

A white Malibu speedboat is parked on a wooden dock. The boat has a dark blue stripe along the bottom and a Malibu logo on the side. The background shows a calm lake, green hills, and a blue sky with white clouds.

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References

The following sources are referenced directly within the management plan, or are noted as references within work produced in the course of developing the management plan.

Alemann, M. 1992: *Early Land Transactions in the Ngatiwhatua Tribal Area*. Unpub. M.A. Thesis, Maori Studies Department, University of Auckland.

Allen S. R., Bryner V. F., Smith I. E. M., Balance P. F. 1996: *Facies analysis of pyroclastic flow deposits within basaltic tuff rings of the Auckland volcanic field, New Zealand*. *New Zealand Journal of Geology and Geophysics* 39: 309-327.

Andrew Stewart Ltd. 2009: *Orakei Basin Reserve Management Plan Background Information Review*, Unpub report, December 2009.

Auckland City Council (ACC) 2008: *Unpublished data from a detailed geological survey of the Auckland isthmus* by Bruce Hayward and Jill Kenny (Geomarine Ltd.)

Baquié, B. 2005a: *Orakei Basin Walkway Stage 1: archaeological survey*. Unpub. report. February 2005.

Baquié, B. 2005b: *Orakei Basin Walkway Stage 2: Orakei Creek archaeological survey*. Unpub. report. October 2005.

Best, S. 2002: *The proposed Orakei Basin Pathway through Orakei Pa (R11/87): initial archaeological assessment*. Unpub. report, November 2002.

Brown, 1954: *Orakei*, Archaeological Report, Auckland City Council Engineers Department.

Cameron E., Hayward, B., Murdoch, G. 1997: *A Field Guide to Auckland*. Auckland: Godwit.

Campbell, J. 1952: *Poenamu*, New Zealand Edition, Christchurch.

Clough, R. and M. Turner 1998: *Orakei Basin: archaeological survey*. Unpub. report, Clough and Associates.

Clough, R. and S. Macready 2009: *Orakei Point, Auckland: archaeological assessment for plan change*. Unpub. report. Clough and Associates, July 2009.

Geometria 2003: *Archaeological topology and geophysical survey Orakei Pa R11/87*. Unpub. report. Geometria, March 2003.

Jackson, E. 1976: *Delving into the Past of Auckland's Eastern Suburbs: section 2 Orakei and Volume 1: Auckland*, Premier Print Services.

Miskelly C.M., Dowding J. E., Elliot G. P., Hitchmough R. A., Powlesland R. G., Robertson H. A., Sagar P. M., Schofield R. P., Taylor G. A. 2008: *Conservation status of New Zealand birds*, 2008: *Notornis* 55: 117-135.

Nunns A. G. 1975: *A geophysical investigation of Auckland explosion craters*. Unpublished BSc (hons) thesis, University of Auckland.

Platts, U. 1971: *The Lively Capital. Auckland 1840-1865*. Christchurch, Avon Fine Prints.

Searle, E J and Davidson, Janet. 1973: *A Picture Guide to Volcanic Cones of Auckland: showing geological and archaeological features*. Auckland: Auckland Museum.

Searle, E.J. 1964: *City of Volcanoes*, Halstead Press, Sydney

Stone, R.C.J. 2001: *From Tamaki-Makau-Rau to Auckland*. Auckland, Auckland University Press.

Sullivan, A., MS, n.d.: *The Maori Economy of Tamaki 1820-1840*

Tatton, K. and R. Clough 2005: 217 Orakei Rd, Orakei, Auckland: archaeological assessment. Unpub. report. Clough and Associates, July 2005.

Turton, H. 1877a: *Maori Deeds of Land Purchases in the North Island of New Zealand*. (Copied from the Originals.) In two Volumes. Vol. I. Province of Auckland. Wellington, George Didsbury, Government Printer.

Turton, H. 1877b: *Plans Of Land Purchases In the North Island of New Zealand*. (copied from the originals.) In two Volumes. Vol. I. Province of Auckland. Wellington. George Didsbury, Government Printer.

Turton, H. ed 1883: *An Epitome of Official Documents Relative to Native Affairs and Land Purchases in the North Island of New Zealand*. Wellington, George Didsbury, Government Printer.

Visser, E. 1987: *Orakei Peninsula – Railcorp development. Preliminary excavation report of site R11/87*. Unpub. report. Department of Conservation, Auckland.

Waitangi Tribunal, 1987: *The Orakei Report*, Wai 9, Wellington, Department of Justice.

Appendix 1:

Statutory and policy context

1 Legal descriptions of reserves

Orakei Basin West Reserve

Includes the following parcels:

Legal description:

Allotment 286, Section 16, Suburbs of Auckland

Area:
4123 m²

Comprised in:
CFR NA20C/352

Status:
Freehold Land held in fee-simple

Owner:
Auckland City Council

Encumbrances:
Subject to Section 59 of the Land Act 1948



Legal description:

Lot 1 DP 121862

Area:
2700 m²

Comprised in:
CFR NA71A/82

Status:
Freehold Land held in fee-simple

Owner:
Ngati Whatua O Orakei Maori Trust Board

Legal description:

Lots 1 to 13 inclusive, Lot 31 and Part Lot 33 DP 24664

Area:
3.1960 ha (7a 3r 23.6p)

Comprised in:
CFR NA21A/280

Status:
Reserve subject to the Reserves Act 1977

Owner: Auckland City Council

Encumbrances: None

General comment:

Part Lot 33 DP 24664 was taken as a recreation-ground pursuant to the Public Works Act 1928, vesting in Council by NZ Gazette 1934 p 1214 (Proc 8678). This is an unclassified reserve.

Lots 1 to 13 inclusive and Lot 31 DP 24664 vested in Council, in trust, for a recreation purposes by NZ Gazette 1953 p 742 (GN A316211). This is an unclassified reserve.

Legal description:

Lot 32 DP 24664

Area:
48 m² (1.9p)

Comprised in:
CT 646/209 (cancelled)

Status:
Crown Land subject to the Land Act 1948

Owner:
Land Information NZ

Encumbrances:
None

General comment:

Lot 32 DP 24664 was formerly included within CT 646/209 held in the name of H.M. the King as an Endowment for Primary Education. Lot 32 DP 24664 was not included within Gazette Notice A316211 that vested certain parcels in the Auckland City Council and therefore Lot 32 DP 24664 remains in CT 646/209. By virtue of the provisions contained section 185(7) of the Land Act 1948 all endowment lands for education purposes reverted to Crown Land subject to the Land Act 1948.

Legal description:

Legal Road (Upland Road)

Area:
Unknown

Comprised in:
No LT Registration

Status:
Land held as Road as defined by section 315 of the Local Government Act

Owner:
Auckland City Council

Encumbrances:
None

General comment:

Road legal by 'Crown Grant'.

Legal description:

Lot 9 DP 15019

Area:
809 m²

Comprised in:
CFR NA384/117

Status:
Land held for Municipal Purposes subject to the Public Works Act 1981

Owner:
Auckland City Council

Encumbrances:

Fencing Agreement in Transfer 173927

General comment:

Purchased by Council in 1941 for Municipal Purposes, refer to Transfer 339805.

Legal description:

Lots 5 to 8 inclusive DP 15019

Area:

3908 m²

Comprised in:

CFR NA670/211

Status:

Land held for a Public Work subject to the Public Works Act 1981

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Purchased by Council in 1940 for Public Work, refer to Transfer 320267.

Legal description:

Part Allotment 162, Section 16, Suburbs of Auckland

Area:

5482 m²

Comprised in:

CFR NA910/81

Status:

Freehold Land held in fee-simple

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Purchased by Council in 1940 for under the provisions of the municipal Corporations Act 1953, however no purpose stated; refer to Transfer 329384.

**Orakei Basin East Reserve**

Includes the following parcels:

Legal description:

Lot 1 DP 46343

Area:

1.2722 ha

Comprised in:

CFR NA31C/1409

Status:

Land held as a Recreation Reserve subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Lot 1 DP 46343 vested in Council upon subdivision under the provisions contained in section 352(3) of the Municipal Corporations Act 1954. By virtue of the provisions contained in section 16(11)(i) of the Reserves Act

1977, Lot 1 DP 46343 is automatically classified as a recreation reserve.

Legal description:

Lot 8 DP 46346

Area:

1391 m²

Comprised in:

CFR NA24D/457

Status:

Land held as a Recreation Reserve subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Lot 8 DP 46346 vested in Council upon subdivision under the provisions contained in section 352(3) of the Municipal Corporations Act 1954. By virtue of the provisions contained in section 16(11)(i) of the Reserves Act 1977, Lot 8 DP 46346 is automatically classified as a recreation reserve.

Orakei Basin West Reserve/Orakei Basin East Reserve

Share the following parcel:

Legal description:

Lot 2 DP 43914

Area:

5438 m²

Comprised in:

CFR NA24D/480

Status:

Land held as a Recreation Reserve subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Lot 2 DP 43914 vested in Council upon subdivision under the provisions contained in section 352(3) of the Municipal Corporations Act 1954. By virtue of the provisions contained in section 16(11)(i) of the Reserves Act 1977, Lot 2 DP 43914 is automatically classified as a recreation reserve.



Lucerne Road access

Legal description:

Legal Road (Lucerne Road)

Area:

Unknown

Comprised in:

No LT Registration

Status:

Land held as Road as defined by section 315 of the Local Government Act

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Road legal by Transfer 64491 dated 1912.



Kelvin Road Reserve

Legal description:

Lot 24 DP 21554

Area:

2135 m²

Comprised in:

NA623/109

Status:

Land held as a Reserve for Public Purposes subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Transferred to Council in 1931 for a reserve for public purposes; refer to Transfer 245928.



MacPherson Street Reserve

Legal description:

Lot 171 DP 41497

Area:

8903 m² (2a 0r 32p)

Comprised in:

Part CFR NA24D/418

Status:

Land held as a Recreation Reserve subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Lot 171 DP 41497 vested in Council, in trust, for recreation purposes pursuant to the Reserves and Domains Act 1953 by NZ Gazette 1960 p 585 (GN 18243). This is an unclassified reserve.

MacPherson Street Reserve access

Legal description:

Legal Road (Meadowbank Road)

Area:

Unknown

Comprised in:

No LT Registration

Status:

Land held as Road as defined by section 315 of the Local Government Act

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Road legal by Transfer 38397 dated 1906.



MacPherson Street access

Legal description:

Lot 46 DP 47376

Area:

271 m² (10.7p)

Comprised in:

CT 148/170

Status:

Land held as an Accessway as defined by section 315 of the Local Government Act

Owner:

Auckland City Council.

Encumbrances:

None

General comment:

Became Accessway by Transfer 632034 dated 1959.



