beneficial for recreational users, principally mountain bikers and horse riders. The Hatea River Walk presently extends from Vale Road upstream to Whangarei Falls Scenic Reserve.

The provision of facilities and services in the future is expected to focus on continued passive and informal recreational use.

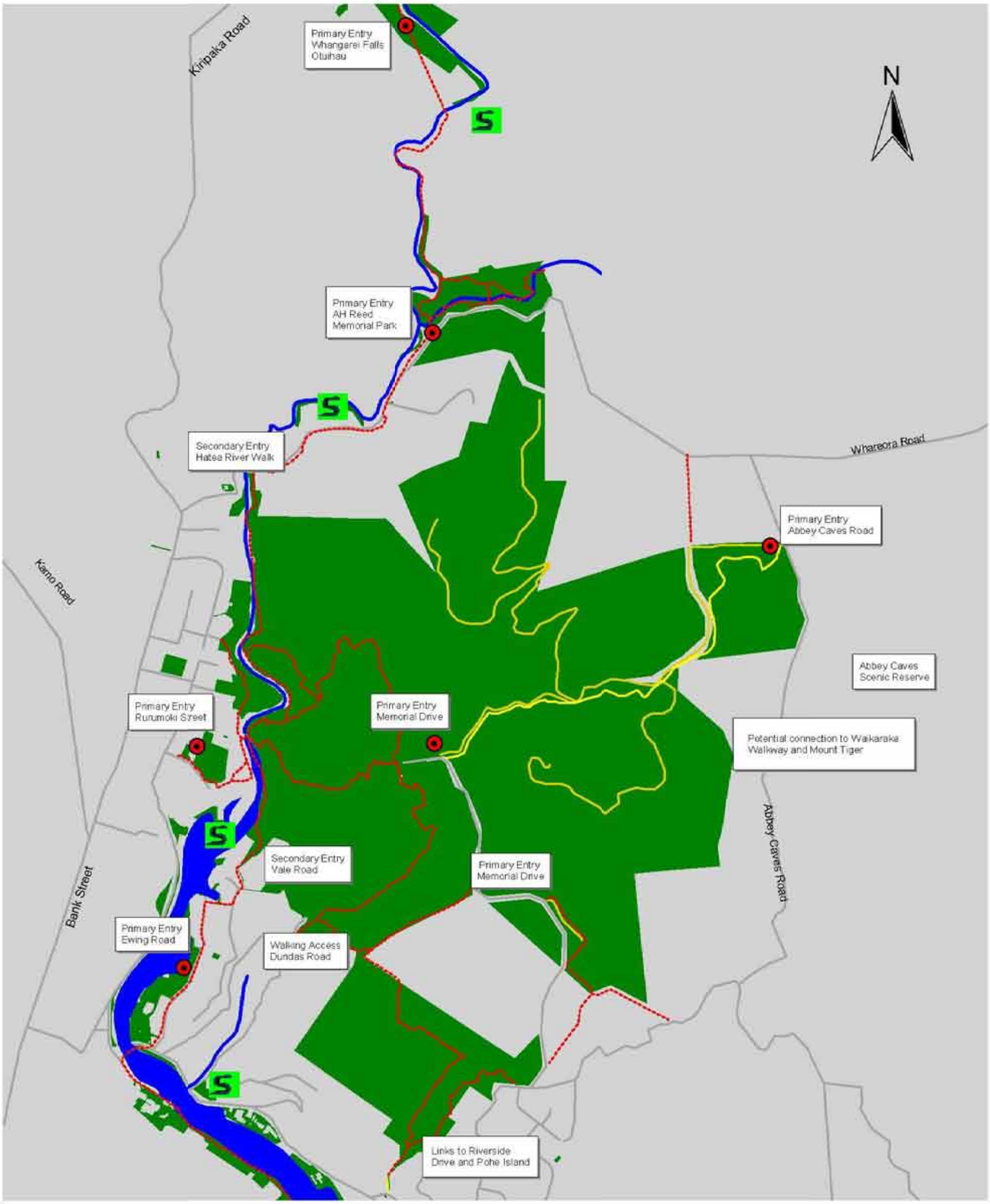
WDC recognises the popularity of the Parihaka and Hatea River reserves as a recreational resource and in particular the need to provide for safe recreational access in the reserves. In order to continue to provide for public use, some activities will need to be confined or separated to minimise environmental and social impacts of the activities on each other and on visitor use and enjoyment. Signage will be used to clearly identify permitted activities and direct use into suitable areas.

Figure 5 shows the existing tracks through the Parihaka and Hatea River reserves. This management plan provides for the establishment of a network of multi use and single use tracks for walkers, mountain bikers and horse riders in Parihaka Forest. Their proposed alignments are not shown on Figure 5: Recreational Facilities and Services, as this is the task of the proposed informal group of key interests (recreation, forestry and native vegetation restoration) to be set up in 2007 (see Section 10: Community Involvement, Policies and Actions statement #2). The informal group will also assist WDC in the preparation of detailed Policies on mountain biking and horse riding access in Parihaka Forest.

Recognising the Access Policies are not in place yet, in the interim the following guiding principles are strongly recommended for all recreational users and WDC in the development and use of recreational tracks in Parihaka Forest.

- The planning for use of recreational tracks is consistent with and attempts to further promote the objectives of this management plan.
- Planning should utilise spatial and temporal separation and thoughtful design of infrastructure to minimise potential user conflicts, resource degradation and wildlife disturbance.
- Stakeholders contribute to recreational opportunities and these are encouraged through appropriate planning, design and development processes.
- Inappropriate planning, development and use of recreational tracks are discouraged.
- The construction of recreational tracks must have the prior approval of the Parks Manager.
- The International Mountain Biking Association Standards are followed in the building of mountain bike tracks.

Figure 5: Recreational Facilities and Services



Legend

- Primary Entry
- Tuna (Eel)-Symbol for Hatea River Walk
- Vehicle Tracks
- Walking Tracks

WHANGAREI DISTRICT COUNCIL

Creating the ultimate living environment

0 500 1000

Scale in Metres

December 2006

- Tracks are used only for the Parks Division approved intended purposes, as signalled in this management plan, and people are aware of the purposes.
- Care for the natural environment to enhance natural vegetation succession and restorative process is observed by all users.
- Personal care and responsibility, common sense, respect and a courteous approach towards other users are observed by all recreational users.
- Recreation is an enjoyable experience resulting from a freely chosen activity in a natural setting.
- Factors that determine enjoyment are highly individualised and result in large part from the degree of fit between individual motivations and expectations, the setting and the recreation opportunities provided.
- Clearly signposted information on permitted track users will be erected.
- All promotional materials should clearly identify the type of experience opportunities available at Parihaka. Promotion will focus on the establishment of a network of multiple use and single use tracks for walkers, mountain bikers and horses. The WDC does not support the promotion or creation of a Parihaka Mountain Bike Park, inferring exclusive or primary use of the forest by a single recreational user group.
- Fire safety is paramount; no fires are to be lit or explosives taken into or set off.

For information on proposed works as they may affect archaeological sites, see Section 4.3: Archaeology.

7.3.1 Development of Entry Points

A number of entry points into the Parihaka and Hatea River reserves will be developed, based on visitor use and physical environment (see Figure 5). Primary entry points (e.g. Whangarei Falls, A H Reed reserve, Abbey Caves Road, Memorial Drive) will provide a focus for visitor activity, serving as the main entrances into the reserves. They will be developed to include a car park, picnic area, toilets and major signposting and information. A single car park facility on Abbey Caves Road for visitors of both the Parihaka reserves and Abbey Caves Scenic Reserve is a possibility. This facility could include vehicle parking (including parking for horse floats), toilets, a horse trough and mountain bike wash facilities, information boards and associated signage. Secondary entry points (e.g. Dundas Road, Whareora Road at the Hatea River Bridge) may include such facilities as signposting and a walking track. Their development as secondary rather than primary entry points recognises limitations such as their physical location, topography, site security, land tenure and land availability (e.g. adjacent private property). Development of secondary entry points is of lower priority than primary entry points.

7.3.2 Walking Tracks

The majority of the tracks specified below are described in more detail in the WDC's 'Whangarei Walks' (2006) brochure. They are also shown on Figure 5: Recreational Facilities and Services.

Parihaka (Western) Reserves

The reserves track network on the western side of Mount Parihaka comprises the following tracks ranging from 1.4 kilometres to 2.2 kilometres in length. They require a moderate level of fitness and suitable footwear.

- Drummond Track – Mair Park footbridge to top of Memorial Drive – 1,750 steps, 1.4 km, 40 mins.
- Dobbie Track – includes the Pa site and provides access between Hatea River and the Parihaka Memorial – 2 options: a) via Hokianga Track – 2,375 steps, 1.9 km, 50 mins., or b) via Ponga Track – 2,750 steps, 2.2 km, 60 mins.
- Ross Track – Dundas Road to Parihaka lookout – 1,810 steps, 1.45 km, 40 mins.
- Goetzee Track – Whareora Road to Parihaka Forest – 500 m

A H Reed Memorial Kauri Park

The Elizabeth, McKinnon and Alexander Tracks provide public walking access within A H Reed Memorial Kauri Park. All are generally easy walking, though the McKinnon Track is a steep climb up to the top of the waterfall and has a rougher surface. The Alexander Track provides access for those with wheelchairs or pushchairs. The canopy walkway is also accessible by wheelchairs and pushchairs. More direct access for such users to the canopy walkway is provided from the middle car park on Whareora Road.

- Elizabeth Track – Whareora Road (lower car park) to Paranui Falls, and McKinnon Track to Clapham Road (upper car park) – 1,106 steps, 885 m, 30 mins.
- Elizabeth Track – Whareora Road (lower car park) to canopy walkway – 600 steps, 490 m, 15 mins.
- Elizabeth Track – Whareora Road (lower car park) return trip via canopy walkway and Alexander Track – 1,112 steps, 890 m, 35 mins.

Whangarei Falls

A loop track of 1 km distance links the Boundary Road car park with the falls, zigzagging down steep slopes on both sides of the falls to the lower bridge. Leaving the car park, the paved track leads to two nearby viewing platforms at the top of the falls. When the Hatea River levels are moderate, concrete stepping stones can be used to cross the river above the falls. The paved track on the opposite side of the river leads to a third viewing platform. A gentle graded track, zigzagging down the slope through bush, takes visitors to a footbridge, grassed area and plunge pool at the base of the falls. Care may be required with the steps. The footbridge crosses the river. At this point, visitors may return to the car park via a circular track, or follow the river downstream on the Hatea River Walk to A H Reed Memorial Kauri Park.

The Whangarei Falls reserve is also a popular spot for picnicking, swimming and bush walking.

Hatea River Walk

The Hatea River Walk comprises metalled all-weather tracks on both sides of Hatea River. They are gently sloping-to-flat, and suitable for all ages. The Walk is signposted at regular intervals with an eel (tuna) symbol (see Figure 5). The longest track section is currently between Vale Road and Whareora Road on the eastern side (left bank) of the river. (A track link between Ewing Road and Vale Road is under construction and is expected to be completed in 2007.) A shorter track on the right bank extends from Wairere Avenue to Rurumoki Street (Mair Park).

The most recently constructed portion of the Walk links A H Reed Memorial Kauri Park and Whangarei Falls Scenic Reserve (2,300 steps, 1.84 km, 22 mins.). It passes through a mix of farmland and bush, crossing the Hatea River on a swing-bridge about halfway between the two reserves. The track is marked with frequently spaced markers or poles (with the eel/tuna symbol) as it passes through the private farmland. Walkers are asked to please respect the rights of the private landowner who has kindly given permission for walkers to cross their land.

It is desirable that as future subdivisions occur on land adjacent to Hatea River, on its true right bank, downstream of Whangarei Falls, that esplanade reserves will be created allowing for public access along the river instead of alongside the busy roads. It is suggested cyclists could be catered for in the future on the western side of the Hatea River, initially between Mair Park and Whareora Road. Public access along the river behind the Aquatic Centre (true left bank) will be upgraded in 2006-07 as part of the Aquatic Centre upgrade project.

In the short term, the Hatea River Walk will be extended downstream across the 'no vehicles' bridge to link with the Town Basin and on to Hihiaua Reserve at the mouth of the river. Longer term, the WDC will seek to secure access along the river upstream of Whangarei Falls, linking in with the suburbs of Tikipunga and possibly Gillingham Estate (Gillingham Road/Bush Haven Drive).

Parihaka Forest and links

From the Parihaka Memorial car park, visitors can walk down Memorial Drive some 50 metres to the forestry road into Parihaka Forest. Access to the forest can also be gained from Abbey Caves Road. A series of walking tracks will be established in the forest, using the N.Z. Standards handbook, "Tracks and Outdoor

Visitor Structures" as a guide. This handbook identifies 'Path', 'Short walk' and 'Walking track' grades, which will be used in Parihaka Forest (see Figure 5 and Table 2 following).

Table 2 Walking Tracks

Grade	Condition	Suitable User Group
W1 (Path)	Well formed easy tracks, usually high standard of track surface and structures, maximum grade is 7^0 (1 in 8), minimum width is 1.2 metres.	All ages and most walking abilities.
W2 (Short walk)	Well formed, up to 1 hour return easy walking, maximum grade is 10^o (1 in 5.7) not including steps, width 0.75 metres – 2.0 metres.	Suitable for most ages and fitness levels.
W3 (Walking track)	Well formed, up to 20% of total length may have short wet/muddy sections or uneven/rough sections, up to a full-day return, maximum grade is 15^o (1 in 3.7) not including steps, width 0.75 metres – 2.0 metres with reductions for short sections and lower grade.	

The proximity of Parihaka Forest to the surrounding Parihaka and Hatea River reserves, and Abbey Caves Scenic Reserve, provides an opportunity to formally link these areas together by extending the existing track networks up into the forest.

Noting that the Goetzee Track is a multi use track with many issues, it is discussed separately as Section 7.3.6 below.

Members of the public seeking a greater challenge have also established informal tracks in the reserves. These are damaging to vegetation and their proximity to formal tracks leads to confusion and can impact on maintenance resources.