Waiatarua Road access

Legal description:

Legal Road (Waiatarua Road)

Area:

Unknown

Comprised in:

No LT Registration

Status:

Land held as Road as defined by section 315 of the Local Government Act

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Road legal by 'Crown Grant'.



Bonnie Brae Reserve

Legal description:

Part Lot 17 DP 38615

Area:

4041 m²

Comprised in:

NA35D/1368

Status:

Land held for Recreation Purposes subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Part Lot 17 DP 38615 vested in Council, in trust by Order in Council 030324.1. This is an unclassified reserve.



Meadowbank Reserve

Legal description:

Part Allotment 220, Section 16, Suburbs of Auckland

Area:

543 m²

Comprised in:

Residue NA621/188

Status:

Land held as a Road Reserve subject to the Reserves Act 1977

Owner:

Auckland City Council

Encumbrances:

None

General comment:

Transferred to Council in 1931 for a road reserve; refer to Transfer 245477. This is an unclassified reserve.

2 Management plan preparation process and legal status

The Reserves Act 1977 outlines a plan preparation process. Some areas are classified 'recreation reserves' under the Act.

The process outlined within the Act has been followed for the preparation of this management plan. Nevertheless, it is understood that the management plan cannot be a statutory document unless all applicable land areas are classified under the Act. Auckland City Council may choose to classify the applicable areas of land and undertake a statutory reserves management plan process.

The process followed is outlined below:

- 1 A council decides to prepare a management plan for the reserves.
- 2 Public notification of intention to prepare a draft management plan and submissions requested (not less than one month).
- 3 Preparation of draft management plan, incorporating issues identified from research and consultation.
- 4 Draft management plan received by council and endorsed for public notification.
- 5 Public notification of draft management plan, submissions requested (2 month period).
- 6 Council hearing of submissions.
- 7 Modifications to draft management plan incorporating submissions and hearing.
- 8 Adoption of final plan by Council, public notification of its availability.

3 Lease of the Orakei Basin

After completion of the railway embankment in 1931, Auckland City Council entered into an agreement with the Auckland Harbour Board to lease the Orakei Basin. The initial lease for 50 years was renewed in November 1983 for a further 50 years (expiring in 2033). After the Foreshore and Seabed Act 2004 came into law, the lessor became the Crown rather than the Auckland Harbour Board. The lease places requirements upon Auckland City Council regarding the management of the Orakei Basin, relating to its use and riparian rights. The key clauses of the lease are:

- The Corporation (Auckland City Council) will maintain the Orakei Basin as a public boating and associated water related activities area and will not permit the same to be used for any other purpose whatsoever.
- Subject to compliance with the Town and Country Planning Act 1977 and any other Acts or Regulations having application the Corporation shall have the complete sole control and authority over the Basin and for that purpose shall be entitled to make such rules, bylaws and regulations as it shall deem necessary for the proper management of the control thereof.
- This Lease is subject to all existing riparian rights and rights of access by water appurtenant to land abutting on the said Basin and upon all banks of all creeks and streams discharging into the same.

4 Orakei Basin Bylaw 2006

A bylaw is a rule or regulation made by a local authority which affects the public, which orders something to be done, or in some cases, something not to be done. It provides penalties for not complying, including fines imposed by a District Court. Bylaws are reviewed from time to time.

The Orakei Basin Bylaw 2006 is limited to matters of water related recreational use and the enforcement of provisions.

The purpose of the Orakei Basin Bylaw 2006 is:

"...to control water-related recreational activities on Orakei Basin to preserve public well-being, safety and convenience, due to the limited size of the Basin, and to the extent that it is used for a variety of such activities, not all of which are compatible.

Users of Orakei Basin are required to comply with this bylaw, any lease requirements, maritime rules made under the Maritime Transport Act 1994 and the applicable requirements of Auckland Regional Council (the ARC) Navigational Safety Bylaw 2000."

The meaning or 'Orakei Basin' within the bylaw is limited to the extent of the water body as defined below:

"Orakei Basin or Basin means that part of the Orakei Basin south of the railway embankment whose ebb and flow is governed by gates beneath the railway embankment and includes the navigable parts of Orakei Creek."

The bylaw provides for organisations to apply to council for exclusive use of the Orakei Basin and areas of surrounding reserve.

The Council may grant exclusive use of the Orakei Basin for special events as long as the public is not endangered or unduly inconvenienced. Other watercraft cannot use the Orakei Basin during exclusive use periods. Outside of these times, the Orakei Basin is available for general use by the public.

The explanation to the bylaw notes that the Park Manager may let water into and out of the Basin, from time to time without prior notification, to maintain water quality.

The Bylaw is available for public viewing on the Council's website.

5 The Reserves Act 1977

Some parcels of the subject land are classified under the Reserves Act as 'recreation reserves'. These include Orakei Basin East, MacPherson Street and Bonnie Brae Reserves. Recreation reserves provide for the recreation, sporting activities, the physical welfare and enjoyment of the public, and for the protection of the natural environment. Emphasis is also given to freedom of access to the reserve subject to any restrictions that the administering body may impose for the protection and well-being of the reserve. Where scenic, historic, archaeological, biological, geological or other natural features are present, they are to be managed and protected to the extent compatible with the principle purpose of the reserve.

Management plans provide clear guidance for the public and the council by providing a framework of objectives and policies for reserve development and management. This includes retaining the flexibility to accommodate matters as they arise, within the general framework.

6 Resource Management Act 1991

The purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources. The purpose of the Act is outlined in more detail within Part 2. Matters of national importance include:

- the preservation of the natural character of the coastal environment
- the protection of outstanding natural features and landscapes
- the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna
- the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers
- the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga
- the protection of historic heritage.

7 Historic Places Act 1993

The Orakei Basin meets the definition of an archaeological site under the provisions of the Historic Places Act and therefore cannot be destroyed, damaged or modified without an Authority from the Historic Places Trust.

8 New Zealand Coastal Policy Statement (1994)

The New Zealand Coastal Policy Statement (NZCPS) is the only mandatory National Policy Statement under the Resource Management Act 1991 (RMA).

The purpose of the NZCPS is to state policies to achieve the purpose of the RMA – to promote the sustainable management of natural and physical resources – in relation to the coastal environment of New Zealand.

The NZCPS sets out policies regarding the management of natural and physical resources in the coastal environment. Local authorities are required by the RMA to give effect to the NZCPS through their plans and policy statements.

The NZCPS contains policies that seek to:

- Preserve the natural character of the coastal environment;
- Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- Protect features such as landscapes, seascapes and landforms; and
- Maintain and enhance amenity values of the coastal environment and mitigate the effects of use and development.

The Department of Conservation is currently reviewing the NZCPS as part of the statutory requirement under the RMA.

The Minister of Conservation has reviewed the 1994 NZCPS and prepared the Proposed NZCPS 2008, which is subject to public consultation.

9 Proposed New Zealand Coastal Policy Statement (2008)

The Proposed New Zealand Coastal Policy Statement 2008 (PNZCPS) states objectives and policies to achieve the purpose of the Resource Management Act 1991 in relation to New Zealand's coastal environment.

The PNZCPS is subject to further consultative process and has not been adopted to replace the New Zealand Coastal Policy Statement (1994).

The PNZCPS contains objectives and policies addressing (amongst other matters):

- Treaty of Waitangi and tangata whenua matters;
- subdivision, use, and development (including coastal occupation charging);
- natural character, including biodiversity and landscapes;
- public access;
- water quality;
- coastal hazards;
- historic heritage; and
- the definition of restricted coastal activities, for which the Minister of Conservation will decide applications for resource consent.

10 Auckland Regional Plan: Coastal (1999)

The Auckland Regional Plan: Coastal provides the framework to promote the integrated and sustainable management of the Auckland region's coastal environment. The Auckland Regional Council and the Minister of Conservation are responsible for the management of activities within the coastal marine area (CMA), which extends from the mean high water spring tide mark to the outer limits of the territorial sea.

The plan divides the CMA into a number of management areas. The Orakei basin is classified as a Special Activity Area. Within a Special Activity Area, special events may be planned where the organisers may request "exclusive use" of the management area. Outside these times, the Special Activity Areas are available for use by the public. Generally, Special Activity Areas are maintained to be suitable for boating events.

The plan identifies the Orakei Basin as Orakei Basin tuff ring and explosion crater as a nationally important geological feature and an Area of Significant Conservation Value. In addition to this, the plan also identifies the Orakei Basin as a Coastal Protection Area. The plan states:

"This area is a breeding area for a variety of shag species. Orakei Basin and Hobson Bay (51a) are feeding areas used by these birds along with a variety of other coastal and wading birds. There are two features of geological significance in the area. Orakei Basin (51b) itself is a large, conspicuous explosion crater and associated tuff ring

that has been breached by a stream and invaded by rising sea level... Both of these geological features are considered to be nationally important and the Department of Conservation has selected both as Areas of Significant Conservation value (ASCVs)."

Generally, a coastal permit (resource consent) will be required for works within the CMA, for example, the erection of structures or the removal of sediment from the seabed.

11 Auckland Regional Policy Statement

The Auckland Regional Policy Statement has policies and methods relating to 'matters of significance to Iwi', for the protection of cultural heritage and sites of natural heritage value and for sites of geological significance. The policy statement lists the Orakei Basin as a Significant Natural Heritage Area:

"Orakei Basin is a phreatic explosion crater which formed a freshwater crater lake (maar) which has been breached to form a tidal mudflat. Subsequently the basin has been closed off by the railway embankment and the water level and flushing of the basin is now controlled. Little shags, pied shags, and little black shags nest around the basin. This volcanic features is considered to be of national importance."

The District Plan rules (referred to below) must not be inconsistent with the Regional Policy Statement.

12 Auckland City District Plan (Isthmus) (1999)

Under the Auckland City District Plan (Isthmus Section), the subject areas of land are predominantly zoned Open Space 2 (informal recreation) with the exception of two areas of unformed road and a relatively small parcel which is zoned Residential 6a. Auckland City holds this parcel under a long-term lease and it functions as part of the Orakei Basin West Reserve.

The objective of the Open Space 2 zone is to protect areas of open space for the enhancement of the environment and the enjoyment of informal recreation. Policies seek to maintain open character and visual amenity, limit activities to those suitable to informal recreation use, manage parking provision and to restrict earthworks and the removal of native vegetation. In general buildings are not encouraged, with the exception of structures necessary for the use and management of particular sites.

The District Plan planning maps identify the basin area to contain category C archaeological and geological features for protection. This prevents the destruction or alteration of these features whilst making provision for very minor professional geological sampling for scientific study. Geological features that are scheduled for protection in the plan are protected because of their scientific, historic, visual or educational value.

The subject land is also identified as being within the Coastal Management Area. Part 5B of the District Plan imposes strict controls on activities and developments proposed within the coastal environment to ensure that the design, appearance and location of buildings and structures are in sympathy with the natural and physical character of the coastline. Any proposed earthworks are to be in keeping with the existing landscape and minimise impact on water quality.

Within the Coastal Management Area, a Coastal Protection Yard is applied to all land 10 metres land ward of the mean high water spring tide mark. This provides further controls on the construction of buildings, car parking and removal or alteration of trees, to retain the natural character of the coastal environment. Indigenous vegetation and most exotic trees over six metres in height within the Coastal Protection Yard are generally protected.

Overall, the District Plan imposes rules regarding the development of coastal edge land that restricts the range of land use activities that can be carried out without a resource consent.

13 Our Collective Taonga – places for people, places for nature

People choose to live, work and play in Auckland amid an amazing natural landscape of volcanoes, harbours, coastlines and islands, with the city's parks and beaches offering a wide range of recreation, lifestyle and outdoor experiences.

This draft management plan has been prepared in the context of the Auckland City Council's open space framework. Our Collective Taonga – Places for People, Places for Nature, provides the framework for the council to ensure we make the best of our city's open spaces.

The outcomes for the city established by Places for People, Places for Nature are an integrated network of open spaces across the city that:

- are of world class quality and celebrate Auckland's amazing natural landscape, unique identity and cultural heritage
- offer a diverse range of recreation and lifestyle experiences and activities, which provide a visitor experience second-to-none
- meet local needs, are accessible to all, create pride in Auckland and foster a sense of belonging to the city
- are safe, clean, green and highly valued for their contribution to the city's sustainability, green infrastructure and environmental systems.

To achieve the outcomes for the city, we need to understand the challenges and issues facing our open spaces. Of particular relevance to the reserves covered by this management plan is the challenge of conserving and enhancing our open spaces as the city's population grows, without compromising enjoyment and use. We also need to cater for the needs and values of an increasingly diverse community and encourage broader community participation.

The reserves covered by this management plan provide an important opportunity to implement Places for People, Places for Nature as a well-connected open space network providing a wide array of benefits to people and wildlife and helping to conserve natural ecosystems.

Three overarching principles form the basis of the open space framework. They respond to the challenges facing Auckland's open spaces and set out how we intend to achieve the outcomes we are seeking for the city. They give clear direction to this management plan for the future protection, improvement and management of the reserves around Orakei Basin.

1 Respect our amazing natural landscape

The celebration of Auckland's amazing natural landscape through the protection and enhancement of volcanic features, urban forest, streams and habitats are important areas of focus relevant to the Orakei Basin reserves.

2 Link people to places

We will increase the use and enjoyment of open spaces through a well connected network including neighbourhood parks and play spaces, volunteering activities, active and passive recreation facilities, coastal access, walkways and cycleways.

3 Create and maintain sustainable places

The focus is on stormwater management, natural processes (such as soil and sand erosion), wetland, streams, natural water systems, urban vegetation, biodiversity, connecting habitats to provide regional ecological corridors, and open space management and maintenance practices.

14 Parks Plan

The parks plan is the action plan for 'Our Collective Taonga - places for people, places for nature' relating to the parks and green spaces component of Auckland's open space network.

The objectives for the future development and acquisition of parks and green spaces in Auckland provide guidance to this management plan in three key areas:

1 Improve the quality of our parks

Focuses on addressing issues with the quality of the parks we already have, how easy and safe they are to get to and use and the way they are designed, managed and maintained. For Orakei Basin, this guides us in ensuring that there are adequate facilities provided for users of the reserves, in integrating sustainability approaches into park management practices including weed, pest and waste management.

2 Strengthen Auckland's park network

Focuses on protecting our parks, developing green corridors and park networks across the city and along the coast, and enhancing their ecological, heritage and biodiversity values.

It provides guidance for addressing encroachment issues, making connections between areas of open space, as provided for in the Orakei Basin walkway project, land acquisition to fill important gaps in the network, and revegetation and habitat restoration to strengthen ecological corridors.

3 Increase park use and enjoyment

Focuses on enhancing the social value of our parks, developing our parks to offer a diverse range of open space experiences that meet community needs and encouraging broader participation in park use, design and care.

15 Urban Forest Plan

The urban forest plan is the action plan for 'Our Collective Taonga - places for people, places for nature' relating to the vegetation component (including habitats and ecosystems) of Auckland's open space network.

The objectives for the future of the urban forest help support this management plan in four key areas:

1 Improve our knowledge base

Focuses on building a clear picture of Auckland's urban forest, and developing a strong evidence base for local and global benefits of the city's forest.

2 Strengthen Auckland's urban forest

Focuses on conserving and enhancing the native and non-native plantings that comprise the urban forest, on both public and private land, and applying an ecosystem approach to planning, design, management and maintenance of the urban forest. Planting programmes in environment/heritage parks and on waterways and coastal fringes are a priority.

Programmes for invasive weed and general pest control management should be strengthened.

There is also a focus on communicating measures to maintain health and longevity of trees to landowners and providing information that encourages the planting of appropriate species on their land. This information is particularly relevant for owners of land adjacent to the reserves around the Orakei Basin.

3 Increase the range of native biodiversity

Provides a focus on protecting and restoring native habitats and ecosystems in areas like the Orakei basin to provide connections, wildlife sanctuaries and stepping stones for native species.

4 Celebrate Auckland's urban forest

Focuses on reflecting Auckland's amazing natural landscape and identity in the urban forest, engaging the community and actively encouraging partnerships, and promoting and advocating the value of the city's urban forest to the long-term sustainability of Auckland. The community could become actively involved in the urban forest around the Orakei Basin through planting, education and ongoing care programmes.

Appendix 2:

Extract from Ecological survey of Auckland City Reserves around the Orakei Basin and Waitarua Creek, 2010, by Craig Bishop, Senior Ecologist, Auckland City Council.

Ecosystems in all the reserves were mapped following field surveys by Heritage Team ecologists (Craig Bishop, Emily Roper and Mei Nee Lee).

Information from these separate surveys was then combined into one master ecosystem map for all the reserves around the Orakei Basin and Waitarua Creek (Figure 1). Boundaries between different ecosystem types on this map were drawn based on their vegetation composition and management requirements.

The different ecosystems are described separately below. They have been grouped by their general composition/ use first (type 1, 2, 3 etc.) and then by geographical location or species mix within each general type (1A, 1B, 1C etc.). This creates 30 different types of habitat/ ecosystem. The management requirements of each habitat patch are outlined in Sections 4 and 5. The area figures for all the various ecosystem types are also summarised in Appendix 5.

Type 1 ecosystems – open pasture and recreational areas (2.32 ha total)

1A Orakei Basin boulevard (0.79 ha)

This type comprises a flat area of mown exotic grassland (with a few scattered trees, including one large weeping willow) on the Orakei Basin 'beachfront'. The area has high usage for recreation, picnics, dog-walking etc. Value as habitat for native plants and animals is negligible, although some bird species (mostly exotic, but occasional native marine/ water birds) use the open grassland for foraging and resting. The rockfield and concrete wall along the basin margin has a scattered coverage of various exotic herb species and a few native plants that are able to tolerate periodic inundation with salt water, such as matata, pohutukawa and Sarcocornia.

1B Orakei west crater rim walkway (0.70 ha)

Mown grassland running along the rim of the crater from the Upland Road access point, to vehicle access off Orakei Road. Vegetation is mostly mown exotic grassland, but the type also includes some cleared patches along the margin of the steep escarpment that drops away to the base of the crater. Vegetation in these areas is much more weedy, and includes tall privet trees, privet saplings, agapanthus, wattle saplings and The area appears to have moderate recreational use, mostly from people using it as a through track, rather than for picnicking, ball games etc.

1C East reserve pasture gap 1 (0.07 ha)

Small grassy clearing on the margins of Orakei Basin East Reserve, including a small patch of recently sprayed and planted habitat. The patch forms and open access corridor from 26 Lucerne Road to the walking track around the basin. The patch has negligible value for native biodiversity currently.

1D East reserve pasture gap 2 (0.04 ha)

A small grassy clearing on the margins of Orakei Basin East Reserve. The patch appears to be encroachment on the reserve, at it includes part of the driveway and yard of 76L Lucerne Road. The patch has negligible value for native biodiversity currently.

1E Orakei Road clearing 1 (0.05 ha)

Mown grassland, surrounded by privet forest and residential properties, on the steep west-facing slopes of the tuff crater rim above Orakei Road. The area appears to have very limited recreational usage by the public. This site is an obvious candidate for some sort of restoration planting (see management section).

1F Orakei Road clearing 2 (0.10 ha)

Mown grassland surrounded by privet forest on a shelf cut into the west face of the tuff crater rim, just above Orakei Road. The area appears to have very low recreational usage, although there is a large fruit tree on the edge of the clearing and a children's swing has been hung from one of the branches.

1G West reserve privet treeland (0.11 ha)

Mature privet trees that form a broken canopy over areas of mown grassland and bare earth. Many of the trees have abundant growth of saplings, shrubs and epicormic shoots around the base of their trunks. The trees provide a more shaded environment for passive recreation, but this area appears to have very low public usage, probably due to the high road noise and lack of views. The trees are large and provide habitat for a range of bird and invertebrate species, however most of these are exotic species, and the abundant fruit produced by these trees creates a weed problem in nearby areas of indigenous forest.

1H Upland Road bush margin (0.21 ha)

Thin band of rank grassland, bare earth and exotic ruderal herbs growing on the steep slopes of the crater rim that descend to Orakei Basin below Upland Road. Some of these slopes are near vertical (i.e. cliffs). Restoration planting has been carried out on some of the steep sections of bank in the northern part of this type (the main species are mountain flax, toetoe, whau and mahoe), however most of the seedlings are still quite small, and are surrounded by dense regeneration of exotic herbs. Open ground in the southern part of this type has very few natives (naturally dispersed or planted) and is dominated by a number of problem weeds, such as nasturtium, ivy, tree privet, Japanese honeysuckle, agapanthus, gorse, blue morning glory, boneseed and calystegia.

1I McPherson St Reserve clearing (0.02 ha)

Recently cleared area on steep slopes surrounding the stairway access to the reserve from McPherson St. The bare earth is being colonised by a variety of herbaceous weeds and seedlings of weedy climbing plants. There is a low density of small planted native seedlings (such as flax and Carex species) planted throughout.

1J Bonnie Brae Reserve park and grassland (0.14 ha)

Pocket park; a small area of mown grassland with scattered trees and a children's playground. Negligible value as habitat for native species, although the park does bring people into contact with the walking track through the area of better quality native forest on the lower slopes of Bonnie Brae Park (see 4F).