7.3.3 Mountain Biking

Mountain biking is an activity which benefits physical fitness, and has huge potential to assist in the growth of tourism and the economy of Whangarei. The Parihaka Mountain Bike Club estimates a potential $2 million/year injected into the local economy if the proposed mountain bike tracks for Parihaka Forest were developed half as good as Rotorua's track network. (Rotorua, who hosted the 2006 World Mountain Bike Championships, is now rated as one of the top three destinations for mountain biking in the world.) The Club adds, however, it takes about 5-8 years after construction until the real economic results are seen as word of mouth gets around the mountain bike community and the tracks promote themselves.

On the basis of the number of registered riders in clubs, mountain biking in New Zealand in the last 12 months (2005-06) has increased 300%. Locally, an estimated 5,000 people own mountain bikes, and of these, approximately 2,000 are regularly riders (2006 figures). (Data from Mountainbike Whangarei). Possibilities for Whangarei in the future include 700 entrants per race in an enduro series at $35/head, with the potential to hold two races each year. In addition to 6-8 hour endurance events, New Zealanders also enjoy two hour national events. The majority of mountain bikers, however, are casual, fun, family riders, heading out into the countryside for exercise and fresh air.

The Parihaka Forest offers considerable potential for the development of a formal venue for mountain biking. It is of sufficient size that a range of mountain biking tracks and trails could be developed catering for most levels of experience and expertise. Such a facility would provide a sustainable long-term attraction which could be promoted as part of the range of recreational and tourism opportunities offered within the Whangarei District. Experience has shown with the development of mountain biking areas in other parts of

the country (e.g. Whakarewarewa Forest Park, Rotorua; Woodhill Forest, Auckland; and Makara, Wellington), that cyclists will travel large distances to ride and compete in these areas.

In a written agreement between the WDC and the Parihaka Mountain Bike Club (2002), the Club agreed to pull out of the forest compartments just prior to the commencement of logging. This is in line with production forestry having precedence over recreational use until the completion of forest harvesting activities. (See Section 5.2: Parihaka Forest, and following Policies and Actions.)

In early 2004, WDC gave approval to the Parihaka Mountain Bike Club for the use of an area of approximately 30 hectares, to the right of Forest Access Road in Parihaka Forest, to form exclusive use mountain bike tracks. These tracks were used in June 2004 for the Northland Secondary School Teams Championships.

With the re-commencement of harvesting of pines in early January 2006, many of the temporary mountain bike tracks were obliterated (as expected). The Parihaka Forest, however, is open for public recreational use during Sundays and public holidays over the period of forest harvesting (1 October – 30 April approximately), until expected completion of harvesting at the end of April 2010. See Section 5.2: Parihaka Forest for more detail on the harvesting activities.

In association with the Parihaka Mountain Bike Club, the WDC is proposing the following graded system of tracks in Parihaka Forest to cater for different levels of experience (Table 3). They are loosely modelled on the mountain bike grading system used by the Kennett Brothers.

Table 3 Mountain Biking Tracks

Grade	Condition	Suitable User Group
B1*	Very Easy. Fairly flat, wide and smooth tracks or gravel roads.	All first-time riders.
B2	Easy. Gentle climbs and easily avoidable obstacles such as rocks and potholes.	Most beginners will still enjoy these rides.
B3	Moderate. Challenging riding with steep slopes and/or tricky obstacles, possibly on narrow tracks with poor traction.	Average riding experience and some fitness required.
B4	Difficult. A mixture of long steep climbs, loose track surfaces and difficult or dangerous obstacles to avoid or jump over. Some sections will be easier to walk.	Experienced riders.

* No tracks of Grade B1 have been identified for Parihaka Forest, in view of its topography.

Mountain bikes are not permitted on the tracks on the western side of Parihaka (i.e. Drummond Track, Hokianga Track and Dobbie Track), the Hatea River Walk, A H Reed reserve, or Whangarei Falls Scenic Reserve. However, the WDC is keen on securing continuous public access along the western side of the Hatea River, initially between Mair Park and Whareora Road, through future subdivision or purchase of private land to provide for mountain bikes and bicycles along the river.

7.3.4 Horse Riding

Horse riding is a recreational activity that experiences similar problems to mountain biking in terms of suitable dedicated venues for a range of skill levels. Parihaka Forest provides opportunities for horse trekking and exercising, rather than formal eventing, as the latter is catered for at Pony Clubs and other venues around Whangarei, particularly Barge Showgrounds.

Figure 5 shows indicative horse riding tracks in Parihaka Forest. Two grades of horse riding track are proposed, as indicated in Table 4 below ('H' is 'Horse').

Table 4 Horse Riding Tracks

Grade	Condition	Suitable User Group
H1	Easy bridleway. Metal road, gentle grade, good road width.	Learners or less experienced riders.
H2	Moderate bridleway. Clay, grass or forest surface, steeper grades, narrow width on some sections.	More experienced riders.

7.3.5 Orienteering

Parihaka Forest provides opportunities for orienteering. This can either be undertaken by individuals, clubs or as part of school outdoor education activities. Orienteering requires little in the way of facilities and is largely reliant on the skills of participants. The WDC would support local orienteering clubs, in association with schools, to develop a series of orienteering maps for the forest.

7.3.6 Goetzee Track

In February 1993, the former Department of Lands and Survey, Whangarei, gave the Whangarei City Riding Centre permission to construct a track on the department's land, connecting A H Reed Kauri Memorial Park with Parihaka Forest. A grant was given to the Riding Centre towards the cost of the track by Marsden Point Oil Refinery Company. (The Goetzee Track was named after a prominent Refinery staff member.) Since its construction, the Riding Centre has endeavoured to maintain the Goetzee Track using its own limited funds and user donated labour.

The Goetzee Track serves as a major recreational track connection between key reserves. It is used by walkers, runners, orienteers, trampers, horse riders, and more recently, mountain bikers. Horse riding club interests estimate 1500 horse rider visits per year on the track.

Its current condition poses a major safety issue for all recreational users. Problems include poor drainage, collapsed drains, scouring, narrow and uneven surfaces, unstable ground and collapsed steps. In winter it is muddy, slippery and often too dangerous to use. Alternative routes along Whareora Road are unsafe due to the speed of the traffic. Attention is needed to not only the track, but also weed control, landscaping and signs.

With an increasing number of user groups on the Goetzee Track, issues of conflicting use are occurring. These include downhill mountain bikers meeting horse riders approaching from the opposite direction. The terrain is steep, there are sharp corners on the track and there is variable impact on the existing track between walkers, horses and mountain bikes. One possibility to reduce conflict, enhance visitor enjoyment and reduce environmental damage is the construction of a second parallel and adjacent track. Horse riders would be separated from other users, with their corresponding track built and maintained to the standard required for horses. Users groups could be asked to contribute towards the on-going maintenance costs of these tracks.

Maintenance of the Goetzee Track is complicated by two agencies administering land on which the track is located; WDC manages the smaller upper portion as part of its Parihaka Forest, whilst DOC administers and manages the lower and larger portion as part of its Parahaki Scenic Reserve. Discussions have commenced continue between WDC and DOC for the control and management of the scenic reserve to be transferred to WDC - see Section 8.3: Land Acquisition for further information.

7.3.7 Outdoor Environmental Education Facility

The proximity of Parihaka Forest to Whangarei City provides an opportunity for schools and community groups to become actively involved in the forest restoration programme as well as being able to use the area for recreational activities. Learning outside the classroom is an experience that most children enjoy but one which is often difficult to undertake due to lack of facilities and cost restrictions. There is considerable scope within Parihaka Forest to develop an area as an outdoor environmental education facility.

There is a number of logging skid sites in the lower parts of the forest, which could be easily modified to accommodate a basic facility. Ideas include a small visitor centre, such as that established within the Karori Wildlife Sanctuary (Wellington), or a camp with water, toilets and enclosed barbeque units. The use of the camp would be on a prior approval and booking basis and numbers would be limited each stay. Access to the camp in the summer months would be dependant on the level of fire risk within the forest and the logging programme. Winter access may be limited by the state of access tracks and roads.

7.3.8 Supporting Facilities

The existing lookout at the summit of Parihaka is looking rather old and tired. It does not meet occupational health and safety standards with respect to safety rails. It is scheduled for replacement in the short term. Together with a new lookout structure, car parking, public access and signage will also be improved in partnership with tangata whenua. Enhancement of signage and interpretation will focus on the significance of the whole site including the war memorial.

The Mair Park playground is scheduled for an upgrade in the next few years. Existing seating and picnic tables will remain. A barbeque unit installed down by the river, subsequently vandalised in 2004, will not be replaced.

The entrance from Whareora Road car park into A H Reed Memorial Kauri Park is via a bridge across the Wai Koromiko Stream. A smaller bridge across the same stream on the Alexander Track has been built from the recycled timber of the former Oakura bridge. Also in the reserve is a 72 metre-long canopy walkway, at 14 metres above ground level. It spans the Wai Koromiko Stream and its associated valley. The structure is of treated pine timber, and won a 'Highly Commended – Functional Excellence" Award in the 2002 Origin Timber Design Awards. Opened in 2001, the walkway provides the visitor with a bird's eye view into the canopy and surrounding bush. Throughout the reserve, at the lower car park entrance and on the canopy walkway are interpretive panels describing the park's history and the ecology of the forest.

The WDC acknowledges the support of the Whangarei Native Forest and Bird Protection Society and the Reed family with plantings, pest control and construction of the small, recycled timber bridge in the A H Reed reserve.

Constructed in 2003, a swing-bridge across the Hatea River helps to link the A H Reed reserve with the Whangarei Falls Scenic Reserve to the north.

It is proposed to improve facilities for car parking and walking access into Parihaka reserves from Vale Road, with associated buffer planting along shared property boundaries with private residents. Residents have requested that this entrance into Parihaka be a secondary, rather than a primary, entry point.

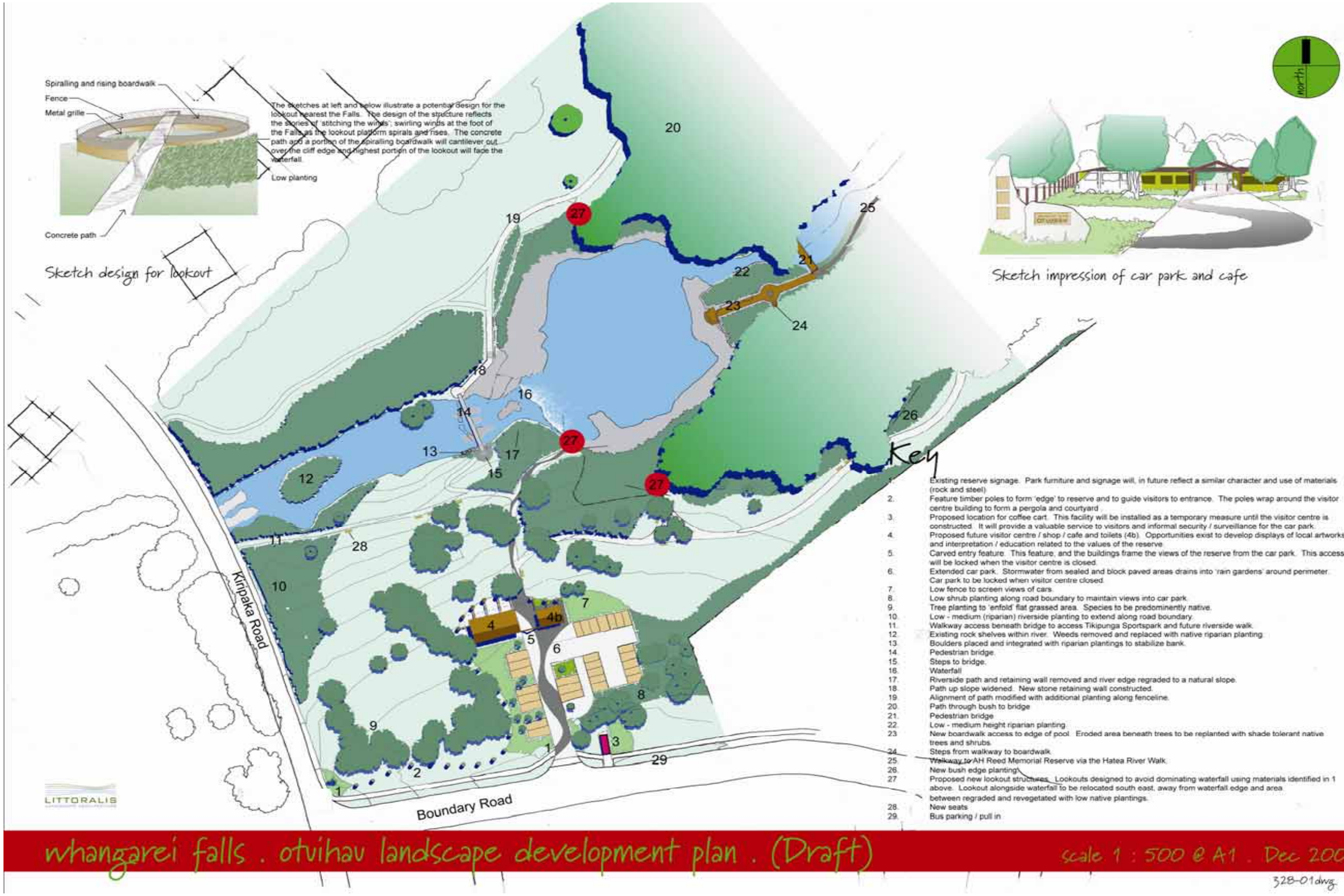
An upgrade of toilet facilities during the lifetime of this management plan will see new facilities constructed at Whangarei Falls, the top of Memorial Drive and A H Reed reserve, and an upgrade of present facilities at Mair Park.

7.3.9 Whangarei Falls Scenic Reserve

The WDC recognises Whangarei Falls (Otuihau) as a principal tourist attraction of the district, together with A H Reed reserve, Parihaka and the Town Basin. The reserve has high visitor numbers. Unfortunately, vandalism and crime are a big problem, and the reserve has a rather 'tired and shabby' look to it.