1K Kelvin Reserve grassland (0.09 ha)

Mown grassland around several emergent trees (including a large pohutukawa and eucalyptus species). Negligible ecological values.

Type 2 ecosystems – built infrastructure areas (0.5 ha total)**2A Boat ramp infrastructure area (0.41 ha)**

Infrastructure (buildings, paved road and car parking) associated with the sea scouts and boat ramp. Some large (non-weedy) exotic trees are emergent above this type, and they provide useful cover and extra habitat for birds.

2B Water-ski club infrastructure area (0.09 ha)

Buildings associated with the water-ski club, and surrounding mown grassland. Negligible values for native biodiversity, although some bird species (e.g. welcome swallow) do hawk for insects over the grassland and it provides an open area connected to the basin for waterfowl.

Type 3 ecosystems – mixed native/ exotic forest and scrub (1.43 ha total)**3A Waterfront forest and scrub (0.28 ha)**

A narrow band of vegetation along the basin waterfront, situated between the sea-scout hall and access road and the coastline. Vegetation is large, mature coral trees emergent above a much lower shrub tier of planted natives with the occasional woody weed species. The most important species in these planted 'shrubberies' are koromiko (dominant) with karamu and flax, and a scattering of species such as kawakawa, cabbage tree, puriri, houpara and karaka. This type has relatively low ecological value due to its narrowness and dominance of exotic plants, but is important for amenity and buffering.

3B East reserve forest block 1 (0.49 ha)

A wider (c.30-40m) band of forest vegetation on the more gently sloping lower slopes of the tuff crater rim. Species composition is mixed native and exotic, and the community looks like a planted area that has been invaded by woody weeds following planting. Tree privet, cabbage tree, ngaio, wattle and tarata are emergent over a canopy dominated by mahoe and karo. The shrub and understorey tiers are composed of mostly native shrubs and trees; notably karamu, taupata (which is a coastal fringe plant, and not appropriate in this type of habitat) and kawakawa. There are some small pockets of ivy and scattered tree privet regeneration. The dense cover of native plants and relatively high structural complexity of this type mean that it is good habitat for native flora and fauna. High recreational values due to the popular walking track through this type.

3C East reserve forest block 2 (0.66 ha)

This mixed native and exotic forest type is contiguous with 3b, but includes a much higher proportion of woody weed species (notably tree privet). Wattle trees are emergent above a dense canopy of tree privet and planted mahoe and karo, with abundant kawakawa in the shrub tier. The dense cover of woody vegetation and relatively high structural complexity of this type mean that it is good habitat for native flora and fauna. High recreational values due to the popular walking track through this type.

Type 4 ecosystems – better quality native forest, scrub and shrubland (3.27 ha total)

4A Upland Road escarpment (0.73 ha)

This type comprises an 8-10 m tall stand of dense, planted native forest with few weeds. The forest was planted on the rim of the Orakei tuff crater and includes gently to steeply sloping areas of volcanic tuff. The canopy is dominated by a mix of commonly planted native trees, including karaka, mahoe, and puriri, with karo, kohekohe, karamu and kawakawa dominant in the lower forest tiers. Less common natives include ngaio, kohuhu, pohutukawa, kanuka and pigeonwood. There is a lack of native long-lived tree species, and shrub and ground tier plants, which would be common in natural stands of forest vegetation on the Auckland isthmus. It is an appropriate time to establish some of these 'missing' species within this vegetation type to increase local diversity and provide a seed source for expansion in this and surrounding sites.

This type receives regular weed control and is therefore almost weed free in its canopy and sub-canopy tiers, although there are some weeds in the shrub and ground tiers (Appendix 2). Most (c.93%) of the weed seedlings are short-lived herbaceous species, although there is a scattering of longer-lived woody plants and climbers that are important ecological weed species (i.e. tradescantia, phoenix palm, tree privet, moth plant and ivy).

This suggests that weed control will be an ongoing requirement in this type, and other higher quality areas of native vegetation, to ensure they are not 'taken-over' by weeds. This level of weed infestation, even in areas receiving active weed control, is not surprising given the abundant seed source for these species in the surrounding landscape.

4B Orakei Road high escarpment (1.26 ha)

This type comprises a 5-10 m tall stand of planted native forest that lies just to the north of type 4A. The vegetation appears to be younger than 4A, although this may be due to slower growth rates on this part of the tuff crater rim, which is much steeper and higher than the type 4A site (the crest of the crater rim here is 18-26m altitude vs. 8-18m for type 4A). The species composition of this forest is somewhat different from 4A. The canopy is dominated by ngaio, mahoe and karo, with kawakawa, cabbage tree, karaka, whau, puriri and koromiko as important secondary species. Other more scattered trees and shrubs include manuka, bush cabbage tree, five-finger, and houpara.

This type is relatively weed free, although there are some ecological weeds along the top margin (see type 1B) and scattered wattle throughout. Most of the planted natives are appropriate for this site, and include common colonising native plants and some mature forest species (e.g. puriri and karaka). However, the widespread use of ngaio⁸ is not appropriate, and more species typical of mature native coastal forest will need to be established in order for this type to transition to a sustainable stand of native forest.

4C Coral/ native plants (0.07 ha)

This type comprises planted natives almost identical to type 4B, but with mature coral trees emergent over the planted natives. The coral trees are non-weedy, i.e. they do not appear to be seeding into the surrounding natives. They also provide an excellent source of nectar for local tui when in flower.

4D Orakei Road low escarpment (0.36 ha)

This type comprises an area of planted natives that is much more open in terms of its canopy cover, lower and weedier, in comparison with types 4A, 4B and 4C. The vegetation is growing on a lower (crest is c.8-12m altitude), but still steep section of the tuff crater rim. Surface erosion is obvious in many parts of this type and the walking track (which is cut into the crater wall) is slumping in many places with most of the gravel from the track being eroded down the slope into the basin. The diversity of native plants in this type is higher than other planted areas and suggests the site has been planted out on several occasions and that these plantings were carried out around some small patches of existing native vegetation.

The most common native trees and shrubs in this area are mahoe, kawakawa, karamu and karaka, with pohutukawa, koromiko, flax, toetoe, hangehange, mapou, bush cabbage tree, nikau and silver fern as important secondary components. A large number of other native plants, including ferns and groundcovers are present, notably *Coprosma grandifolia*, kohekohe, five-finger, rangiora, hook grass species, miro, houhere, whau, totara, kanuka, kohuhu, houpara, kiokio, cutty grass, *Blechnum* species and

Asplenium species. Unfortunately the more open nature of this type means there is also greater concentration of woody weeds. Tree privet has obviously been cleared from this type in the past, but scattered saplings of tree and Chinese privet remain. This type will need long-term management of weeds in order to ensure a denser stand of native plants establishes over time. Examination of the plants beginning to colonise a recent canopy gap that was surveyed in more detail underlines the size and long term nature of the weed problem in this type. A range of exotic herbaceous weeds, wattle, and tree privet were the dominant plants, along with scattered woolly nightshade, and the only native woody species present were a few scattered mahoe.

4E McPherson Reserve planted natives (0.53 ha)

This type comprises recently planted areas of native shrubs, flax etc. This native community has been planted following the clearance of the highly weedy forest and vineland vegetation that previously occupied the site. ACR Services is continuing its programme of weed clearance and new plantings in this reserve, as funds allow, with vegetation type 5F being progressively cleared and replaced with planted natives (type 4E). The most common planted species include karaka, flax, whau, toetoe, ngaio, manuka, puriri, mahoe, karo and koromiko. This species mix is generally appropriate, although the amount of ngaio could be reduced (see footnote 3 above). At this stage the plantings are relatively small (1-3m) which leaves large areas of bare ground between the individual plants, but the ground is mulched and weed control is ongoing.

⁸ In natural situations, ngaio is usually confined to exposed areas of coastal habitat and duneland vegetation. However, because this species is easy to source, is fast growing, and has a growth habit which creates a spreading 'umbrella like' canopy that shades the ground tier and suppresses weed growth in the understorey, it is planted widely in parks throughout Auckland.

4F Bonnie Brae Reserve planted natives (0.16 ha)

The type comprises a small, mature stand of planted native forest, with a relatively dense canopy, on steep slopes above the Meadowbank/ Waiatarua Stream. Tree privet probably invaded the native saplings fairly soon after they were planted, and is now widespread in the canopy. The canopy is dominated by mahoe, with tree privet as an important secondary component. Other native species include kawakawa, ngaio, mapou, karaka, silver fern and titoki. Other weeds include monkey apple (scattered throughout the canopy) and tradescantia and ladder fern (which are common in the ground tier). This type is contiguous with a corridor of (mostly exotic) forest that follows the Meadowbank Stream corridor.

4G Kelvin Reserve planted natives (0.11 ha)

A small stand of planted native trees and shrubs (3-5 m tall) that has been invaded by a range of woody weed species. The type is relatively species rich for a small site, although there is lack of mature native trees and many of the natives that are currently present are reaching the end of their useful life-spans. Without active weed control and replacement, the weeds are likely to displace native plants over time. Native species include totara, cabbage tree, kohuhu, karamu, mahoe, mapou, kawakawa, Gahnia setifolia, mamaku and kanuka. Important exotic weed species include wattle, Phoenix palm, woolly nightshade, cotoneaster, Japanese honeysuckle, tree privet and hawthorn.

4H Waiatarua Reserve (0.05 ha)

A small fragment of planted native forest, dominated by a stand of tall spindly kohuhu that is reaching the end of its life and has been invaded by a range of common ecological weeds (notably bamboo, montbretia, ginger, smilax, tree privet, ivy and tradescantia). However, native species still comprise most of the biomass in this type. Native species of secondary importance include kawakawa, karaka, karamu and mahoe.

Type 5 ecosystems – exotic dominated forest and scrub (3.5 ha total)

5A Orakei east exotic forest (1.24 ha)

Area of forest and vineland dominated by exotic trees, shrubs and climbers in a narrow strip along the lower edge of the crater margin, adjacent to the basin shoreline. The basin circuit, a very popular walking track, runs through this ecosystems type, close to the shoreline (c.2-10m). Exotics that are more common include tree privet, coral tree, phoenix palm, oak, ivy and Prunus species. There are scattered woody natives such as mahoe, karamu and mapou through the sub-canopy and shrub tiers. The property boundaries in Spatial i, suggest there has been some encroachment of gardens in the adjacent residential properties into this type, and it therefore includes some more cultivated areas of vegetation. While this type has relatively low value for indigenous plants its size, structural complexity and

location along the shoreline means that it provides useful habitat for native birds and buffers/ shelters the basin area from some negative external effects (noise, visual shielding, water runoff etc.).