To address these issues, WDC has recently (November 2005) produced a Landscape Development Plan for Whangarei Falls (see Figure 6). The Landscape Development Plan, as noted, is a draft plan. It outlines the proposed improvements to the reserve, but is flexible in terms of specific location and shape of these improvements and must be interpreted as such.

Figure 6: Whangarei Falls Scenic Reserve (Otuihau) – Landscape Development Plan



Community involvement has been a key factor in drawing up the Landscape Development Plan and will continue in its implementation. It will include increased informal surveillance, the running of a temporary coffee cart by Ngati Hau from Pehiaweri Marae, assistance with artistic design and site interpretation by Ngati Hau and on-going assistance with plantings. This initiative has helped to enhance the reserve. Other key elements of the Landscape Development Plan are a future visitor centre/café/souvenir shop complex, toilets, improvements in reserve signage, extended car park, carved entry feature, pedestrian bridge at the top of the falls (close to the existing stepping stones), new lookout structures, low planting along selected strips along road boundaries, walking access beneath the Hatea River bridge on Kiripaka Road to Tikipunga Sports park and improved site security. The visitor centre will be a single-storey building. Its focus will be on interpretation of the values of the Whangarei Falls Scenic Reserve, the Hatea River and Parihaka Pa. Staff in WDC's Parks Division and Community Development Division will liaise with respect to site security.

A commercial abseiling operation, run during the summer months, adds recreational value to reserve visitors. It operates down the cliffs on the eastern side of the Hatea River above the falls. This operation has resource consent from WDC.

7.3.10 Security

Reports of vandalism, excessive noise, vehicle break-ins and other 'undesirable activities' occurring at reserve entrances, including Rurumoki Street, top of Memorial Drive, Abbey Caves Road and Whangarei Falls, have been received by WDC. In response, WDC's Community Development Section has commenced the carrying out of Crime Prevention Through Environmental Design (CPTED) audit and data collection exercises for these areas. These exercises also involve looking at security cameras, street lighting, pedestrian access and vehicle parking. Improvements to areas adjacent to the reserves is also assisted through WDC's Roading Division's Footpaths budget or Minor Safety Works budget (e.g. footpaths, speed humps, speed restrictions, signs). Residents are encouraged to continue reporting incidents to the Police, taking digital camera shots and noting car registration numbers for the Police.

Security of Pukenui Forest has been identified as an issue. During harvesting of the Parihaka Forest, Northland Forest Managers Ltd. will be responsible for ensuring safety of their machinery and equipment, and advising members of the public of harvesting activities as they affect public access into the forest. (See also Section 5.2: Parihaka Forest.) As stated earlier, during the harvesting period, public access and recreational use of the forest must be compatible with the forest's productive use.

Controlling recreational use in Parihaka Forest on a long term basis will be done via locked gates on Memorial Drive, Abbey Caves Road and where the Goetzee Track meets the forestry road into Parihaka Forest. At present, keys for the locked gates are given out by WDC Parks to the Parihaka Mountain Bike Club and Parihaka Riding Club for access and use of the forest. It is desirable for this arrangement to continue. Locked gates will also deter motor bikes/trail bikes and public vehicles from entering the forest. To assist mountain bikers, stiles will be installed alongside the gates to enable bikes to be carried over and into the forest. Individuals and families who do not belong to a club and wish to gain horse riding access into the forest will be advised through on-site signage to contact the Parihaka Riding Club to arrange for the gates to be unlocked. This is not an ideal situation for general public use, but the WDC desires to prevent motor bikes/trail bikes and public motor vehicles from entering the forest. Organised activities will continue to require a permit from WDC Parks.

Objective – Facilities and Services

To provide for a range of appropriate visitor facilities and services consistent with the protection of the natural and cultural values of the reserves and compatible with the productive use of Parihaka Forest.

Policies and Actions

1 The following primary entry points will be developed as a focus for visitor activity, and will include facilities such as public toilets, vehicle parking, landscaping, and major signposting and information.

- Boundary Road (Whangarei Falls)
- Whareora Road (A H Reed Memorial Kauri Park)
- Rurumoki Street (Mair Park)

- Memorial Drive (Parihaka Lookout/Memorial and Lower forest gate)
- Abbey Caves Road
- Ewing Road (Eliott 'Reserve') (Parks Division, Roading Division)

2 The following entrances will be developed as secondary entry points, and may include facilities such as a small car park (up to six car parking spaces), landscape and/or buffer planting along shared public/private property boundaries, track markers and signs.

- Whareora Road (Hatea River bridge)
- Wairere Avenue (Lovatt Crescent) (excluding vehicle parking)
- Dundas Road (walking access only)
- Vale Road
- Bottom of Memorial Drive (between Nos. 3 and 5 giving access into Mackesy Bush). (Parks Division, Roading Division)

3 Recreational access, opportunities and facilities for people with disabilities and special needs will be provided for in the reserves as far as possible. (Parks Division)

4 Parihaka Forest will be formally established as a recreational use area for informal recreation including walking, running, mountain biking, horse riding and orienteering, in a manner as to ensure compatibility with forest harvesting activities, and with the on-going restoration of native vegetation. (Parks Division)

5 The WDC, with the assistance of key recreational, forestry and conservation interests, will prepare a Policy on Mountain Biking Access to Parihaka Forest. The Policy will provide guidance on:

- General access (including temporary closure)
- Establishment/re-establishment of tracks subsequent to forestry operations
- Identified mountain bike tracks
- Track building and modification
- Track maintenance
- Specific events access. (Parks Division)

6 The WDC, with the assistance of key recreational, forestry and conservation interests, will prepare a Policy on Horse Riding Access to Parihaka Forest. (Parks Division)

7 The WDC, in association with recreational clubs, will establish a network of multi use and single use, clearly signposted, tracks for walking, mountain biking, horse riding and orienteering in Parihaka Forest, consistent with the on-going restoration of native vegetation. Subject to consultation and agreement of affected parties, tracks and roads in the forest may be named to reflect local culture and history. NB: The timing for the development of the track network is subject to harvesting of the pine forest. (Parks Division)

(See Section 10: Community Development, Policies and Actions statement #2 – community group to assist the development of Parihaka Forest.)

8 *The New Zealand Handbook: Tracks and Outdoor Visitor Structures, 2004* (New Zealand Standard SNZ HB 8630:2004) will be used by WDC for the management of public tracks and outdoor visitor structures in the Parihaka and Hatea River reserves. The International Mountain Bike Association track construction best practice guidelines will be used in the development of mountain bike tracks. (Parks Division)

9 The clearance of native vegetation will be minimised in the maintenance and/or re-routing of existing recreational tracks and for the formation of new recreational tracks. (Parks Division)

10 Recreational tracks will aim to avoid environmentally and culturally sensitive sites, e.g. erosion-prone areas, clay banks supporting native orchids, urupa. (Parks Division)

11 The Hatea River Walk will be maintained to a high standard. Bicycles, mountain bikes and horses are not permitted on the existing Hatea River Walk. The WDC will continue to seek the establishment of esplanade reserves and/or agreements with private landowners along the Hatea River to enhance and extend the Hatea River Walk. This includes the construction of a future parallel Hatea River Walk on the western side of the river between Mair Park and Whareora Road to provide for bicycles. Permitted use of the Hatea River Walk will be clearly signposted. (Parks Division)

12 Excepting the Hatea River Walk, all other tracks will be maintained to reflect terrain and usage. Information will be conveyed to users on the degree of difficulty of each track. All tracks will be maintained to minimise damage to natural and cultural heritage features. (Parks Division)

13 The Drummond Track, Hokianga Track, Ponga Track, Dobbie Track and Ross Track will be restricted to foot access only. Bicycles and mountain bikes are not permitted on these tracks. Some loop tracks and informal tracks will be closed. Improved signage will be installed at track ends and intersections. (Parks Division)

14 Walkers, horse riders and mountain bikers are permitted on the Goetzee Track. Recreational users are urged to use common sense and respect for other users on the track. (Parks Division)

15 The Abbey Caves Road entrance to Parihaka Forest will be formally developed as a major access point for mountain biking, horse riding and walking activities. Facilities will include a vehicle park, toilets, horse trough and mountain bike wash area. (Parks Division)

16 A network of walking, horse riding and mountain biking tracks linking the Parihaka and Hatea River reserves with nearby reserves and forest areas (e.g. Abbey Caves, Mt. Tiger, Waikaraka Walkway, Pohe Island) will be developed and maintained by the WDC in association with recreation clubs. Walking track linkages with more distant reserves (e.g. Pukenui Forest, Whangarei Quarry Gardens and Coronation Scenic Reserve) will be investigated. (Parks Division)

17 Any unformed access ways may be developed as and when deemed desirable to provide improved access to and through the reserves, consistent with the protection of the natural and cultural values of the reserves. (Parks Division, Roading Division)

18 The WDC will investigate, as a low priority, the establishment of an outdoor environmental education facility within Parihaka Forest. (Parks Division)

19 The WDC will redesign the existing Parihaka lookout structure and improve associated car parking, public access and signage as a high priority. (Parks Division)

20 A ‘pack in pack out’ policy will be applied with respect to rubbish. Bins will only be provided at key entry areas on the perimeter of reserves. Signs will be erected where required. (Parks Division)

21 Organised non–commercial recreational use of the reserves for special events (e.g. mountain-bike events, picnics etc.) will be permitted in accordance with WDC Parks procedures for the booking of reserves. (Parks Division)

22 The system of locked gates into Parihaka Forest will continue with keys given out by WDC to recreational clubs for access and use of the forest. Stiles will be installed alongside the gates to assist mountain bikes accessing the forest. (Parks Division)

23 The WDC will carry out facilities, access and planting improvements to the Whangarei Falls Scenic Reserve as contained in the Whangarei Falls – Otuihau Landscape Development Plan, November 2005. The WDC acknowledges that resource consent under the Resource Management Act 1991 will be required for the proposed visitor centre, and will comply with these requirements. (Parks Division)

24 The WDC will continue to improve security in the Parihaka and Hatea River reserves and associated car parks.

7.4 Commercial Recreation and Tourism

Commercial recreation and tourism opportunities will not be discounted. The determination of appropriate activities will be based on their potential environmental impact, compatibility with permitted non-commercial recreational activities and their value in welcoming visitors and interpreting on-site resources.

Operators currently take people on guided walks of the bush and glow worms (at night). Parihaka Forest and the adjacent reserves would be a great venue for commercially promoted events such as mountain biking or triathalons. A small visitor information and interpretation centre, focusing on cultural and ecological values of Parihaka, is a possibility. However, the likes of 'pie carts' in Mair Park, restaurants or gondolas are not considered suitable due to their potential to degrade the natural and cultural values of the reserves.

A Policy adopted by WDC in 1995 stated that no commercial ventures are permitted in Parihaka Forest, excepting existing commercial users who were granted approval to operate prior to 27 September 1995. Therefore, if WDC wishes to pursue other commercial operations in Parihaka Forest, such as suggested in the above paragraph, it will first need to amend its 1995 decision. The Parks Division of WDC has recognised that a Whangarei District Concessions Policy, covering all parks and reserves in the district, is required rather than a piecemeal approach for individual parks and reserves.

A proposed future visitor centre/shop/café at Whangarei Falls Scenic Reserve has the potential to include displays of local artworks and interpretation material for sale. A commercial lease or licence would be arranged between WDC and a concessionaire for the operation of this business. (See also Section 7.3.9: Whangarei Falls Scenic Reserve for further information on proposed related facility development on the reserve.)

There is opportunity for local iwi to take part in commercial activities relating to visitor hospitality, guided visits and cultural interpretation and education.

Objective – Commercial Recreation and Tourism

To ensure any commercial recreation and tourism operations in the Parihaka and Hatea River reserves are managed to ensure minimal impact on the environment, protection of the natural and cultural values of the reserves, compatibility with existing permitted non-commercial recreational activities and protection of the quality of visitor experience.

Policies and Actions

1 The WDC will prepare a Concessions Policy for all of its parks and reserves, including Parihaka and Hatea River reserves. This document will re-examine the WDC policy decision of 1995 concerning permitted commercial ventures in Parihaka Forest. Until this policy is completed and approved, the 1995 decision will remain in force and the following interim provisions will be put in place. (Parks Division)

2 Proposals for commercial recreation and tourism operations in the Parihaka and Hatea River reserves, including Parihaka Forest, must meet the following criteria.

- Have a clear ability to minimise or negate any negative impact on the environment
- Have a strong environmental or educational focus where bush and river areas are involved.
- Involve high quality interpretation.
- Utilise the services of a trained local guide – e.g. for guided walks.
- Have the ability to include tikanga Maori where the proposed operation involves Mount Parihaka or the Hatea River. (Parks Division)

3 The WDC will put in place a commercial lease or licence for the commercial operation of any proposed future visitor centre. (Parks Division)

4 Monitoring and regular inspections of operations to ensure compliance with relevant statutory and bylaw provisions will be carried out by the WDC. (Parks Division)

Section 8 Protection of Future Interests

8.1 Reserve Status

As previously identified, the reserves covered by this management plan are contained in more than 40 separate land parcels, with various types of land classification, or in many cases, just held by WDC with no reservations. In some cases, legislation under which they were originally obtained is no longer suitable for future management. This situation is one of confusion and fragmentation.

In the interests of achieving integrated management and formally recognising the whole area as a key natural area it is proposed that scenic reserve status be sought for all of the reserves under the Reserves Act 1977. Any future parcels of land acquired on the boundaries of any of these reserves would also be classified in the same manner (see Section 8.3: Land Acquisition).

Scenic reserve status is considered most appropriate as it places equal importance on the protection of natural values (e.g. scenic interest, beauty, natural features or landscape) as it does on the use and enjoyment of these reserves by the public. Any development of open portions of the reserve for amenities and facilities, where they are necessary to enable the public to obtain benefit and enjoyment from the reserve, must be compatible with the protection of the natural or scenic values. Similarly, for the management and protection of historic or archaeological features present in the reserve. (Section 19, Reserves Act 1977). There may be times when the WDC will exercise its powers under Section 55 of the Reserves Act 1977, and prohibit access to parts of the reserve(s) while they are being planted and/or regeneration is occurring.

Appendix 1 provides information on the land status of every parcel of land within the network of Parihaka and Hatea River reserves. For each land parcel, it gives the legal description, area, current status and process required for reserve classification.

As previously indicated in Section 5.2.1: Native Forest Restoration, it is intended to replant the forest in native species following the harvesting of the present exotic tree crop. At this point in time, it is suggested that a change in land status of the forest, from "tree-planting purposes" to scenic reserve. The forest would then complement the adjoining Parihaka reserves. Noting the present requirements of vesting the Parihaka Forest in WDC and associated conditions, WDC would need to go through several steps for the land to be classified as a scenic reserve under the Reserves Act 1977, these being detailed in Appendix 1. While this management plan can only provide guiding principles for Parihaka Forest inclusion of this land recognises its role in the integrated management of Parihaka[3].

Objective – Reserve Status

To ensure all land parcels comprising the Parihaka and Hatea River reserves have appropriate statutory reserve protection.

Policies and Actions

1 The WDC will, classify all parcels of land comprising the Parihaka and Hatea River reserves (including Parihaka Forest) as Scenic Reserve under the Reserves Act 1977, in recognition of their natural and associated cultural heritage values and to enable improved integrated management of the Parihaka reserves. This will involve the following actions.

- For Section 84, 89, 90, 91, SW 87 and W 93, Parahaki Parish, request, on the completion of the forest harvesting programme, Land Information New Zealand (LINZ) to revoke the current vesting by Order in Council of the Parihaka Forest for "tree-planting purposes", then request DOC to set apart, classify and name the area as scenic reserve, and re-vest it in WDC for that purpose.

[3] Land which is not subject to the Reserves Act can be included in a Management Plan but the plan has no statutory weight for that land and Council cannot be bound by the terms of the act (Reserves Act Guide, 1999).

- For Section SE 88, Parahaki Parish, request DOC to change the classification to scenic reserve and name.
- For all other parcels of land listed in Appendix 1 of this management plan, follow the reserve classification process stated in Appendix 1.

(Parks Division in liaison with DOC and LINZ)

2 The management of the reserves, such as Lovatt Sanctuary Area, Mair Park and Dobbie Park, will comply with the provisions of existing gift or deed agreements and wishes of the families concerned. (Parks Division)

3 Future parcels of land acquired on or close to the existing Parihaka and Hatea River reserves, which are intended to be managed in a similar manner to the existing reserves, will be classified as scenic reserve. (Parks Division in liaison with affected parties)

8.2 Whangarei District Plan

The majority of the Parihaka and Hatea River reserves, excluding Parihaka Forest, fall within the Open Space Environment within the Whangarei District Plan. The Open Space Environment covers land owned by WDC, DOC or other organisations for recreational and/or conservation purposes.

Open space is important for both community well-being and environmental health. Recreational open space provides for a wide range of social and recreational opportunities, while open space for conservation purposes preserves and protects landscape and ecological values.

Several reserve land parcels fall within the Countryside Environment within the District Plan. These include Mair Park, Dobbie Park and the Crown-owned block on which the Goetzee Track is situated. Countryside Environment status is more applicable to land supporting such activities as pastoral farming, horticultural, quarrying and forestry. This category is considered less suitable for land owned by WDC or the Crown and used for recreational or conservation purposes. Accordingly, it is intended to bring all land with the Parihaka reserves, excluding Parihaka Forest, under the Open Space Environment provisions of the District Plan.

Parihaka Forest, noted as Countryside Environment in the Whangarei District Plan, should be treated differently. As the Countryside Environment category is more permissive than Open Space Environment towards production forestry, this category should remain in place until the completion of forestry activities (2012 approximately). A change to Open Space Environment should then be activated, consistent with Council's resolution of 1997 to allow Parihaka Forest to revert to native bush.

The Whangarei District Plan also recognises the west-facing and south-facing bush covered slopes of Parihaka, Mair Park, A H Reed reserve and Whangarei Falls as Significant Ecological Areas. The Hatea River is noted as an Esplanade Priority Area.

The WDC will soon be preparing a Structure Plan for the Parihaka area, under its Urban Growth Strategy, and a Rural Residential Environment policy statement to be incorporated into the Whangarei District Plan.

Objective – Whangarei District Plan

To ensure all land parcels comprising the Parihaka and Hatea River reserves have appropriate Environment and Resource status in the Whangarei District Plan.

Policies and Actions

1 A Plan Change to the Whangarei District Plan will be promoted seeking to rezone all parcels of land comprising the Parihaka and Hatea River reserves, excluding Parihaka Forest, as within the Open Space Environment. (Policy and Monitoring Division)

2 Upon the completion of the forest harvesting programme for Parihaka Forest, the WDC will promote a Plan Change to the Whangarei District Plan seeking to recognise Parihaka Forest within the Open Space Environment. (Policy and Monitoring Division)

3 The WDC will seek to protect significant ecological areas within the Parihaka and Hatea River reserves, as defined by DOC, through the Whangarei District Plan.

8.3 Land Acquisition

It is the intention of the WDC that where land comes up for sale on the boundaries of the Parihaka and Hatea River reserves, and it would enhance the values of these reserves, that consideration will be given to purchasing or acquiring that land and including it within the Parihaka and Hatea River reserves network. Additional land was recently added to Mackesy Bush and Ross Park (end of Vale Road) in this fashion.

Where purchase or acquisition is not the best option, alternatives such as lease or covenanting of land may be explored. Covenants can be established as part of subdivision under the RMA or through the QEII National Trust. The WDC has high regard for open space covenants managed by the QEII National Trust on private land.

Expansion of the reserved area will provide additional opportunities for public use and enjoyment as well as expanding the buffer and potential habitat for native flora and fauna.

The Parahaki Scenic Reserve, located on the southern side of Whareora Road opposite the A H Reed reserve, is Crown owned, managed on behalf of the Crown by DOC. The majority of the Goetzee Track, which links Parihaka Forest with Whareora Road, is situated on this parcel of land. In 1998, the vesting of ownership of the reserve from DOC to WDC was being considered. Subsequent advice received from DOC declared that the land was subject to Maori land claims. As it was Government policy that land subject to Treaty claims could not be permanently alienated from Crown ownership, instead of the proposed vesting, DOC asked WDC to accept an appointment to control and manage the reserve, pursuant to Section 28 of the Reserves Act 1977. The request was considered by WDC in early 2001, when it was decided "that this item lay on the table". No further progress has been made. Parks Division staff of WDC believes this matter should be re-visited and Council acceptance requested again for the control and management of the reserve. This decision would improve consistency of management along the Parihaka/A H Reed/Whangarei Falls corridor for both recreational and conservation (e.g. pest control) purposes.

Objective – Land Acquisition

To provide for land purchase, lease or covenanting to enhance protection of the physical, cultural and public recreational values of the Parihaka and Hatea River landscape.

Policies and Actions

1 The WDC may negotiate where appropriate for the acquisition, purchase, lease, covenanting, right-of-way or gifting of land under public or private ownership adjacent or near the Parihaka and Hatea River reserves. (Property Division, Parks Division)

2 The WDC will give priority to the purchasing, leasing or covenanting of the following areas of land, where a negotiated agreement with the landowner(s) is secured.

- Land in bush to the north of Lovatt Sanctuary Area and south of Whareora Road.
- Stream margin and private land along the western side of Hatea River between the lower end of Hatea Drive and Whareora Road.
- Private land to the south of Ross Park and to the western side of Memorial Drive – that portion in native vegetation.
- Private land extending in a corridor from Eureka Place Recreation Reserve, northwards crossing Abbey Caves Road to join with Parihaka Forest on the east side of Memorial Drive. (Property Division, Parks Division)

3 Justification for purchasing or acquiring or land to add to the Parihaka and Hatea River reserves will be based on one or more of the following general criteria would:

- Protect important natural, scenic and cultural heritage values of the existing reserves.

- Enhance the public use and enjoyment of the reserves.
- Improve public access to or use of the reserves in an area where this would be desirable.
- Enhance or add to existing recreational opportunities.
- Help to rationalise the geographic boundaries of the reserves.
- Benefit future protection and management of the reserves. (Parks Division)

4 WDC will resume its discussions with DOC to have WDC appointed to control and manage Allotment 156, Parish of Parahaki, referred to as Parahaki Scenic Reserve and including the Goetzee Track, and manage the land contiguous with the adjacent Parihaka Forest and nearby A H Reed Kauri Memorial Park. (Parks Division in consultation with DOC)

8.4 Leases and Licenses

An informal agreement existed between WDC and the previous forest managers, Watson and Mason Forestry Consultants, to provide for grazing in Parihaka Forest. This agreement has since lapsed, and there is no intention for future grazing in the forest.

There are four masts on Mount Parihaka. One, and a hut, is owned by Telecom Mobile Communications Ltd. by way of a ground lease from WDC. Local radio also transmits from the mast. A second mast, together with a concrete building, is owned by the Whangarei Amateur Radio Society. Both the mast and the building are on a ground lease from WDC. The building is used by TV3 and TV4 for transmission equipment. The third, and highest mast, is owned by WDC and is an emergency power generator. This mast and its associated built in hut at the base of the mast are used by BCL for FM radio and TV1, TV2, TV3 and Radio New Zealand. A proposal is currently being considered to provide transmission space on BCL's antenna for a local community television service. A fourth mast, located further down Parihaka, houses radio station transmission equipment for local radio.

Existing leases within the Parihaka and Hatea River reserves should be honoured, but when they come up for renewal should be reviewed to determine whether or not the conditions of the lease are sufficient to protect the natural and cultural heritage values and visitor safety.

Objective – Leases and Licenses

To ensure that commercial leases and licenses do not compromise natural and cultural heritage values, are compatible with permitted recreational activities and where relevant are in keeping with the original intent/deed of gift of land within the reserves.

Policies and Actions

1 No further grazing will be permitted in Parihaka Forest. (Property Division)

2 The WDC will recognise and continue to provide for the existing communications facilities on Mount Parihaka. Proposed upgraded or new communication facilities will be assessed in accordance with the provisions of this management plan, preference being given to locating either in the same location or close to existing facilities. (Property Division)

3 The WDC will ensure commercial leases and licenses are kept under review. (Property Division)

4 The WDC will review on a regular basis the technical requirements for telecommunication structures on Mount Parihaka. (Property Division)

8.5 Public Safety, Health and Risk Management

The Health and Safety in Employment Act 1992 requires that workers and visitors in a work area be advised of any hazards to safety or health that may exist. The Parihaka Forest will be a working forest until 2010

approximately. As a result, council staff, volunteers and the public will need to be kept informed of forestry operations.

Major recreational user groups or clubs are encouraged, for the safety of their members, to have a health and safety plan for their activities on WDC parks and reserves land, and to liaise with WDC Parks in its preparation and implementation.

Objective – Public Safety, Health and Risk Management

To take all reasonable steps to protect visitors and workers from natural or human induced hazards.

Policies and Actions

1 The WDC will comply with the provisions of the Health and Safety in Employment Act 1992 and relevant industry standards to prevent harm to others arising out of work activities. (Parks Division, Property Division)

2 Any activities being undertaken which may pose a risk to public safety will be notified by way of public notice in newspapers and by signage at track and car park entrances. (Parks Division, Property Division)

3 Except with the prior permission of the WDC, the carrying or use of firearms or any other weapons or instruments of a dangerous nature are prohibited within the reserves (including Parihaka Forest). (Parks Div.)

Section 9 Surrounding Land Uses

This section of the management plan recognises land uses and activities adjacent to the Parihaka and Hatea River reserves that may influence or affect the management of the reserves. It aims to highlight matters where the WDC wishes to enhance its relationship with adjacent landowners to help protect the values of the reserves.

Residential areas bound most of the reserves and many residents can gain informal access into the reserves through the backs of their properties. The eastern side of Parihaka Forest is bounded by farmland, which is increasingly being subdivided into rural residential blocks.

The effective management of activities along the margins of the reserves and in their catchments is necessary to ensure that they do not adversely affect the natural and recreational values of the reserves themselves. Activities with potential to impact negatively on the reserves include refuse or garden waste dumping, garden plants escapes, fence and building encroachments, stormwater discharges, the establishment of informal tracks, vandalism, fires and the release of unwanted pets. It is essential that positive neighbourly relations are fostered between WDC and its adjoining property owners.

Objectives – Surrounding Land Uses

To work with adjacent landowners to the mutual benefit of the Parihaka and Hatea River reserves and their surrounds.

To minimise adverse external impacts on the reserves.

Policies and Actions

1 Roading, infrastructure and facility maintenance and upgrades in the vicinity of the reserves will have due regard for the protection of the natural and cultural heritage values of the reserves. (Parks Division, Roading Division)

2 The WDC will continue its efforts to establish and maintain positive neighbourly relations between itself and adjacent property owners.

3 The WDC will seek co-operation through on-going consultation and education, and where necessary, take action, on any detrimental activities along the reserve margins such as refuse dumping, vandalism, fires or fire hazards, garden plants escapes, informal tracks, fence and boundary encroachments, and illegal discharges. (Parks Division)

4 The WDC, through the Resource Management Act and its Whangarei District Plan, will support appropriate subdivision, use and development of the slopes of Parihaka and its surrounds to protect the natural and cultural values of Parihaka. (Policy and Monitoring Division, Resource Consents Division, Parks Division)

Section 10 Community Involvement

Community participation and co-managed initiatives are integral to the concept of a sustainable open space network. There are a number of areas where the community will be encouraged to become actively involved in the management of the Parihaka and Hatea River reserves. These include weed and animal pest control (e.g. use of Weedbusters Groups), native species monitoring and revegetation, development of recreational facilities (e.g. horse riding and mountain biking) and site interpretation. Identifying and carrying out research could be another task where community participation would assist WDC.

It is suggested that a 'Friends of Parihaka and Hatea River ', or 'Kaitiaki o Parihaka me Hatea', or similar volunteer group made up of representatives from the various users, adjoining landowners, tangata whenua, interest groups and organisations (including DOC) be established. The WDC would remain outside of the 'Friends of Parihaka and Hatea River' group, but would offer its technical expertise and other resources as needed. In order to attract external funding the group would need to register itself either as an incorporated society or as a charitable trust. This management plan, once approved by WDC, would guide the activities of the group. The group would report to WDC via its Parks Division.