5B Orakei east bamboo/ cleared area (0.15 ha)

A relatively small type (surrounded by type 5A) that was formerly covered in a dense thicket of bamboo but has recently been cleared, mulched and re-planted.

5C Orakei Road escarpment privet forest (0.79 ha)

Exotic dominant forest on steep west facing slopes of the tuff crater rim above Orakei Road and the Hobson Bay coastline. The type appears to originate from natural colonisation of the steeper parts of these slopes by (mostly weedy) plants over time. Vegetation comprises scattered emergent poplars over a dense canopy of tree privet. The understorey and shrub tiers are also dominated by tree privet. However, other exotic (e.g. hawthorn, pampas, wattle and ivy) and native (mahoe, mapou, totara, tarata, puriri, karamu, kawakawa and karo) plants are scattered throughout. Some of the native saplings appear to have been planted, particularly those along the top margin of this type. Pohutukawa, kohekohe and ngaio have been planted along the top margin. While most of the plant biomass in this type is exotic species, it provides useful habitat for some native fauna.

5D Railway privet forest (0.03 ha)

Very small pocket of tree privet dominated forest, adjacent to the railway line, at the north-western extremity of the Orakei Basin reserves.

5E Lucerne Road forest (0.36 ha)

Mature privet forest with numerous other exotic trees and shrubs. This site is not directly accessible and was only briefly surveyed, from a distance, using binoculars.

5F MacPherson Street Reserve exotics (0.63 ha)

Weedy forest and vineland dominated by tree privet and several weedy climbers (including moth plant, mile-a-minute vine, ivy and banana passion fruit). Woody species of secondary importance include woolly nightshade, mahoe and karamu. The vegetation is growing on steep to moderate slopes above the mouth of Waiatarua Creek. This type is being progressively cleared and replaced by native plantings, and work is on-going in 2009. Low value for native plants, but the type has some value as fauna habitat and a coastal buffer.

5G Bonnie Brae Reserve exotics (0.30 ha)

Tree privet dominant forest contiguous with type 4f (which has a much higher density of native plants) growing on steep slopes above Meadowbank Creek. Species of secondary importance include Chinese privet, ginger, smilax, mahoe and karamu.

Restoration and enrichment planting

With the exception of very small fragments, all the native vegetation surveyed for this report comprises habitat that was established through the use of restoration plantings. The success of these plantings (in terms of how severely they have been invaded by weeds) appears to vary from type-to-type. The level of weed infestation at any one location is probably based on a range of different historical factors such as, what type of native trees were originally planted, the initial planting density, the size of the planted 'patch', and the regularity of post-planting management (e.g. replacement planting and weed control). Future planting programmes should look to build on successful examples. Therefore, it is critical that thorough records on the 'style' of planting (e.g. species used, planting density, time of planting, post planting management (weed release, watering etc.), who planted them) and subsequent success (e.g. survivorship and growth rates) are kept, as this information can be used to increase the value and lower the cost of future plantings.

A strategic restoration plan that addresses plantings (and post-planting management) in all the different reserves across the wider Orakei Basin needs to be drawn up. This plan should be based on a realistic assessment of the likely level of resources that are

available to carry out the work; including both Auckland City Council and community resources. Committing resources to planting in small areas where no follow-up weed control etc. is likely to be a waste of time and money in the long run, as these plantings will be overrun by woody weed species. The restoration plan should address the following issues:

- 1 Identify areas for which restoration is an urgent priority because good quality native vegetation is being displaced and/or a small amount of planting is likely to result in a big gain for indigenous biodiversity. Some of these are identified in Section 4.4;
- 2 Incremental replacement of weed dominated forest and scrub with planted native species. The best approach to this is to take the 'moving front' approach outlined for weed control;
- 3 Enrichment planting of good quality areas of native forest (e.g. types 4A, 4B and 4C). Many of the native dominated areas of vegetation comprise mainly short-medium lived tree species that are typical 'pioneer' species (e.g. ngaio, kanuka, karamu, kohuhu, tarata). These pioneer plants have a limited life-span and, in natural systems, as they died they would be replaced by longer lived native plants that had established in the forest understorey (e.g. rimu, totara, matai, puriri, taraire, karaka, kohekohe, titoki and mangleao).

However, the lack of a natural seed source for these longer-lived species in the surrounding landscape means that they are absent (or present at only very low densities). Enrichment planting would seek to establish a good cohort of mature native species that are 'typical' of natural forest ecosystems in the understorey of existing stands of native vegetation;

- 4 Some parts of these sites where it would be desirable to establish native plants have physical conditions that make the conventional 'digging a hole and planting a native tree' approach to restoration more difficult. Typically, these sites are very steep and/or have very thin soils. Some more innovative approaches to restoration may need to be taken in these locations (e.g. pinning manuka brush to the ground or spraying weeds and spreading pohutukawa seed across the bare substrate). The best approach is just to try some different techniques and keep good records about what was done, what it cost (in terms of time and \$) and how well it worked.

Summary of management actions

A number of possible management actions are outlined for the various ecosystem types in the Orakei Basin reserve network. Priorities for these different management actions are provided in Table 2. The priorities in Table 2 have been assigned on a purely ecological basis, with priority given to those projects that will have the maximum return for biodiversity and are more practical (i.e. they are easy to implement and involve a relatively small commitment of resources). The local Orakei community and other interested stakeholders are likely to have different priorities to those based purely on biodiversity, and it is appropriate to consult with these groups before committing substantial resources to any improvement projects.



Orakei Basin reserves ecosystems

Site and vege type (see map on page 49)	Management action	Short term priority	Medium term priority	Long term action
1A	Enhance density of salt tolerant native plants along the 'waterfront'			X
1B	Weed control along margin with 4B, remove woody weeds, spray weedy climbers on annual basis to reduce weedy seed rain into adjacent good quality native vegetation	X		
	Establish native plants along steep weedy margin with 4B, may require innovative planting techniques		X	
	Restoration of native forest vegetation (or treeland if recreational areas to be retained) on flatter pasture areas along the crater rim (while maintaining track, picnic areas and views)			X
1C	Restoration with native scrub to provide a wider buffer around the basin, but preserve walking access		X	
1D	Restoration plantings would increase the size of the adjacent area of habitat. Should be done in conjunction with weed control/ planting in type 3B		X	
1E	Restoration plantings to increase area of adjacent habitat (5D) when this is 'improved'			X
1F	Restoration plantings to increase area of adjacent habitat (5D) when this is 'improved'			X
1G	Remove mature tree privet trees		X	
	Plantings to replace cleared areas of privet treeland with a sparse canopy of appropriate native specimen trees (e.g, puriri, titoki, pohutukawa)		X	
1H	Weed control along margin with 4A, remove woody weeds, spray weedy climbers on annual basis to reduce weedy seed rain into adjacent good quality native vegetation	X		
	Establish native plants along steep weedy margin with 4B, may require innovative planting techniques		X	
1I	Plant out with low stature native ground cover species to suppress weed regeneration	X		
3A	Weed control to remove woody weeds, and spray weedy climbers, on an annual basis	X		
3B	Poison large privet trees in-situ and remove saplings		X	
	Enrichment planting of native species, including mature forest plants		X	
3C	Remove privet trees and replant with native species, including mature forest plants			X

Table 2: Priorities for the management actions. Short term/ priority actions (1-2 year time-frame) are needed to protect existing native vegetation or offer a big biodiversity gain for low expenditure of resources. Medium priority actions (2-5 year time-frame) are likely to involve more resources and/or are less urgent. Long-term actions (5-10 year time-frame) are more difficult and/ or resource intensive, or deal with threats that present a relatively low risk to native ecosystems.

Site and vege type (see map on page 49)	Management action	Short term priority	Medium term priority	Long term action
4A	Continue weed control to remove woody weeds, and spray weedy climbers, on an annual basis	X		
	Enrichment planting of native groundcovers and mature trees	X		
4B/4C	Continue weed control to remove woody weeds, and spray weedy climbers, on an annual basis	X		
	Enrichment planting of native groundcovers and mature trees	X		
4D	Target control of local weed infestations and replant with natives	X		
	Enrichment planting of native groundcovers and mature trees		X	
4F	Target control of local weed infestations and replant with natives	X		
	Enrichment planting of native groundcovers and mature trees			X
4G	Target control of local weed infestations and replant with natives		X	
	Enrichment planting of native groundcovers and mature trees			X
4H	Target control of local weed infestations and replant with natives		X	
	Enrichment planting of native groundcovers and mature trees			X
5A	This type is mostly weeds, retain non-weedy trees for cover, but remove all low vegetation and re-plant with native species		X	
5B	Continue current management, monitor native plantings and replace where necessary	X		
5C	Remove almost all vegetation, retaining the few native saplings etc. on the site, and re-plant with native species. Removal may need to be staged			X
5D	Remove privet and re-plant with native species. Removal may need to be staged	X		
5E	Remove weedy exotic species and encourage the establishment of a more native dominated understorey			X
5F	Continue programme of gradual removal and re-placement with native species		X	
5G	Remove privet and re-plant with native species			X

Table 2: Priorities for the management actions. Short term/ priority actions (1-2 year time-frame) are needed to protect existing native vegetation or offer a big biodiversity gain for low expenditure of resources. Medium priority actions (2-5 year time-frame) are likely to involve more resources and/or are less urgent. Long-term actions (5-10 year time-frame) are more difficult and/ or resource intensive, or deal with threats that present a relatively low risk to native ecosystems.

Appendix 3: Land acquisition

16 Acquisition of lands from Ngati Whatua

In the 1840s almost the whole of the Auckland Isthmus passed into European ownership. Stone (2001: 300) prepared a map showing the various land blocks, based on earlier research. This is reproduced as Figure 3.

The various areas under discussion here are in three of the original 19th century land blocks: Pukapuka No. 1 (Orakei East Reserve, Lucerne Rd Access), Pukapuka No. 2 (Kelvin Reserve, Waiatarua Rd Access, MacPherson Street Reserve, MacPherson St Access, Bonnie Brae Reserve and Meadowbank Reserve), and the Remuera block (Orakei West Reserve).

By 1845 almost all Ngati Whatua land on the isthmus had been purchased either by the Crown or Europeans under the 1844 Fitzroy pre-emption waivers except for the Orakei block and the lands between Hobson Bay and Remuera Road (see Figure 3: 6). These lands were the area reserved by Ngati Whatua for their own use and originally were not intended for sale. An exception to this was the Pukapuka block which Apihai Te Kawau had gifted to Ngati Mahuta chief and brother of Potatau, Kati Te Wherowhero, as "his place of abode." (Stone 2001: 291).

In the late 1840s and early 1850s the Crown proceeded to buy up the remaining Ngati Whatua land around Hobson Bay. At the western end the Crown purchased the Te Tiki I and II blocks in December 1847, the Te Tiki Block in October 1848, the Ohinerau Block in August 1851 and the Ohinerau II block in October 1853 (Alemann 1992: 125-6).