There are issues to grapple with as Parihaka Forest changes from exotic forest to native bush, and recreational use increases accordingly. The WDC recognises the community will play an important role in the future use of Parihaka Forest, and accordingly suggests the establishment of an informal group comprising key interests (forestry, recreation, native vegetation restoration, Maori) to assist the integrated development of the forest.

Tangata whenua are considered active and equal partners under the Treaty of Waitangi, and in legislation such as the Resource Management Act 1991, Local Government Act 2002 and Conservation Act 1997. They have been actively involved in the development of this management plan and WDC intends to continue to develop this relationship, particularly with respect to the management of archaeological sites, telling stories of the past and explaining the significance of the area, the re-vegetation of Parihaka Forest and the environmental monitoring programme. It is intended to see iwi involved through their artistic efforts, interpretation and interaction with visitors in whatever appropriate to them.

Objective – Community Involvement

To maintain and improve opportunities for Maori and the wider community to participate in the restoration and management of the Parihaka and Hatea River reserves.

Policies and Actions

1 Subject to community support, the WDC will pursue the formation of a 'Friends of Parihaka and Hatea', 'Kaitiaki o Parihaka me Hatea', or similar community group, to assist in the restoration and management of the Parihaka and Hatea River reserves. (Parks Division)

2 As a priority, the WDC will set up an informal group comprising key interests - including recreational, forest management, native vegetation restoration and Maori – to assist with the integrated development of the Parihaka Forest and Goetzee Track. (Parks Division)

3 The WDC will support Maori in developing their capacity as kaitiaki (guardians) of Parihaka. (Parks Division)

4 The WDC will work with and encourage community groups in carrying out restoration projects in the Parihaka and Hatea River reserves as identified in this management plan. (Parks Division)

5 The WDC will encourage community participation in research projects on the reserves as identified in this management plan. (Parks Division)

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Appendices

Photo: Mair Park, Hatea River, Mount Parihaka (WDC)

Appendix 1 Land Titles and Status

Land Title	Legal Description, area	Current Reserves Act status
Parihaka Forest *Note: Sections 84, 89, 90, 91, SW 87 and W 93 Parahaki Parish are either not recognised or classified under the Reserves Act. While this management plan can only provide guiding principles for these portions of Parihaka forest inclusion of this land recognises its role in the integrated management of Parihaka[4].*	Sections 84, 89, 90, 91, SW 87 and W 93 Parahaki Parish. GN 1926, p1110, p3301. (178.8898 ha) Section SE 88, Parahaki Parish, SO 6164. GN 1977, p 1815. (4.2517 ha)	Crown land, vested in the Council in trust for Tree Planting Purposes, subject to conditions. Crown land, vested in the Council in trust as a reserve for Local Purpose (Tree Planting). Subsequently classified under the Reserves Act 1977 as such by GN 1983, p1384.
Whangarei falls Scenic Reserve	Parts Allot 48 and 49, Whangarei Parish, CFR NA537/143. (4.0469 ha) Part Allot 106, Whangarei Parish, CFR NA540/220. (6829 m²) Lot 1 Deeds Plan 266, CFR NA550/85 (2.8454 ha)	Classified Scenic Reserve by GN 1980, p20. Classified Scenic Reserve by GN 1980, p20. Classified Scenic Reserve by GN 1980, p20.
A H Reed Kauri Memorial Park Scenic Reserve	Allot N17, Parahaki Parish, SO 3583. (All GN 16399) (8.0532 ha) Lot 7 DP 156114, CFR NA93B/233. (975 m²)	Classified Scenic Reserve by GN 1979, p2224. Classified Scenic Reserve, NZG 2008, p1645.
Harold Menzies Scenic Reserve	Lot 7 DP 35202, CFR NA1119/37. (4856 m²) (subject to trust conditions)	Classified Scenic Reserve, GN 1982, p2715.
Lovatts Santuary Scenic Reserve	Pt Parahaki Native Reserve, CFR NA13D/1308. (11.6347 ha) Pt Parahaki Native Reserve, CFR NA6C/357. (11.1177 ha)	Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645.
Mair Park Scenic Reserve	Lot 4 DP 314561, CFR 57661. (2254 m²) Lot 4 DP 163785. CFR NA98D/172. (1112 m²) Lot 5 DP 188854, CFR NA117D/802. (830 m²) Lot 3 DP 107859, CFR NA60D/640. (128 m²) Lots 1 & 3 DP 29387, CFR NA729/228. (1.9247 ha) Lot 2 DP 29387, CFR NA729/227. (2550 m²)	Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG

[4] Land which is not subject to the Reserves Act can be included in a Management Plan but the plan has no statutory weight for that land and Council cannot be bound by the terms of the act (Reserves Act Guide, 1999).

	DP 28904, CFR NA721/55. (7411 m²) Pt Allot 2, Parish of Whangarei. CFR NA526/19. (3.0301 ha) Lots 6 & 7 DP 23827, CFR NA707/6. (3389 m²) Lot 3 DP 26522, CFR NA703/268. (8718 m²) Lot 11 DP 49343, CFR NA52B/600. (6349 m²) Allot 138, Parish of Whangarei, CFR NA16D/853. (1.4669 ha)	2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2009, p1354. Classified Scenic Reserve, NZG 2009, p1354.
Dobbie Park Scenic Reserve	Pt Parahaki Native Reserve, ML 1095A. CFR NA542/108. (49.5208ha) Pt Parahaki No 1 Block, CFR NA542/39. (2.9946 ha) Pt Parahaki No 1 Block & part Parahaki Native Reserve, CFR NA542/37. (3.0579 ha)	Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645.
Drummond Park Scenic Reserve	Pt Parahaki Native Reserve, CFR NA774/288. (9.5101 ha) Part Parahaki No 1 Block, CFR NA58B/29. (1.8399 ha) Pt Parahaki Native Reserve, CFR NA58B/28. (4.4258 ha) Lot 2 DP 102173. (2450 m²)	Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645.
Ross park Scenic Reserve	Pt Parahaki No 3 Block, CFR NA774/100. (36.4217 ha)	Classified Scenic Reserve, NZG 2008, p1645.
Mackesy Bush	Lots 1 & 2 DP 18256 & part DP 17205, CFR NA801/63. (34.0113 ha) Lot 4 DP 91627, CFR NA48A/591. (1.5074 ha) Lot 6 DP 54613, CFR NA52B/599. (5038 m²) Lot 37 DP 47270, CFR NA1844/23. (8810 m²) Section 1 SO 70822, CFR 38776. (4.8942 ha)	Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645. Classified Scenic Reserve, NZG 2008, p1645.
Whareora Road Scenic Reserve	Lot 4 DP 96725, CFR NA56B/656. (7.9010 ha)	Classified Scenic Reserve, NZG 2008, p1645.

NOTE: Land Information New Zealand (LINZ) advise that only the name of the mountain has been corrected from Parahaki to Parihaka. The legal descriptions of land parcels which appear on the Computer Freehold Register (Certificate of Titles) remain unchanged.

Appendix 2 Legislation and Policy

Resource Management Act 1991

The stated purpose of the Resource Management Act (RMA) 1991 is to promote the sustainable management of natural and physical resources. Supporting principles cover Matters of National Importance (Sec. 6), Other Matters (Sec. 7) and Treaty of Waitangi (Sec. 8). The Act requires the preparation of regional policy statements, regional plans and district plans to assist in the implementation of the Act's stated purpose and principles.

Whangarei District Plan

The majority of the Parihaka and Hatea River reserves, including the Parihaka Forest, are noted in the Whangarei District Plan as Countryside Environment. The remainder is noted as Open Space Environment. Within the Countryside Environment there is a wide range of traditional rural activities. These include pastoral use (beef farming is predominant), quarrying and forestry. The Open Space Environment covers land owned by WDC, DOC or other organisations for recreational and/or conservation purposes. Open space is important for both community well-being and environmental health. Recreational open space provides for a wide range of social and recreational opportunities, while open space for conservation purposes preserves and protects landscape and ecological values.

Other relevant District Plan provisions for the management of reserves are included under themes such as Amenity Values, Tangata Whenua, Water Bodies, Heritage Buildings and Sites, Landscape, and Indigenous Vegetation and Habitat.

Where some of the Parihaka and Hatea River reserves are currently noted as Countryside Environment, the WDC will seek to have these altered to Open Space Environment by way of a District Plan Change (see Section 8.2).

Resource Management Amendment Act 2003

The maintenance of indigenous biodiversity is an increasing issue both nationally and regionally. As part of a number of initiatives to improve biodiversity management, the Amendment Act has introduced changes to the RMA to make regional councils expressly responsible for:

"The establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity".

The Regional Policy Statement for Northland sets out the territorial authorities who are responsible for specifying objectives, policies and methods for the control of the use of land to maintain indigenous biological diversity. For example:

Section 23.4, Method of Implementation 1: "Include appropriate policies, methods and other provisions in District Plans controlling the adverse effects of subdivision, use, development and protection of land in order to protect significant indigenous vegetation and significant habitats of indigenous fauna and in order to maintain general ecosystem health and indigenous biodiversity..."

Local Government Act 2002

The Local Government Act 2002 provides for local authorities to promote the social, economic, environmental and cultural well-being of their communities through a sustainable development approach. All local authorities are required to prepare Long Term Council Community Plans (LTCCP) to guide the way councils and others will operate over the years ahead. Community involvement is essential in identifying Community Outcomes in the LTCCP. For the Whangarei district, the following Community Outcomes have been identified (2004 consultation process).

- A community which enjoys and treasures its natural and cultural values.
- A district which is safe and crime free.
- A district with growing business and employment opportunities.

- A community which is healthy and educated.
- A district with lots of community facilities and programmes for all ages.

The objectives of this management plan will need to tie in to the Community Outcomes.

Councils are also required to prepare Annual Plans which outline council's activities over the coming financial year and the funds required to carry out these activities. This management plan, through the setting of objectives and policies for the Parihaka reserves, may influence the contents of WDC's Annual Plan and budget.

Te Tiriti o Waitangi

The Treaty of Waitangi Act 1975 and its amendment of 1985 provide for the hearing of Maori grievances dating back to 1840 by the Waitangi Tribunal. Maori land claims are lodged with the Tribunal against the Crown.

We acknowledge the place of Te Tiriti o Waitangi in the management and development of the Parihaka and Hatea reserves, and will respect any future relevant Waitangi Tribunal decisions.

We note, further, the following legislative requirements on the Crown and local government with respect to the Treaty of Waitangi and interests of Maori more generally.

- Sections 6 (e) - relationship of Maori to culture, traditions, etc.., 7 (a) – kaitiakitanga, and 8 – taking account of the principles of the Treaty, of the Resource Management Act 1991.
- Section 4 of the Local Government Act 2002 – take appropriate account of the principles of the Treaty of Waitangi, and maintain and improve opportunities for Maori to contribute to local government decision-making processes.

Open Space Strategy (WDC)

The WDC's Open Space Strategy, 2001 recognises Parihaka, A H Reed Kauri Memorial Park and Whangarei Falls Scenic Reserve, together with other areas such as Pukenui Forest/Whau Valley catchment and Mt Tiger, as important green space surrounding the central urban area. They are seen as an integral part of the city's identity, bringing a sense of 'wilderness' within close reach. The hillsides form a backdrop to most views and are widely visible. A prevailing cover of indigenous vegetation further strengthens the 'wilderness' image of the green space of Whangarei. These green space areas have conservation, landscape, recreation and cultural values.

The Open Space Strategy supports the development of Parihaka as a Destination Park within the Whangarei District, recognising its proximity to the City centre, well-developed connections and access points. Its strengths and opportunities have been identified as:

- Protection of historic Maori sites
- Having well-developed connections and access points
- Protection and enhancement of wildlife habitat, ecological value of reserves
- Development of walking tracks and visitor facilities.

Whangarei Falls is also seen as a Destination Park.

A review of the Open Space Strategy, 2001, is expected to be conducted in 2007-08.

Appendix 3 Native Vegetation of the Parihaka Reserves (excluding Parihaka Forest)

This list has been compiled by Parks Division staff of WDC from the following sources.

- A survey undertaken by L. Forester & W. Holland (DOC) and G. Mullooly (WDC) in November 2000.
- An unnamed survey of the Parihaka reserves between Memorial Drive and Hatea River in January 1979.

Names have been updated from Brownsey and Smith-Dodsworth (2000).

No detailed survey information is available for A H Reed Kauri Memorial Park or Whangarei Falls Scenic Reserve.

Names are listed in alphabetical order (where Maori and English are given, English has been used to determine order) within each Group.