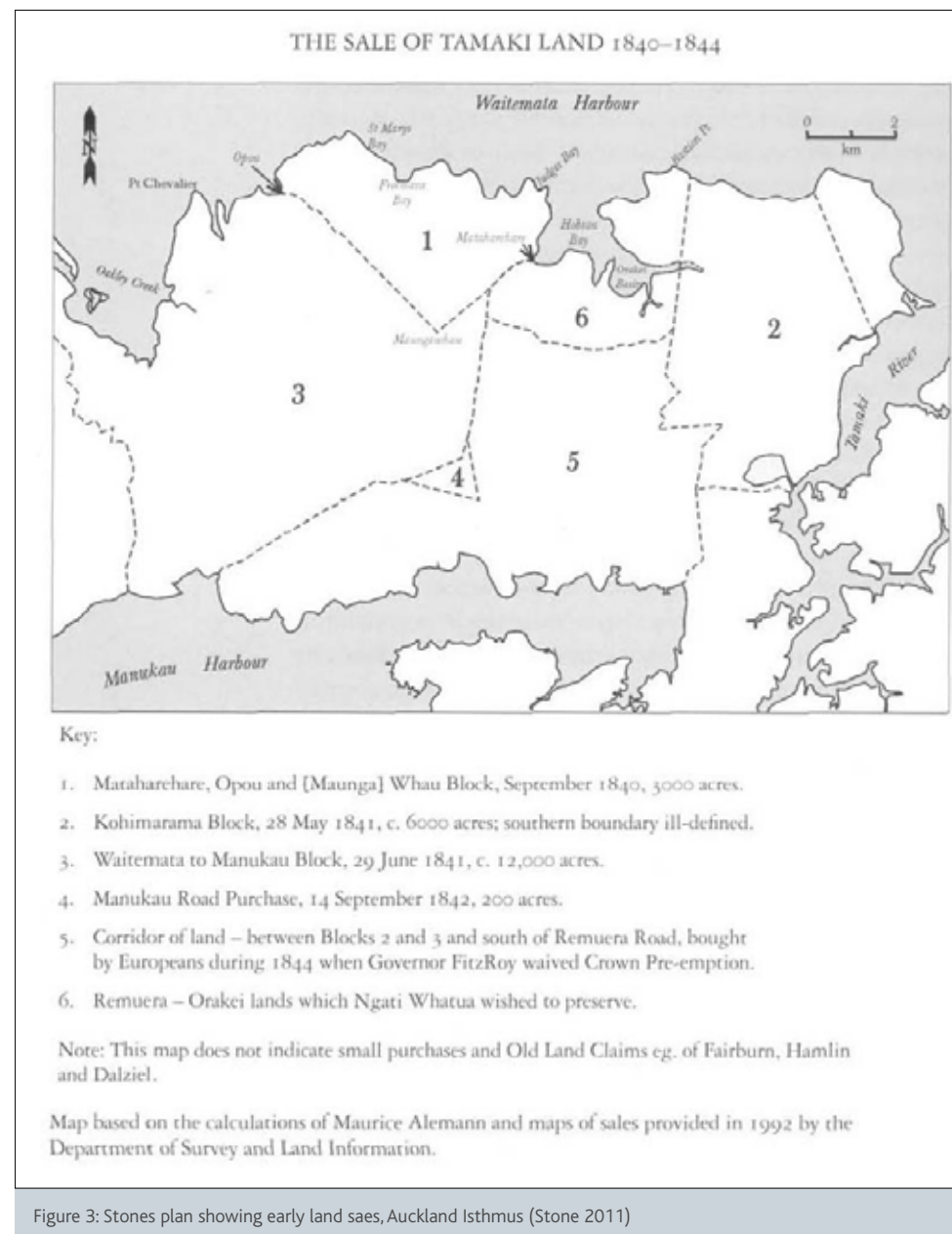
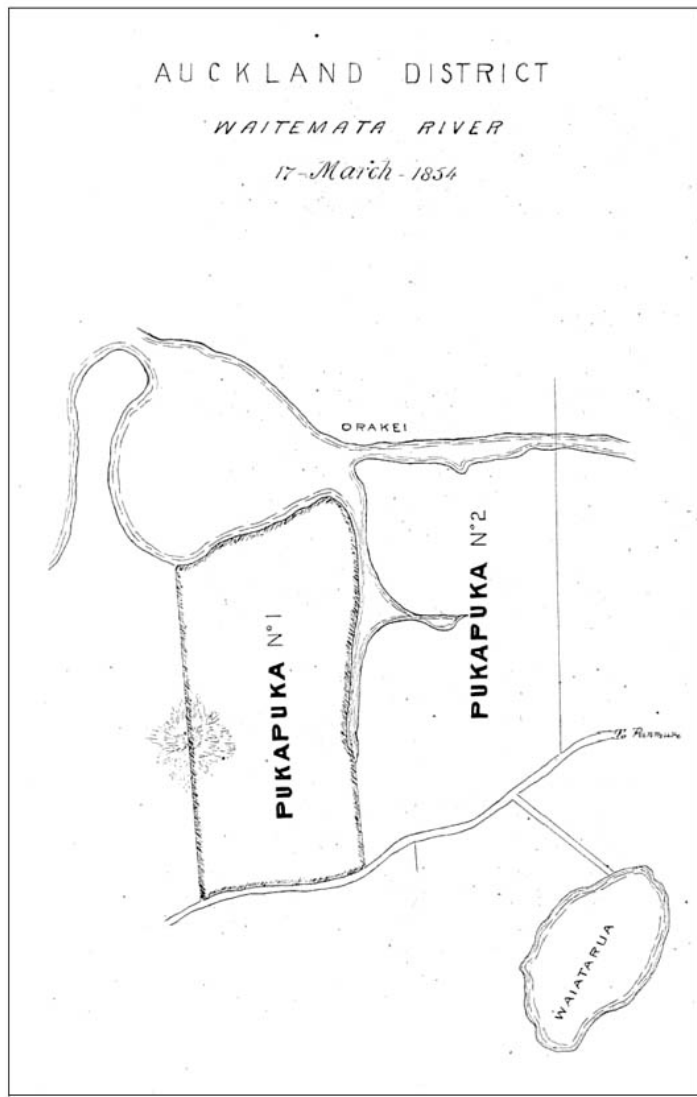
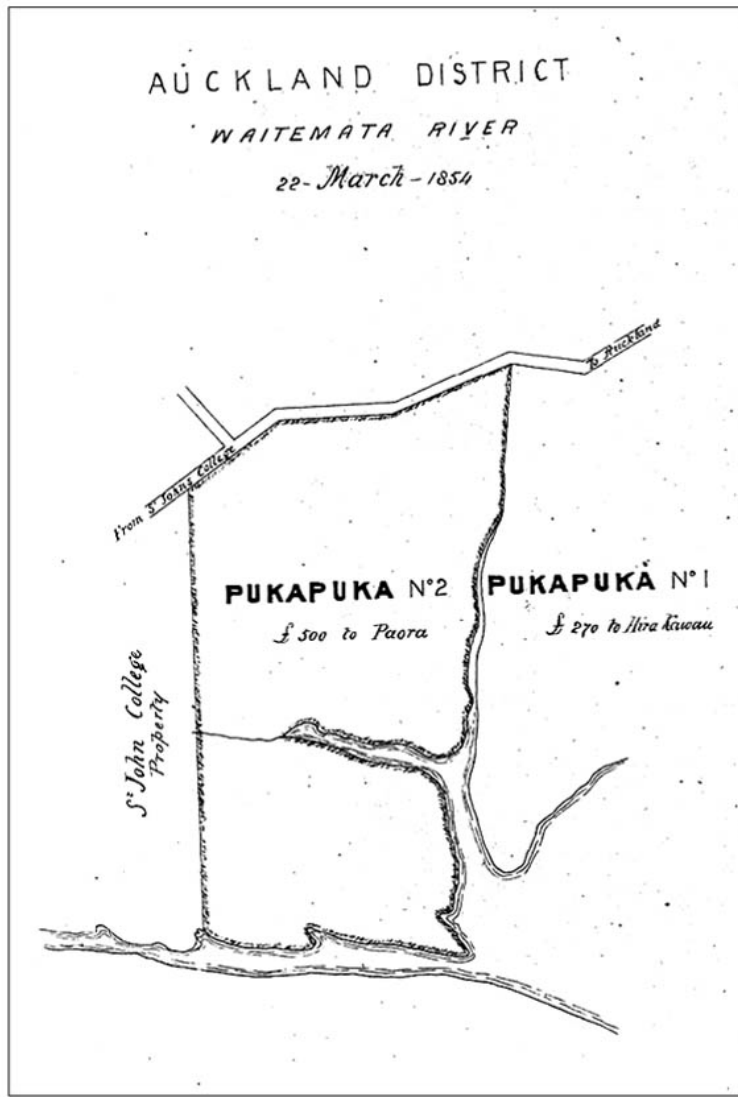


Figure 3: Stones plan showing early land sales, Auckland Isthmus (Stone 2011)



DEEDS 234: PUKAPUKA N° 1 BLOCK (Turton 1877b)



DEEDS 235: PUKAPUKA N° 2 BLOCK (Turton 1877b)
 NB: north is towards the bottom of the illustration

Pukapuka No. 1 was sold to the Crown by Te Hira Kawai, Apihai Te Kawai's son, on 17 March 1854 (Turton 1877a: 291, Deed 234). The boundaries of the block were described thus:

*"The Boundaries are these On the West by the turn in the Great road to Tamaki Boundaries going then in a direct line to the Pa called Rapanga-te-Uira continuing on in a direct line thence to a house on the bank near the Water side On the North by the Beach and continuing on up the Creek Pukapuka, on the East by a fence which joins the Cart road to Tamaki on the South by the Tamaki Cart road."*⁹

Figure 4: Pukapuka No.1 and No.2 blocks

⁹ The plan attached to the deed suggests Rapanga-te-Uira is at Maungarahiri (Little Rangitoto).

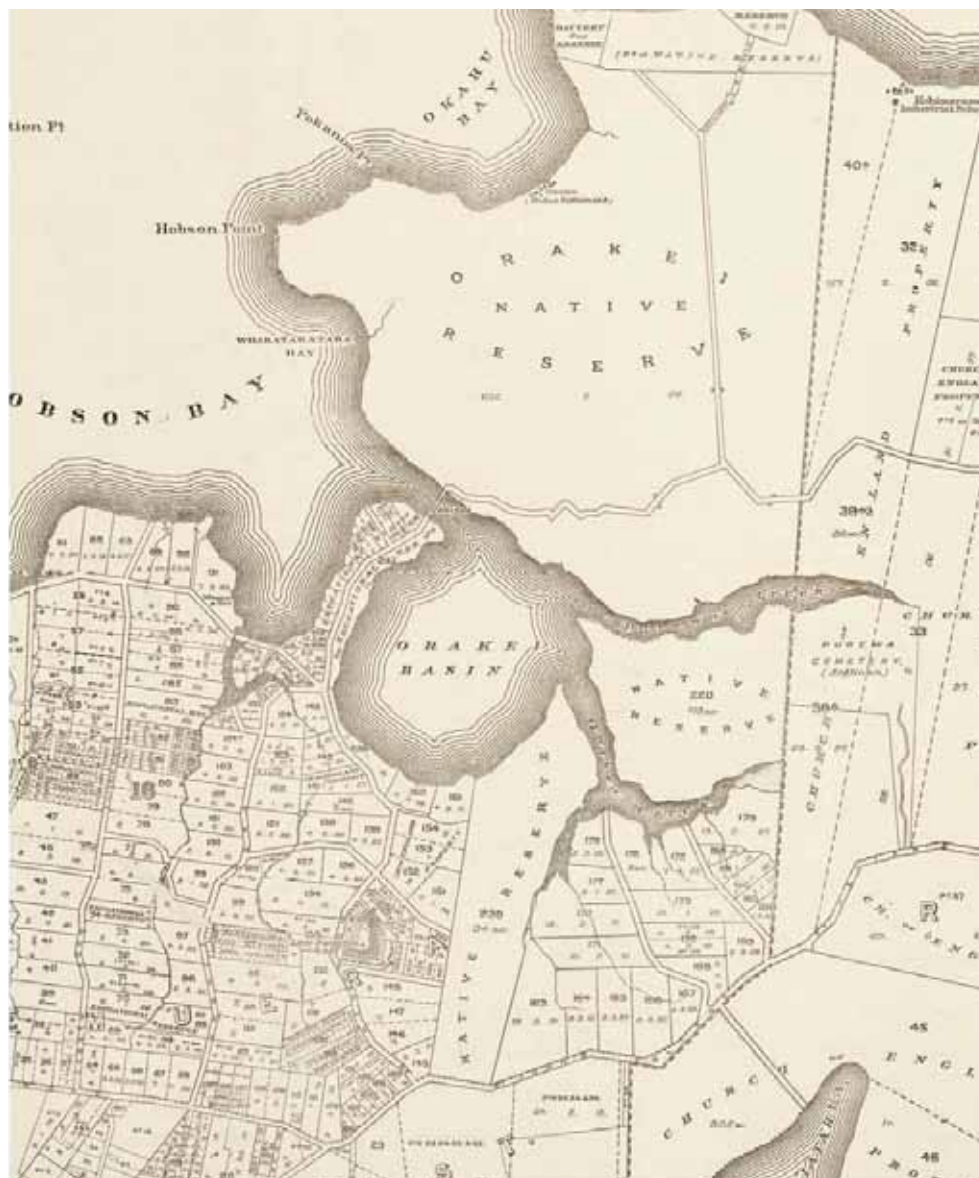


Figure 5: Plan shows Native Reserves on Pukapuka No. 1 and 2 blocks (Section of Lands and Survey Department plan " County of Eden Sheet 4" NZ Map 4658, APL. Reproduced by permission)

After the Crown purchased the block it created a Native Reserve (see Figure 5). This was Section 238 Suburbs of Auckland 16, an area of 94 acres. Alemann (1992: 127) notes that no Crown Grant is known to have been issued but that SO 667 (Figure 5) indicates that a grant was prepared in the name of Tamati Ngapora, Matutaera Papata and Matire Toha.¹⁰ The ownership of this block was investigated by the Native Land Court (21 May 1890) and the whole block was awarded to Ihapera Kati and a Certificate of Title (CT 70/130) issued in her name. A clause in the title made the land inalienable. After some partitions and after the restrictions on the sale of native reserve land were removed by the Native Land Act.

1909, it became owned by Messrs Earl and Kent (solicitors) who subdivided and sold the land (Alemann 1992: 127).

Pukapuka No. 2 was sold to the Crown by Paora Tuhaere on the 22 March 1854 (Turton 1877a: 291, Deed 235) and was described as:

"The Boundaries are these, on the East by the Government line on the North by the Creek of the Pukapuka On the West by a branch of the Pukapuka Creek being the Government boundary of the land as sold by the Hira to the Queen on the South by the Government line that is the cart road to St. John's College and to the Tamaki."

As with the No. 1 block, the Crown created a 103-acre Native Reserve here (see Figure 5), Section 220, Suburbs of Auckland 16. A Crown Grant for this property was issued to Paora Tuhaere in 1864 (Deeds 6G 945) under the Crown Grants Act 1862. Under this Act there were no restrictions on sale of the property. The land was leased to Cheeseman who subsequently purchased it in 1868.

The Remuera block was purchased at the end of 1854 or early in 1855. Alemann (1992: 128) notes that Turton (1877a) lists no deed for this land. Neither is any information available from LINZ. Alemann (1992: 128) refers to correspondence in Turton (1883) where the Native Secretary, H.T. Kemp, reports that the native owners (not named) were asking for £5,000 for this block (470 acres) in December 1854. He suggested that a purchase might be possible for between £1,500 and £1,800. In February 1855 he reported that a successful purchase had been made for £2,000. Plans that show the extent of the block are SO plans 667A and 669 (Figure 6 and Figure 7).

¹⁰ Matire Toha was the daughter of the Nga Puhi chief Rewa and wife of Kati Te Wherowhero.

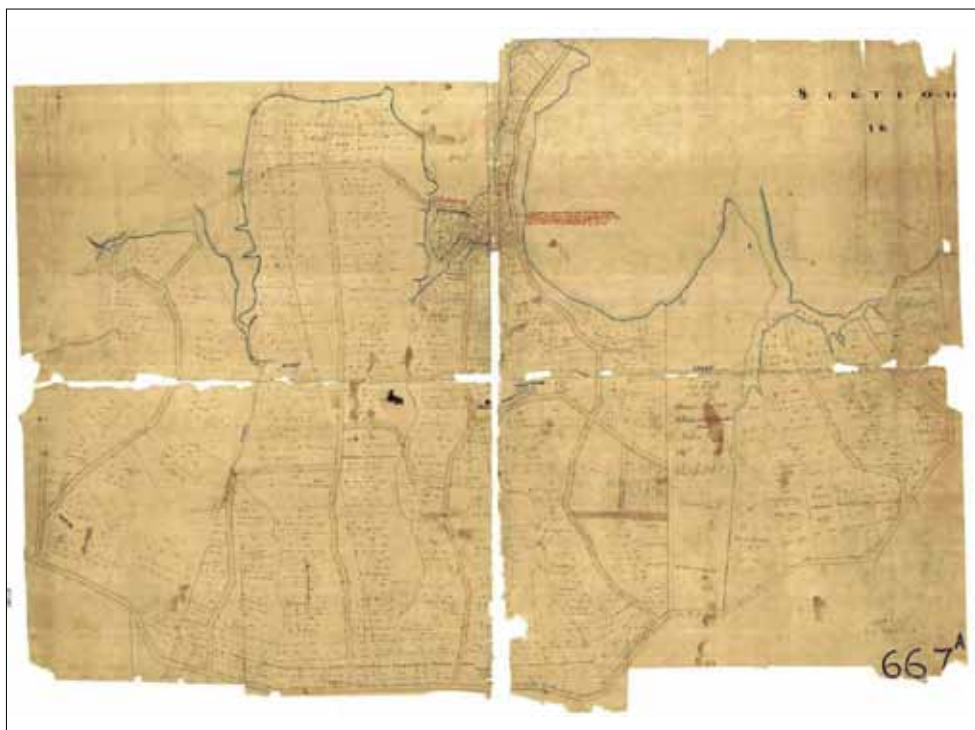


Figure 6: SO667A: Ohinerau, Remuera and Pukapuka No. 1 and 2 blocks

Turton (1883) provided a list of the 10 percent blocks (i.e.: the original purchase included a provision for 10% of the block was to be reserved for Ngati Whatua). He lists Pukapuka and Remuera blocks. However, it is clear that there is an error as the reference to the Pukapuka block is only to the Pukapuka No. 1 block.

The seller (Tuhaere) and the purchase price stated for the "Remuera" block listed are those for Pukapuka No. 2 block. The deeds record that both Pukapuka blocks had the 10% clause. Without the original deed it is not known if the Remuera block deed had a similar clause.