Maori Name, Common Name	Botanical Name
Ferns	
Bracken	*Pteridium esculentum*
Mangemange, Bushman's mattress	*Lygodium articulatum*
(No common name)	*Loxsoma cunninghamii*
Tarawera, Button fern	*Pellaea rotundifolia*
Climbing shield fern	*Rumohra adiantiformis*
Common maidenhair	*Adiantum cunninghamii*
Heruheru, Crepe fern	*Leptopteris hymenophylloides*
Fork fern	*Tmesipteris elongate*
Fork fern	*T. lanceolata*
Mokimoki, Fragrant fern	*Microsorum scandens*
Giant clubmoss	*Lycopodium deuterodensum*
Rahurahu, Gully fern	*Pneumatopteris pennigera*
Hanging spleenwort	*Asplenium flaccidum*
Moku, Hen and chicken fern	*Asplenium bulbiferum*
Hound's tongue	*Microsorum pustulatum*
Kidney fern	*Trichomanes reniforme*
Para, King Fern	*Marattia salicina*
(No common name)	*Loxsoma cunninghamii*
Kiokio	*Blechnum novae-zelandiae*
Lance fern	*Blechnum chambersii*
Lance fern	*Blechnum membranaceum*
Leather leaf fern	*Pyrossia eleagnifolia*
Mamaku	*Cyathea medullaris*
Pig fern, Lace fern, Scented fern	*Paesia scaberula*

Maori Name, Common Name	Botanical Name
Piripiri	*Hymenophyllum demissum*
Rasp fern	*Doodia media*
Rosy maidenhair fern	*Adiantum hispidulum*
Shaking brake fern	*Pteris tremula*
Shining spleenwort	*Asplenium oblongifolium*
Ponga, Silver tree fern	*Cyathea dealbata*
Small kiokio	*Blechnum procerum*
Tangle ferns	*Gleichenia sp.*
Thread fern	*Blechnum filiforme*
Thread fern	*Blechnum fraseri*
Umbrella fern	*Sticherus flabellatus*
Waewaekoukou	*Lycopodium volubile*
Wheki	*Dicksonia squarrosa*
	Lycopodiella cernua
Gymnosperms	
Hall's totara	*Podocarpus hallii*
Kahikatea	*Dacrycarpus dacrydioides*
Kauri	*Agathis australis*
Matai	*Prumnopitys taxifolia*
Miro	*Prumnopitys ferruginea*
Rimu	*Dacrydium cupressinum*
Tanekaha	*Phyllocladus trichomanoides*
Totara	*Podocarpus totara*
Dicotyledons	
Aka	*Metrosideros perforata*
Akepiro	*Olearia furfuracea*
Rangiora, Bushman's friend	*Brachyglottis repanda*
Akakura, Carmine rata	*Metrosideros carminea*
Centella	*Centella uniflora*
Creeping cudweed	*Gnaphalium gymnocephalum*
Hangehange	*Geniostoma rupestre* var. *ligustrifolium*
Heketara	*Olearia rani*
Houpara	*Pseudopanax lessonii*
Whauwhau paku, Five finger	*Pseudopanax arboreus*
Kanuka	*Kunzea ericoides*
Karaka	*Corynocarpus laevigatus*

Maori Name, Common Name	Botanical Name
Karamu	*Coprosma lucida*
Karamu	*Coprosma rhamnoides*
Karamu	*Coprosma robusta*
Karamu	*Coprosma spathulata*
Karapapa	*Alseuosmia quercifolia*
Kiekie	*Freycinetia banksii*
Kowhai	*Sophora microphylla*
Kohekohe	*Dysoxylum spectabile*
Kohurangi (nationally threatened)	*Brachyglottis kirkii*
Koromiko sp.	*Hebe sp.*
Kumarahou	*Pomaderris kumeraho*
Horoeka, Lancewood	*Pseudopanax crassifolium*
Large-leaf mahoe	*Melicytus macrophyllus*
Mangeao	*Litsea calicaris*
Mamangi	*Coprosma arborea*
Manono	*Cordyline australis*
Manuka	*Leptospermum scoparium*
Mapou	*Myrsine australis*
Putaputaweta, Marble leaf	*Carpodetus serratus*
Mingimingi	*Leucopogon fasciculatus*
Mingimingi	*Cyathodes juniperina*
Native lobelia	*Lobelia anceps*
Neinei	*Dracophyllum latifolium*
Nertera	*Nertera dichondraefolia*
Taurepo, New Zealand gloxinia	*Rhabdothamnus solandri*
Northern rata	*Metrosideros robusta*
Parataniwha	*Elatostema rugosum*
Pate	*Schleffera digitata*
Kawakawa, Pepper tree	*Macropiper excelsum*
Pigeonwood	*Hedycarya arborea*
Pikiarero	*Clematis foetida*
Pomaderris	*Pomaderris phylicifolia* var*. ericifolia*
Puawhananga	*Clematis paniculata*
Rata piki	*Metrosideros fulgens*
Raurekau	*Coprosma grandifolia*
Red pondweed	*Potamogeton cheesemanii*
Rewarewa	*Knightia excelsa*

Maori Name, Common Name	Botanical Name
Kareao, Supplejack	*Ripogonum scandens*
Taraire	*Beilschmiedia tarairi*
Tauhinu	*Pomaderris phylicifolia var. ericifolia*
Tawa	*Beilschmedia tawa*
Tawheowheo	*Quintinia serrata*
Ti kouka, Cabbage tree	*Cordyline australis*
Ti Ngahere, Forest cabbage tree	*Cordyline banksii*
Toropapa	*Alseuosmia linariifolia and many hybrids*
Toru	*Toronia toru*
Towai	*Weinmannia silvicola*
White maire (serious decline)	*Nestegis lanceolata*
Mahoe, Whiteywood	*Melicytus ramiflorus*
Willow-leaved maire	*Mida salicifolia*
Monocotyledons	
Cutty grass	*Carex sp.*
Cutty grass	*Gahnia setifolia*
Dwarf bog rush	*Schoenus maschalinus*
Green hood orchid	*Pterostylis alobula*
Kauri grass	*Astelia trinervia*
Kiekie	*Freycinetia baueriana*
Native grass	*Oplismenus hirtellus*
Nikau	*Rhopalostylis sapida*
Onion orchid	*Microtis sp.*
Onion orchid	*Microtis parvifolia*
Orchid	*Caladenia bartletti*
Orchid	*Caladenia chlorostyla*
Orchid	*Orthoceras novae-zelandiae*
Orchid	*Pterostylis agathicola*
Orchid	*Pterostylis banksii*
Orchid	*Pterostylis trullifloia*
Orchid	*Thelymitra aff. longifolia*
Orchid	*Thelymitra carnea*
Orchid	*Thelymitra longifolia*
Orchid	*Thelymitra pauciflora*
Orchid	*Thelymitra pulchella*
Orchid	*Thelymitra x. dentata*
Pakihi rush	*Baumea teretifolia*

Maori Name, Common Name	Botanical Name
Rush	*Schoenus tendo*
Sundew orchid	*Drosera peltata*
Tree orchid	*Earina mucronata*
Turutu	*Dianella nigra*
Sedge	*Schoenus apogon*

Appendix 4 Native Vegetation of Parihaka Forest

Compiled from a field survey undertaken by L. Forester & W. Holland (DOC) and G. Mullooly (WDC) in November 2000.

Maori Name, Common Name	Botanical Name
Ferns	
Bracken	*Pteridium esculentum*
Clubmoss	*Lycopodiella cernua*
Common maidenhair	*Adiantum cunninghamii*
Epiphyte on tree fern trunks	*Tmesipteris elongata*
Epiphyte on tree fern trunks	*Tmesipteris lanceolata*
Gully fern	*Pneumatopteris pennigera*
Hanging spleenwort	*Asplenium flaccidum*
Hound's tongue	*Microsorum pustulatum*
Kiokio	*Blechnum novae-zelandiae*
Leatherleaf fern	*Pyrossia elaegnifolia*
Mamaku	*Cyathea medullaris*
Mangemange	*Lygodium articulatum*
Pig fern, Lace fern, Scented fern	*Paesia scaberula*
Rasp fern	*Doodia media*
Shaking brake	*Pteris tremula*
Ponga, Silver tree fern	*Cyathea dealbata*
Tangle fern spp.	*Gleichenia spp.*
Umbrella fern	*Sticherus flabellatus*
Waewaekoukou	*Lycopium volubile*
Wheki	*Dicksonia squarrosa*
Gymnosperms	
Kahikatea, White pine	*Dacrycarpus dacrydioides*
Tanekaha	*Phyllocladus trichomanoides*
Dicotyledons	
Centella	*Centella uniflora*
Coprosma	*Coprosma rhamnoides*
Creeping cudweed	*Gnaphalium gymnocephalum*
Hangehange	*Geniostoma rupestre var. ligustrifolium*
Kanono	*Coprosma grandifolia*
Karamu	*Coprosma lucida*
Karapapa	*Alseuosmia quercifolia*
Koromiko	*Hebe spp.*

Maori Name, Common Name	Botanical Name
Large-leaved mahoe	*Melicytus macrophyllus*
Manuka	*Leptospermum scoparium*
Mapou	*Myrsine australis*
Mingimingi	*Leucopogon fasciculatus*
Native lobelia	*Lobelia anceps*
Nertera	*Nertera dichondraefolia*
Pate	*Schleffera digitata*
Pigeonwood	*Hedycarya arborea*
Puawhananga	*Clematis paniculata*
Red pondweed	*Potamogeton cheesemanii*
Towai	*Weinmannia silvicolia*
Monocotyledons	
Ti kouka, Cabbage tree	*Cordyline australis*
Common twig rush	*Baumea teretifolia*
Cutty grass	*Gahnia setifolia*
Dwarf bog rush	*Schoenus maschalinus*
Ti Ngahere, Forest cabbage tree	*Cordyline banksii*
Kiekie	*Freycinetia baueriana*
Native grass	*Oplismenus hirtellus*
Nikau	*Rhopalostylis sapida*
Onion orchid	*Microtis spp.*
Onion orchid	*Microtis parviflora*
Orchid	*Thelymitra longifolia*
Orchid	*Thelymitra pauciflora*
Rush	*Schoenus apogon*
Rush	*Schoenus tendo*
Sedge	*Carex spp.*
Sundew orchid	*Drosera peltata*

Native orchid species recorded from Parihaka Forest

Sources: Species list – Manning, 2001

Habitat and flowering times – St. George, 1999

Species	Habitat	Flowering time
Caladenia bartletti	Only in the vicinity of kauri	September- November
Caladenia chlorostyla	Beech forests &scrublands	September – December
Microtis parviflora	Open places	October – January
Microtis uniflora	Open clay banks, roadsides	November – January
Orthoceras novae-zelandiae	Clay banks & open places	December – February
Pterostylis alobula	Scrublands & light forest	May – August
Pterostylis agathicola	Only in the vicinity of kauri	August – September
Pterostylis banksii	Sheltered banks	October – December
Pterostylis trullifloia		May – October
Thelymitra aff.longifolia	Clay banks, grassland & scrub	November - January
Thelymitra carnea		September – November
Thelymitra dentata		November – January
Thelymitra longifolia	Clay banks, grassland & scrub	November - January
Thelymitra pauciflora		November - January
Thelymitra pulchella	Open grassland	November - January

Appendix 5 Introduced Plants

Compiled from a field survey undertaken by L. Forrester & W. Holland (DOC) and G. Mullooly (WDC) in November 2000. It excludes A H Reed Kauri Memorial Park and Whangarei Falls Scenic Reserve.

Note: Species in **bold** are considered to be priority species for control given their invasive nature and the degree of threat they pose to native communities. Gorse is only considered a problem where it is on reserve boundaries and pine species are only a problem when they are wildings outside of the present pine plantations or in areas that have been logged. These weed species must be removed from areas prior to any tree planting/revegetation work being undertaken.

Common Name	Botanical Name
Aristea	*Aristea ecklonii*
Bartlettina	*Bartlettina sordida*
Bishop pine	*Pinus muricata*
Black nightshade	*Solanum nigrum*
Buttercup	*Ranunculus repens*
Climbing asparagus	***Asparagus scandens***
Common foxglove	*Digitalis purpurea*
Cow parsley	*Anthriscus sylvestris*
Cudweed	*Gnaphalium simplicicaule*
Eucalypt	*Eucalyptus spp.*
Flat leaved rush	*Juncus planifolius*
Fleabane	*Pulicaria dysenterica*
Giant rush	*Juncus pallidus*
Gorse	*Ulex europaeus*
Hawkbit	*Leontodon taraxacoides*
Himalayan feather grass	***Miscanthus nepalensis***
Inkweed	*Phytolacca octandra*
Japanese honeysuckle	***Lonicera japonica***
Jersey cudweed	*Gnaphalium luteo-album*
Kahili ginger	***Hedychium gardnerianum***
Lotus	*Lotus major*
Mexican devilweed	***Ageratina adenophora***
Mistflower	***Ageratina riparia***
Narrow leafed plantain	*Plantago lanceolata*
Pampas	***Cortaderia spp.***
Pine	***Pinus radiata***
Purple cudweed	*Gnaphalium coarctatum*
Purple top	*Verbena bonariensis*
Ragwort	*Senecio jacobaea*
Sedge	*Carex Demissa*

Common Name	Botanical Name
Selaginella (very invasive)	***Selaginella spp.***
Shivery grass	*Briza minor*
Soft rush	*Juncus effusus*
Sow thistle	*Sonchus oleraceus*
St John's wort	*Hypericum japonicum*
Summer grass	*Digitaria sanguinalis*
Swamp hypericum	*Hypericum japonicum*
Sweet vernal	*Anthoxanthum odoratum*
Taiwan cherry	***Prunus campanulata***
Tarweed	*Parentucellia viscose*
Tumble grass	*Lachnagrostis filiformis*
Umbrella sedge	*Cyperus eragrostis*
Wandering jew	***Tradescantia fluminensis***
Wattle	***Acacia spp.***
Water pepper	*Polygonum hydropiper*
White clover	*Trifolium repens*
Yorkshire fog	***Holcus lanatus***

Appendix 6 Logging Plan

Compartment number	Compartment size (ha)	Year planted	Age at 2002	Indicative harvesting date
1	6.93	1984	18	2011-2012
2				1997
3				1998
4	5.1	1979	23	2006-07, 2007-08
5	4.3	1977	25	2005-06, 2006-07
6	9.6	1984	18	2011-2012
7				1998
8	3.32	1983	19	2011-2012
9	1.6	1983	19	2011-2012
10				1998
11	2.9	1974	28	2005-2006
12	2.5	1981	21	2005-2006
13	0.3	1981	21	2005-2006
14	5.4	1977	25	2005-2006
15	2.1	1977	25	2005-2006
16	0.5	1981	21	2005-2006
17				1998-1999
18				1998-1999
19	13.94	1982	20	2008-2009
20	4.37	1978	24	2008-2009
21	1.02	1982	20	2008-2009
22	25.93	1981	21	2006-2007
23	4.88	1980	22	2005-2006
24	9.30	1979	23	2005-2006
25	3.33	1976	26	2005-2006
26	5.90	1983	19	2009-2010
27	18.52	1983	19	2009-2010
28				1998
29	1.28	1985	17	2011-2012
Total stocked area	**128.26**			

Note: The timeline for harvesting is indicative only and is dependant on demand for timber. It is likely that a number of areas may be harvested at the same time as is indicated on the above table.

Appendix 7 Parihaka Forest Restoration Plan

1 Executive Summary

The Parihaka Forest Restoration Plan provides strategic direction for the planning and implementation of an integrated ecological restoration programme within the Parihaka Forest. This is in accordance with Council's resolution in July 1997 that following the completion of the logging programme, the area was to be progressively replanted/returned to native species.

The restoration of Parihaka Forest will provide a continuous tract of native forest eventually covering some 500 hectares when linked with the Parihaka reserves and A H Reed Memorial Kauri Park. The resulting area of forest will be one of the larger protected areas of native forest in the Whangarei Ecological District. This will be a significant achievement in terms of conservation management as much of the Ecological District has been modified, with very few large areas of natural vegetation remaining (Manning, 2001). By restoring Parihaka Forest and linking its management with that of the Parihaka reserves and A H Reed Memorial Kauri Park there is a very real chance that kiwi and other species under threat can have a safe haven just minutes from Whangarei city centre.

There are five key management tasks contained within the Parihaka Forest Restoration Plan and detailed further in the body of this management plan. They are:

- Animal and plant pest control and monitoring programmes
- Revegetation
- Recovery and re-introduction of native species
- Forestry and logging
- Advocacy, public use and partnership.

The restoration of Parihaka Forest is a long-term project and will be staged according to the logging programme, which should be completed around 2014. Its proximity to Whangarei provides a unique opportunity to develop the project as a community partnership.

2 Restoration Options

In ecological restoration, the basic principle is to build an ecosystem that will persist and be self-sustaining into the future. Normally one cannot recreate the past because of ever-changing environmental conditions. Instead, the approach is to initiate ecosystem development based on the natural processes of change, whilst taking into account the characteristics of the site under development (Mitchell, 1998).

Restoration can occur in 3 ways:

- Naturally through regeneration as a result of being close to a healthy forest with a diverse range of species which allows natural seed dispersal mechanisms (wind, birds and water) to help with restocking, given suitable conditions for germination (MOF & NZFFA, 1998).
- Artificially through revegetation programmes where local seed is sourced and grown to create plant communities representative of those that were likely to have been present prior to clearing.
- A combination of regeneration and revegetation.

The site characteristics of Parihaka Forest which have the most bearing on a restoration programme are the predominantly clay soils which limit the types of species that will grow in these conditions and a long history as a pine plantation which appears to extend back to the 1930's (Nevin, 2002). The latter has resulted in no mature native forest to act as a complete seed source or provide indications of what species could be used in a revegetation programme.

Towai is the dominant species, particularly in areas that have been logged over. The understorey is composed of a range of tree ferns, ground ferns and native grasses. Cutty grass *(Gahnia setifolia)* appears to be one of the first species to establish in recently logged over areas and plays a valuable role in stabilising steep areas. Understorey species such as mingimingi *(Leucopogon fasciculatus)*, mahoe *(Melicytus ramiflorus)*, mapou *(Myrsine australis)* and pate *(Schleffera digitata)* are beginning to establish in the logged areas having established from seed banks in the areas, which are yet to be logged.

The neighbouring Parihaka reserves and particularly the forest cover around the Parihaka summit probably offer the closest indication of what native forest would have been present in the Parihaka forest prior to clearing. These reserves have similar topography of steep hills and deep valleys and a range of vegetation types that can act as a 'mirror' to determine revegetation planting regimes and provide a seed source. They also provide a good indicator of what species should be targeted in revegetation efforts.

3 Natural Regeneration and Revegetation

3.1 Overview

Given the above and particularly the rapid re-establishment of cutty grass and towai and the implied seed bank that is released once the ground is disturbed and the pines removed, it is evident that natural regeneration will play a large role in the re-establishment of native forest in the area. This process will also be assisted by the proximity of the diverse range of native species present in the adjacent Parihaka reserves and the ability of many of these species to be naturally dispersed.

The process will take generations to create a fully self-sustaining native forest, therefore in order to speed it up and engender and hold community interest it is recommended that a targeted revegetation programme be established, i.e. natural regeneration will be assisted by revegetation in key areas such as wetlands, ridge tops and key public use areas. This in turn will increase the available habitat for those native species that still remain in the area (including North Island brown kiwi, Banded kokopu, Auckland green gecko and forest ringlet butterfly) and enable the more rapid establishment of habitat for translocation of lost species.

The presence of the native understorey at Parihaka, in combination with the accelerated rate of regeneration following logging and the close proximity of other areas of native forest which act as a native seed source, provide an ideal environment for the Parihaka Forest restoration programme to be primarily one of natural regeneration.

This would be complimented by a smaller revegetation programme, which concentrates on the planting of bird attracting species and canopy species (some of the latter may also be bird attractors, e.g. kahikatea).

This process can be further enhanced by concentrating animal and plant pest control programmes on the removal of those species with the highest potential to inhibit natural regeneration processes, i.e. rats, possums and mustelids as consumers of vegetation and seeds and/or as predators of chicks and eggs and species such as pampas and wild ginger which can establish dense monocultures.

3.2 Revegetation Priorities

Given the intention to let Parihaka Forest largely regenerate itself naturally, revegetation can then be targeted into 4 areas:

Accelerating natural regeneration through the planting of canopy species and species particularly along ridge tops and in valleys to encourage seed dispersing birds.

Screen planting between private land and Parihaka Forest and along the edge of Memorial Drive.

Enhancing wetlands and riparian margins.

Concentrating revegetation on the south-eastern side of Parihaka Forest where natural regeneration rates may be slower due to different microclimates and aspect.

Ridge top and Valley canopy plantings

Ridge tops within Parihaka Forest are generally accessible to foot traffic after they have been logged. This provides an opportunity to plant groves of slower growing canopy species such as kauri, rimu, rewarewa and

tawa that can in time provide a seed source down through the valleys as well as attracting seed dispersing birds.

Planting in groves is necessary to achieve canopy closure and for a number of species planting in this manner represents how they grow naturally. Once a complete canopy has developed, the environment under the canopy is radically different from that outside, providing conditions better suited to many native plants. A complete canopy closure ensures a greater likelihood of attracting fruit eating birds, and the seed they deposit will have a greater chance of survival once they germinate (Porteous, 1993). To maximise the establishment of these species once planted, natural regeneration should be well underway prior to planting, i.e. planting should start 3-4 years after each compartment has been logged.

The resulting ground cover will provide a degree of shelter and improved soil and microclimatic conditions for the young canopy trees. Rimu, tawa, rewarewa, taraire, totara, kauri and tanekaha dominate the upper slopes of the Parihaka reserves and are likely to be a suitable mix of species to ridge plant within the Parihaka Forest as described above. Spacings between each tree should be 3-5 metres to minimise competition and to provide for spreading canopies and trunk growth.

Screen Planting along Boundaries and Memorial Drive

Along the upper part of Memorial Drive, particularly below the water tank, bare clay banks and scrubby vegetation dominated by gorse, exotic grass and pampas do little to create a favourable impression of Parihaka Forest.

Local residents have expressed concern about the perceived fire risk in the regenerating areas adjacent to Memorial Drive and would like to see these areas planted and the gorse removed. Residents are concerned about the fire risk in this area being so close to Memorial Drive particularly as fires have occurred in the past.

These areas would be a good initial focus for community tree planting programmes and would also serve to build good working relationships with neighbouring property owners. They are easily accessible, of easy to moderate grade and once planted will provide an immediate visual effect as well as a sense of achievement for those involved with the plantings.

Screen planting could include a mixture of fast growing regeneration species and slower growing canopy trees with an emphasis on species that are either fire resistant or capable of recovering from fire.

These include hangehange, mahoe *(Melicytus ramiflorus)*, tree fern *(Cyathea and Dicksonia spp.)* and five-finger *(Pseudopanax arboreus)*. Care needs to be taken with taller species so as not to impede viewpoints. Taller species should be planted lower down on slopes rather than on road edges or ridge tops. Planting of these areas would also reduce the ongoing commitment to weed control.

Wetlands and Riparian Margins

A number of wetlands and riparian margins are contained in the valleys. The most significant of these is a wetland and stream system that is at the base of Forest Loop Road #2. The stream edge is dominated by pate interspersed with ponga and cabbage trees. The upper catchment of the stream has been logged and the stream edge in this area has rapidly regenerated in pate, pigeonwood and Gahnia. The wetland area is predominantly manuka with emergent sedges and rushes.

The progressive removal of pine trees from around these areas and ongoing plant pest control will enable these areas to continue to regenerate naturally. Ginger and pampas grass will continue to be the key species to target due to their ability to form dense communities, which severely inhibit the regeneration of native species.

Supplementary plantings of bird attracting trees, particularly those species for which there is no immediate seed source could also be undertaken in and around wetland and riparian areas following logging. Species include puriri, kowhai, titoki, tawa and kahikatea interplanted with cabbage tree, nikau and flax (refer Appendices 3 and 4 for a more detailed species list).

Supplementing native vegetation in wetlands and riparian margins is also of benefit for North Island brown kiwi that may be still resident in the Parihaka Forest and are likely to use these areas for feeding. Expanding habitat for kiwi is particularly important so as to provide refuges when pine compartments are logged. An

additional benefit is that vegetated riparian margins and wetlands are able to act as filters for sediment and excessive water runoff – both possible consequences of logging in the future.

South- eastern Parihaka Forest

Natural regeneration following logging appears to be slower in the compartments on the south-eastern side of the forest (refer Figure 3 in the Maps section). This may be related to slightly less favourable microclimatic conditions including aspect, soil and distance from native seed sources. Although it is important to recognise that the return of the pine forest to native forest is a long-term project, consideration should be given to developing some areas on the south-eastern side of the forest as community revegetation areas.

This has the dual purpose of providing a focus for community interest in the restoration project while at the same time speeding up the return of native forest. With assistance from WDC, the community could undertake the whole process from the collection and propagation of seed to planting out. Schools in particular could be encouraged (through the provision of resources such as education kits and materials to establish nurseries) to be involved with the process as part of the learning outside the classroom experience.

4 Natural Recovery of Native Species

Natural recovery refers to the process whereby native species naturally migrate into an area and/or where native species that are present re-build their populations naturally with minimal human interference.

The predominance of radiata pine within Parihaka Forest limits the range of native species that are able to live in and adapt to a constantly changing environment (i.e. construction of access tracks and roads, modification of vegetation through logging and replanting) that is characteristic of a production forest landscape. This is more evident for native fauna rather than flora as pine monocultures often support a reasonably high diversity of native understorey plants as is the case within Parihaka Forest.

The emphasis for Parihaka Forest needs to initially be on maximising opportunities for native species to come back naturally and to allow those species that are present e.g. insects and lizards and aquatic fauna to rebuild themselves over time. Species likely to come back naturally include kaka, kakariki, kukupa and fernbird.

It needs to be accepted that species diversity will change as the forest cover changes. For example those plant species which prefer the more acidic soils created by successive rotations of pine forest will eventually be replaced as soil profiles and microclimates change.

The Gahnia slopes presently provide good habitat for forest ringlet butterfly (Manning, 2001, and P. Anderson, pers. comm., 2002). This habitat can continue to be provided by managing areas for this purpose.

Supplementing natural regeneration processes will provide additional opportunities for natural migration of a range of native fauna including insects, lizards, skinks and geckos and birds.

As more and more plants and trees establish, native forest cover will extend over a wider area so increasing the types of habitats available. It is important to have a good understanding of what native species are present and /or are likely to be present within Parihaka Forest.

Some species due to changing/shrinking habitat conditions may be present in numbers too low to be detected while others may take some time to recover due to long breeding cycles and/or the presence of animal pests. For example many lizard species are sensitive to rodents even in very low numbers (Whitaker, 1978, and G. Ussher, pers. comm. in Ritchie, 2002) and along with some species of large ground invertebrates such as Carabid beetles may need up to 5 years to recover following animal pest control (D. Towns and C. Green, pers. comm.. in Ritchie, 2002). For this reason a comprehensive fauna survey should be undertaken to determine what species are present, to establish a baseline for future monitoring of species diversity and to assist with decision-making as it relates to assisted re-introductions.

A fauna survey will also assist the targeting of animal pest control programmes as it will potentially identify key species to target as it relates to the recovery of native species, e.g. the absence of large invertebrates such as beetles and spiders can indicate the presence of large numbers of rodents. However, results need

to be interpreted cautiously as the highly modified environment of Parihaka Forest may also be a contributing factor.

5 Re-introduction of Native Species

Knowing what species are present, where and in what numbers is particularly important for the timing of re-introductions. Re-introduced species need to have sufficient diversity of food supplies to sustain themselves throughout the year.

One of the most exciting parts of any restoration project is the re-introduction of missing species. They provide a visual indicator of the success of pest control and habitat restoration programmes and a wonderful opportunity for the community, particularly those who have been directly involved to experience the success of their hard work.

In the case of Parihaka Forest it will take some time to restore sufficient natural communities to sustain re-introductions of many native fauna species (primarily birds). Contributing factors include the extended logging programme, impacts of surrounding residential and rural land, rates of regeneration and revegetation, the need to plan for recreational use and the time it will take for animal pest control programmes to be sufficiently advanced so that threats to native species are minimised.

Parihaka Forest will in time have sufficient habitat diversity to sustain a wide range of native species. Recognising that animal and plant pests are the key threats, habitat diversity can be further enhanced by establishing an integrated pest control and advocacy programme, which includes all of the Parihaka reserves down to the Hatea River and extends through all the private land that bounds the aforementioned reserves and the forest. This extended control programme is particularly important given the tendency for many native birds to disperse widely – re-introductions need to consider the total area that a species is likely to disperse over.

Given the time it will take to establish and achieve results from the aforementioned management tasks, it is unlikely that reintroductions of native fauna would possibly not take place until after the logging programme has been completed (indicatively around 2010). This may seem like a long time lag but if re-introductions are to succeed then considerable effort needs to be put into establishing the necessary preconditions (principally adequate diversity of food supplies and habitat and minimal animal pests) to sustain re-introductions.

Parts of Parihaka Forest provide opportunities for the installation of a predator proof fence and if this opportunity was undertaken then there is the possibility that

re-introductions could occur earlier, particularly for ground dwelling species. The fenced area could become a haven for Operation Nest Egg kiwi chicks, and other predator sensitive species including lizards.

It is likely that in time Parihaka Forest and its environs will provide habitat predominantly for native bush birds along with some wetland species. Potential species include brown kiwi, weka (weka are known to predate on chicks and eggs of other species so care would need to be taken with the timing of their introduction), takahe, rifleman, whitehead, robin, stitchbird, bellbird, kokako, saddleback, spotless crake, bittern and banded rail.

For other species such as invertebrates (freshwater and terrestrial), reptiles and freshwater fish, the effort should be concentrated on habitat creation, restoration and improvement to aid existing native populations (e.g. riparian and wetland planting, felling trees away from wetlands) and provide conditions to attract natural migration into Parihaka Forest.

In terms of targeting a re-introduction programme, the most practical species to start with are those, which will not conflict with any future releases and which have the maximum likelihood of success. The following criteria (adapted from Greene, 1995, in Ritchie, 2002) form a good basis for selecting candidate species.

- There should be detailed knowledge on the species' ecology.
- They should have been common in the Whangarei Ecological District.
- Appropriate habitats should be available to meet the species' year round needs.

- They should be territorial or relatively sedentary (particularly if adequate habitat protection or animal pest control can be guaranteed outside Parihaka Forest).
- Minimum management should be required once each species has been released.
- Appropriate source populations should be available with minimal cost of capture.
- Conflicts with other species in the area or proposed for the area should be minimised to ensure persistence and expansion of founder species.
- There should be low numbers of other competitors during the establishment phase.

A well-planned sequence of re-introductions needs to be followed, to minimise conflicts with existing species or any future candidates for re-introduction. It is also important to ensure that animal pest control programmes are at a stage where they will not be compromised by reintroductions, e.g. bait stations for controlling rodents are difficult to weka proof. The Department of Conservation (DOC) is responsible for approving transfers and requires a detailed translocation plan for each species. DOC also has its own programmes of transfers of rare native species through individual species recovery plans. The development of a translocation plan for Parihaka Forest therefore needs to be undertaken in association with DOC.

Appendix 8 Re-vegetation Planning Guide

Much of the information in this appendix is sourced from Porteous, 1993.

Resources and Planning

It is important to ensure that adequate resources are available and good planning is undertaken prior to establishing a revegetation programme. Many revegetation projects falter after considerable time and resources are put in because an important aspect is overlooked or because resources are not budgeted for beyond the first two years. For example, if weeds are a serious problem, they should be controlled or eradicated before any planting takes place.

Choice of Species

One of the major reasons that effort is put into protecting and managing forest remnants is to preserve their ecological history and integrity – the unique collection of plants that has developed over hundreds of years on that particular site and in response to local conditions.

It is important if revegetation plantings are to be established that the following guidelines are observed.

Avoid:

- Planting species outside their natural geographic range.
- Using non-Whangarei Ecological District plant populations as source material when planting species within their natural geographic and natural range.
- Planting species in unnatural habitats within their natural geographic range. For example, if a plant only grows on cliffs or in very dry steep areas, it should not be used for revegetation in wet areas.

There are three reasons why it is important to adhere to these guidelines:

1 Local plants are better adapted to local conditions and will grow better than plants from other areas.

2 Plants of the same species, but from different locations, may show great variation in the way they grow. This can be a result of local environmental conditions and/or genetic differences.

3 Moving plants beyond their natural range to areas where they were not previously present goes against natural processes and confuses the picture for people in later years studying vegetation patterns and processes.

Selecting Species for Parihaka Forest Plantings

Birds are great natural distributors of native seed. The following suggestions for key native revegetation species are based on creating shelter for the eventual re-establishment of species that require shelter before planting such as nikau and to encourage birds such as kereru and blackbirds to visit the plantings and drop seed.

Material for plant stock can be gathered either by taking cuttings or collecting seed. Seed is by far the easiest technique as long as it is treated in the right manner prior to sowing in the nursery.

As a general rule all seed for Parihaka Forest plantings should be collected from the surrounding reserves. If this is not possible then seed should be sourced from within the Whangarei Ecological District.

Additional species for revegetation can best be identified by first becoming familiar with the area to be planted (how big, what soil conditions, drainage, aspect, etc.) and then finding a similar native forest or wetland area and making a list of the species which are growing best in that area. The key is to collect good quality seed from species that can easily be propagated and have high survival rates once planted.

Re-vegetation Species for Parihaka Forest

Maori Name, Common Name	Botanical Name	Notes/Growing Conditions
Ti kouka, Cabbage tree* (1)	*Cordyline australis*	Most sites, hardy, likes wet areas
Ti Ngahere, Forest cabbage tree* (1)	*C. banksii*	Swamps and dry hillsides
Manuka (1)	*Leptospermum scoparium*	Most sites but good in swampy areas
Towai (3)	*Weimannia silvicola*	Most sites, but copes with open, exposed places
Kanuka	*Kunzea ericoides*	
Karamu*	*Coprosma lucida & robusta*	Most sites
Mapou* (1)	*Myrsine australis*	Hardy, most sites
Pate* (1)	*Schleffera digitata*	Forest and wet places
Mahoe* (1)	*Melicytus ramiflorus*	Anywhere, according to seed source.
Karaka* (1)	*Corynocarpus laevigatus*	Valleys
Tanekaha♦	*Phyllocladus trichomanoides*	Ridges and slopes
Kauri♦ (5)	*Agathis australis*	Ridges and slopes
Nikau* (1)	*Rhopalostylis sapida*	Forest edge
Puriri* (5)	*Vitex lucens*	Valleys, stream and wetland edges (needs shelter)
Taraire* (5)	*Beilschmiedia taraire*	
Tawa* (3)	*Beilschmiedia tawa*	
Rewarewa♦ (3)	*Knightia excelsa*	Ridges and slopes
Kahikatea* (3)	*Dacrycarpus dacrydioides*	Slopes and wetter areas
Miro♦(5)	*Prumnopitys ferruginea*	Ridges and slopes
Rimu♦ (5)	*Dacrydium cupressinum*	Ridges and slopes

Notes to accompany revegetation species table:

- The first 8 species in the table are native colonising and nurse plants. These are plants that are quick growing, capable of being planted in full sun and moderately exposed conditions. Once established, less hardy (e.g. canopy species such as puriri, kauri, rewarewa, miro) species can be planted amongst them, taking advantage of the microclimate created and providing shelter for the growing stems.
- Species with an asterisk (*) are bird distributed native plants. These are plants commonly distributed by birds, and therefore, are attractive to birds. The process of natural regeneration can be hastened by planting such species to encourage birds.
- Species with a ♦ could be planted in groves on ridge tops.
- Numbers in brackets represent a general guideline for the spacing in metres between each plant of that species when planted. Species with a spreading canopy are best planted five metres apart from one another.

A good technique to aid in planning a seed collection programme is to establish a local seed calendar, which records species, seed colour and time of year to collect seed.

Site preparation

The success of plantings is dependent on good site preparation. Plants grow best if there is no competition from weeds for light, soil nutrients and water and no grazing or trampling pressure from rabbits, deer and stock.

Removal of competing plants and adequate fencing and animal pest control prior to planting can mean the difference between survival and failure, and will certainly result in faster growth rates of the planted trees and shrubs.

Key weed species that are likely to inhibit plantings are low growing, rapidly spreading carpet species such as wandering jew, climbing asparagus and wild ginger. Other weed species that should be removed prior to planting include woolly nightshade and privet. Eradicating weeds prior to planting also reduces the follow-up work required after planning. Planning well ahead of plantings is vital.

Planting

Time of Year

Planting in winter or late autumn (May-July) is more likely to overcome the problem of dry spells and takes advantage of the soil being damp. The milder winters of Northland mean that the roots of many trees continue to grow in the cooler months. If the plant has developed a good root system in winter, it is more likely to survive dry spells the following summer. Hardy pioneer species (such as the first eight in the revegetation table) should always be used as initial plantings to provide the required shelter before the less hardy species are established.

Group Planting

Group planting is based on the way that plants naturally establish and spread. Initially clumps, or groups of plants are established on the best sites (e.g. where soil conditions are best or the microhabitat that these plants grow best in – for example, wetland plants vs. forest plants). Plant spacings should be a 1 metre to 1½ metres apart for smaller species and initial forest establishment species (e.g. manuka).

Fruit eating birds are attracted to groups of plants (particularly those made up of several species), rather than to single plants. The birds distribute seed under the plants and this helps to accelerate the regeneration process.

Planting Successfully

Key techniques:

- For plants that are grown outside of the Whangarei area (e.g. those grown in nurseries) hardening off is essential. Plants should be brought a location close to where to they are to be planted and left out in the open for approximately 4 weeks prior to planting.
- The hole dug for container grown plants needs to be at least twice the size of the container.
- Use gentle pressure to remove plants from containers. If they are difficult to remove either gently tap the base of the container or slit it with a knife.
- If the roots are cramped or root bound, slit the root ball with a knife down the length of the roots, in three places, cut the bottom 10mm from the root ball and spread the roots out.
- Plant the tree and replace the soil around the roots with turf the right way up and gently firm the soil around the plant.
- Fertiliser is generally not needed for native plants on sites that have fertile soils and are sheltered. Small handfuls of granulated fertiliser may assist plantings on ‘hard’ sites with poor soils but many native plants appear to grow satisfactorily even on these sites.

- For volunteer tree planting programmes it's important to make sure people know what they are planting, where the individual species should go and how they should be planted. Planning for volunteer planting should include sufficient supervisors to ensure that these conditions are met.

Aftercare

Good pre-planting site planning should minimise the amount of aftercare needed. Undertaking fencing, animal and weed pest control prior to planting is vital to the success of plantings. If all this work is done then aftercare should be limited to maintaining fences and monitoring animal and plant pest numbers.

Source information:

The following provide excellent information on revegetation techniques and planning:

Auckland Regional Council, June 2001, Riparian zone management: Strategy, guidelines and planting guide. ARC Technical Publication 148, ARC, Auckland.

Environment, Ministry for the, June 2000, Managing waterways on farms; A guide to sustainable water and riparian management in rural New Zealand. MFE, Wellington.

Porteous T., 1993, Native forest restoration: a practical guide for landowners. Queen Elizabeth the Second National Trust, Wellington.

Appendix 9 Archaeological Sites

Compiled from the New Zealand Archaeological Association's Site Record Forms (NZMS260) for Parihaka.

Map No., Map name, Map ed., Grid ref.	NZAA Metric Site No., Date visited, Site type, Site name	State of site, Possible future damage	Description of site	Owner
N20, Whangarei, 4th ed. 1977, E1849 N7981	N20/109,May 1979, Pa, Maori	Features well-preserved due to native bush and scrub, reserve so future damage is unlikely, minimal natural erosion.	Near Ross Track. Surrounding scrub of hange-hange and pigfern. Pits and terraces fairly exposed.	WDC
N20, Whangarei, 4th ed. 1977, E1848 N7981	N20/101,May 1979, Pa, Maori	Mostly good state of preservation but some erosion evident.	Large complex of pits, terraces, house sites and middens. Two sides spurs running north & west from Dobbie Track.	WDC
N20, Whangarei, 4th ed. 1977, E846 N975	Part N20/101,Jan 1989,Goldmine, Other	Not recorded.	Off Ross Track near Dundas Rd. Gold mining shafts cut into solid rock of steep southern side of valley, 4m from stream.	WCC
N20, Whangarei, 4th ed. 1977, E1846 N7984	N20/139,May & Sep 1979, Pits and terraces	Native bush reserve, very dense scrub and bush except in eroded areas around white clay caves which could expand.	West side of Drummond Track. Series of terraces, many pits up to 2m deep, on top of steep narrow ridge. Uncertain whether white clay caves are of Maori origin. Human skull found 1969.	WCC
N20 (NZMS 260 Q06), Whangarei, 4th ed. 1977, E851 N997	N20/588,May 1988, Pits	Bulldozed.	Top of cutty grass area on spur of leading ridge up Parihaka. Two or three poorly defined pits. Two adzes found.	WCC
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E851 N968	N20/590,May 1988, Trench/midden	Track crosses trench. Midden exposed in track.	Mackesy Bush. Trench: 7m long, 80cm wide x 60cm deep, likely to be a prospector's trench. Shell midden: about 50 fragments crushed and broken cockles, eroded.	WCC
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E8501 N9667	N20/591,May 1988, Pit/midden	Badly eroded, light bush.	Lower end of ridge on Mackesy Track in Ross Park. Pit: 2.5 x 2m x 15cm deep. Shell midden: 1.5 x 50cm of crushed and broken cockles, several mud snails.	WCC

Map No., Map name, Map ed., Grid ref.	NZAA Metric Site No., Date visited, Site type, Site name	State of site, Possible future damage	Description of site	Owner
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E849 N966	N20/592,May 1988, Terraces/pit	Poor, in scrub and bush.	Mackesy Bush near urban boundary. Circular rubbish pit: 80cm dia x 25cm deep, broken china, glass, bottles, batteries, two terraces nearby. Six terraces: 3 x 2m with 25cm high rear scarps.	WCC
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E850 N967	N20/593,May 1988, Midden	Eroded, in bush, poor.	Mackesy Bush. Midden: 5m below a flat area on the side spur of the ridge, 2 x 2m area of shells, 99% cockle, and several mud snails.	WCC
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E849 N9695	N20/594,May 1988, Pit	In bush.	Mackesy Bush. Pit: on small flat on eastern side of steep sided narrow ridge, 2 x 1m x 20cm deep, raised bank on downhill side of flat 40cm high.	WCC
N20 (NZMS 260 Q06), Whangarei Hukenenui, 4th ed. 1977, E8465 N9925	N20/595,May 1988, Pits/terraces	Thick scrub and bush, much of it impenetrable.	North face of Parihaka above houses on right side of Whareora Rd. Likely more pits and terraces to be found. 7 open rectangular pits and 3 terraces on adjacent private property.	WCC D Smith
N20 (NZMS 260 Q07), Whangarei, 4th ed. 1977, E8413 N977	N20/598,May 1988, Midden	Bulldozed track – slumped, badly eroded.	Bush reserve on eastern side of Hatea River, north of Rongotai Pl./Dundas Rd. Patches of shell midden over 15m of track, one patch 2m long 20cm deep black soil over white clay with cockles.	WCC