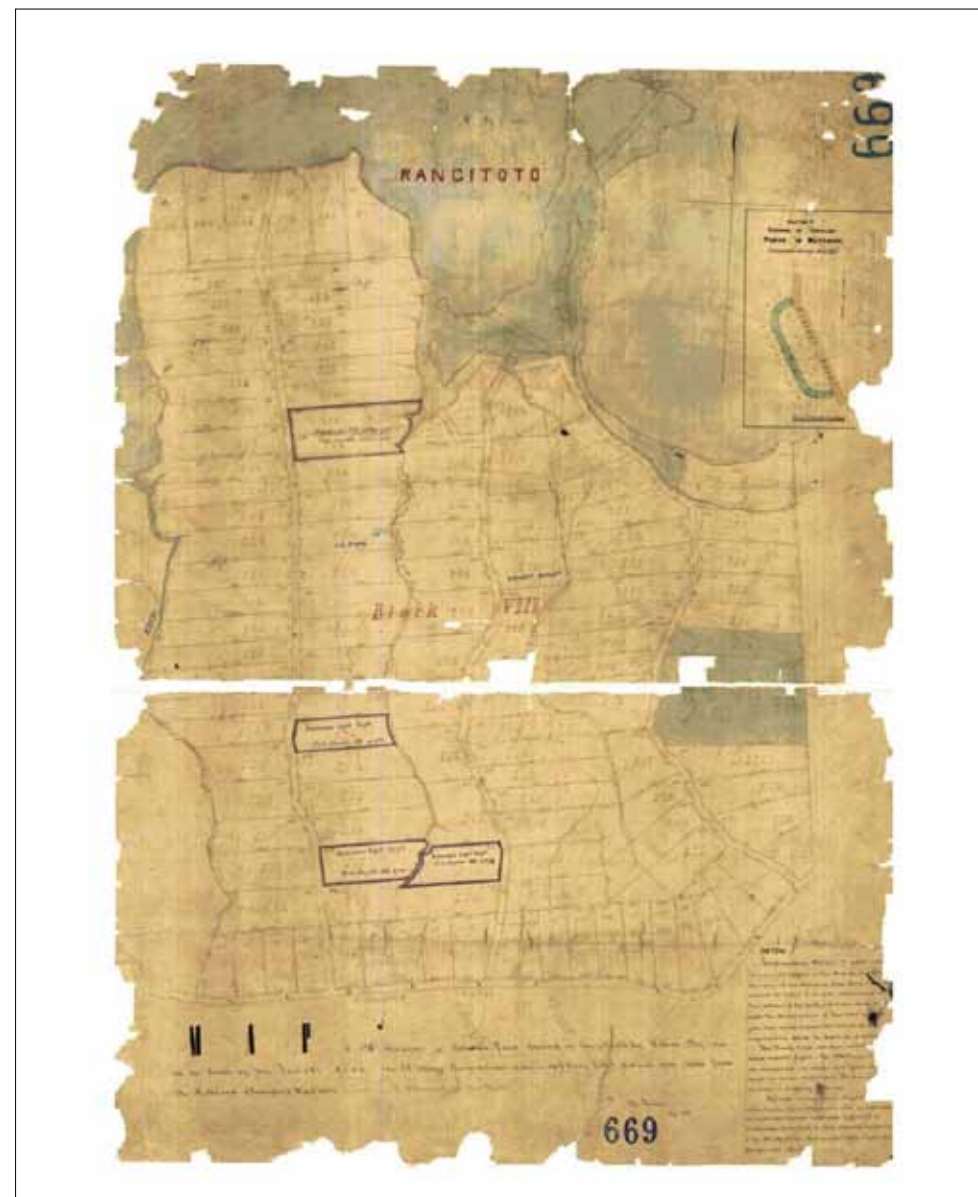


Figure 7: SO667: Remuera block

17 Later land history

Orakei East and West Reserves: whilst most of the Remuera block was rapidly sold by the Crown, the portion on the Orakei peninsula was retained by the Crown. A map held by the Auckland Public Library shows the Remuera block and the allotments for sale. Purchaser's names have been added to some allotments. The whole Orakei Peninsula is labelled "Sheep Quarantine Reserve" (APL NZ Map 4204). However, in 1872, with the exception of lots 208-212 (see Figure 5), a Crown Grant was issued for the peninsula to the Superintendent of the Auckland Province for "educational purposes". In 1923 all of the northern part of the Orakei peninsula north of 215 Orakei Road was taken for the construction of the railway (completed 1929). This land was retained by the railways department but in 1971 the strip around the basin (Allotment 286 Suburbs of Auckland 16) was transferred to the Auckland City Council. The other portion of the present reserve that was taken for Railway purposes was 217 Orakei Rd. In recent years this was returned to Ngati Whatua ownership. A long-term lease has been set up and the land is managed as part of the reserve.

The remaining portion of the Orakei Reserve on the peninsula was declared a "Recreation Ground" in 1934 (DP 27534 and NZ Gazette 30, 3 May 1934). The portion of the Orakei West and East Reserves that

make up the southern side of the reserve are unformed legal road (Upland Road) and other properties that had passed into private ownership and purchased or acquired under the Public Works Act by the Council in the 1940s and 1950s. The land on the eastern side of the basin was acquired by the City under the subdivision rules of the Municipal Corporations Act 1954.

The other reserves considered in this report were generally acquired in the early to mid 20th century, after the area had passed into private hands. Much of the area had remained farmland until well into the 20th century. The acquisition of each area is set out briefly below:

MacPherson Street Reserve: originally part of Allotment 220 Suburbs of Auckland 16. The southern end is made up of the legal unformed end of Meadowbank Road, created in 1906 when the Meadowbank Estate was first subdivided. The northern end is unformed legal road at the end of Purewa Road, created in 1950. The reserve area between these two roads is a recreation reserve. In 1954 the Housing Corporation subdivided an area between Purewa and Meadowbank Roads and on the western side of Manapau Street. A reserve was created along the Orakei Creek. The area was gazetted as a recreation reserve in 1960.

Bonnie Brae Reserve: originally part of Allotment 220 Suburbs of Auckland 16. It was acquired by the Council as a recreation reserve in 1977.

Meadowbank Reserve: originally part of Allotment 220 Suburbs of Auckland 16. This area is part seabed and part legal road transferred to the Council in 1931.

Kelvin Reserve: Originally part of Allotment 172 Suburbs of Auckland. It was acquired by the Council from private owners in 1931 as a public reserve.

Waiatarua Access: this is legal road by Crown Grant. At the other end of the bridge across the Orakei Creek from here the property had been acquired by the Presbyterian Church Orphanage Board in 1908. The access way was transferred to the Council in 1959 at the time the Presbyterian property was subdivided for housing.

Lucerne Road Access: this is unformed legal road transferred to the Crown by George Kent in 1912 when Lucerne and Ngapuhi Roads were created. Interestingly, attached to the Memorandum of Transfer of these roads to the Crown is a plan that shows that Lucerne Road was originally planned to turn and run along the creek edge to join up with the end of Ngapuhi Road. However, the section from the Lucerne Road Access to Ngapuhi Road is shown as stopped, although a portion of the stopped road has been built at the Ngapuhi Road end.

Appendix 4: Archaeological sites

18 Archaeological values

A number of archaeological sites have been recorded in the vicinity of the Orakei Basin.

To the north of Orakei Basin there is a cluster of sites on the northern shores of the basin at the mouth of Purewa Creek. These are terraces and middens, suggesting this was a favoured area. Clough (1998: 5) also noted stone flake tools on the mudflats in front of these sites. It is probable that these sites represent continued use of the area over an extended period, however they were not necessarily all used at the same time. Elsewhere around the basin there are fewer sites recorded. On the Orakei Peninsula itself there are, apart from the pa (R11/87) only two sites recorded. R11/2350 is a small remnant shell midden on the northern coast of the peninsula. East across Orakei Road from this site there was an area of shell midden partially investigated in 1987 (Visser 1987).

It was thought that this midden had subsequently been destroyed, but in 2008 a midden site was noted at this location (Clough and Macready 2009). Although the northern part of the peninsula was extensively modified in the 20th century, destroying most archaeological evidence, one would have expected to find more evidence of shell middens on the unmodified coastal edges than has been the case. The paucity of such coastal middens indicates that the peninsula, away from the pa was not heavily occupied at any time.

Four sites have been recorded in the area to the south of the basin. R11/106 is Little Rangitoto or Maungarahiri. Little Rangitoto has been completely quarried. Although it is unlikely that any substantial evidence of this site have survived, a small area of shell midden, probably associated with this site has been noted on a property adjacent to the Little Rangitoto Reserve. Just to the east of Little Rangitoto R11/533 has been recorded. The original recorder used a sketch from William Bambridge's 1845 journal, reproduced in Platts (1971), to identify this site. The sketch shows the area between St Johns and Parnell and has two "native villages" marked: one is in the area between the Orakei and Purewa Creeks and the other south of the Orakei basin (Figure 9).

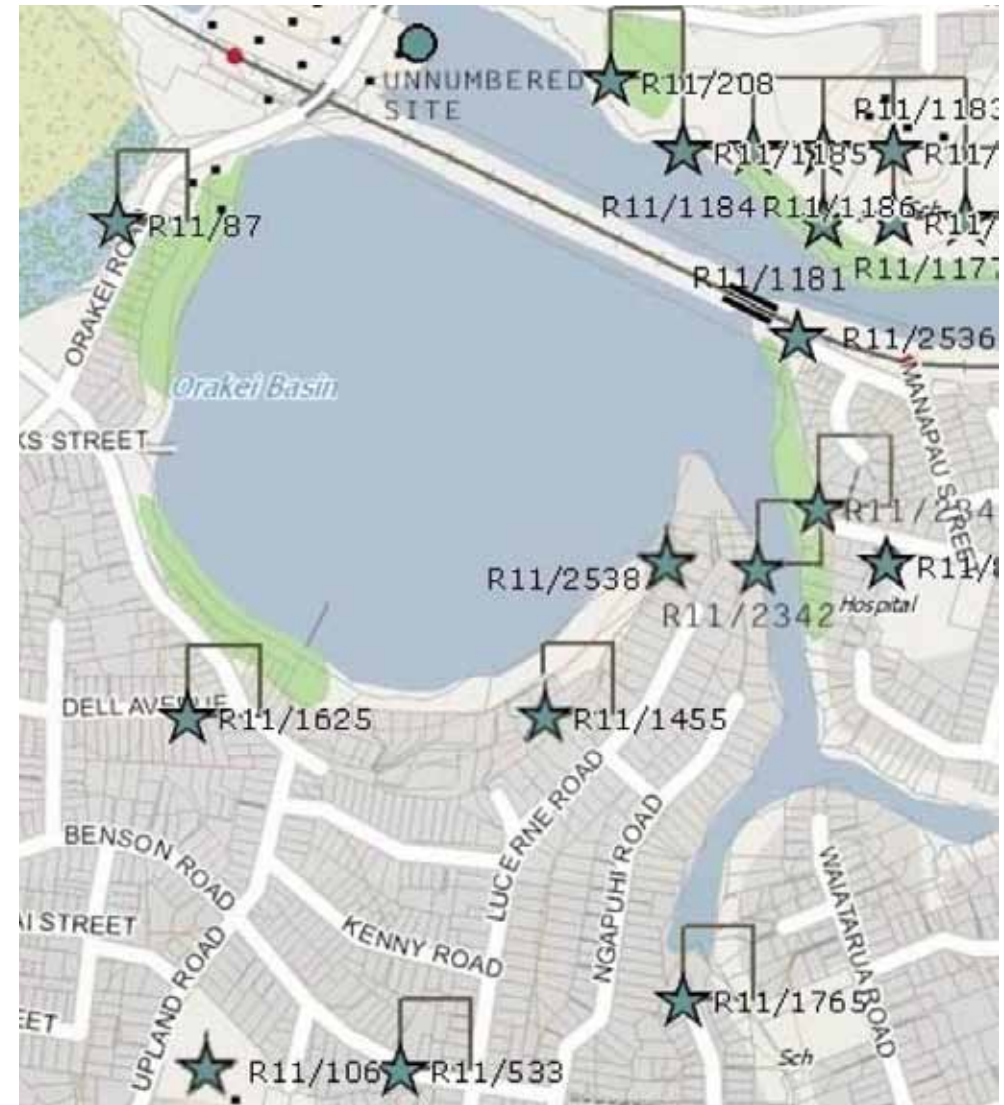


Figure 8: Recorded archaeological sites, Orakei Basin Area (ArchSite February 2009) Note: An "unnumbered site" added at the northern end of the Orakei Peninsula. A site record was prepared for this site (Clough and Macready 2009: appendix) in 2008, but it was not added to the NZAA site file). Note: the map does not accurately mark site locations but shows indicative areas within which a site is recorded.

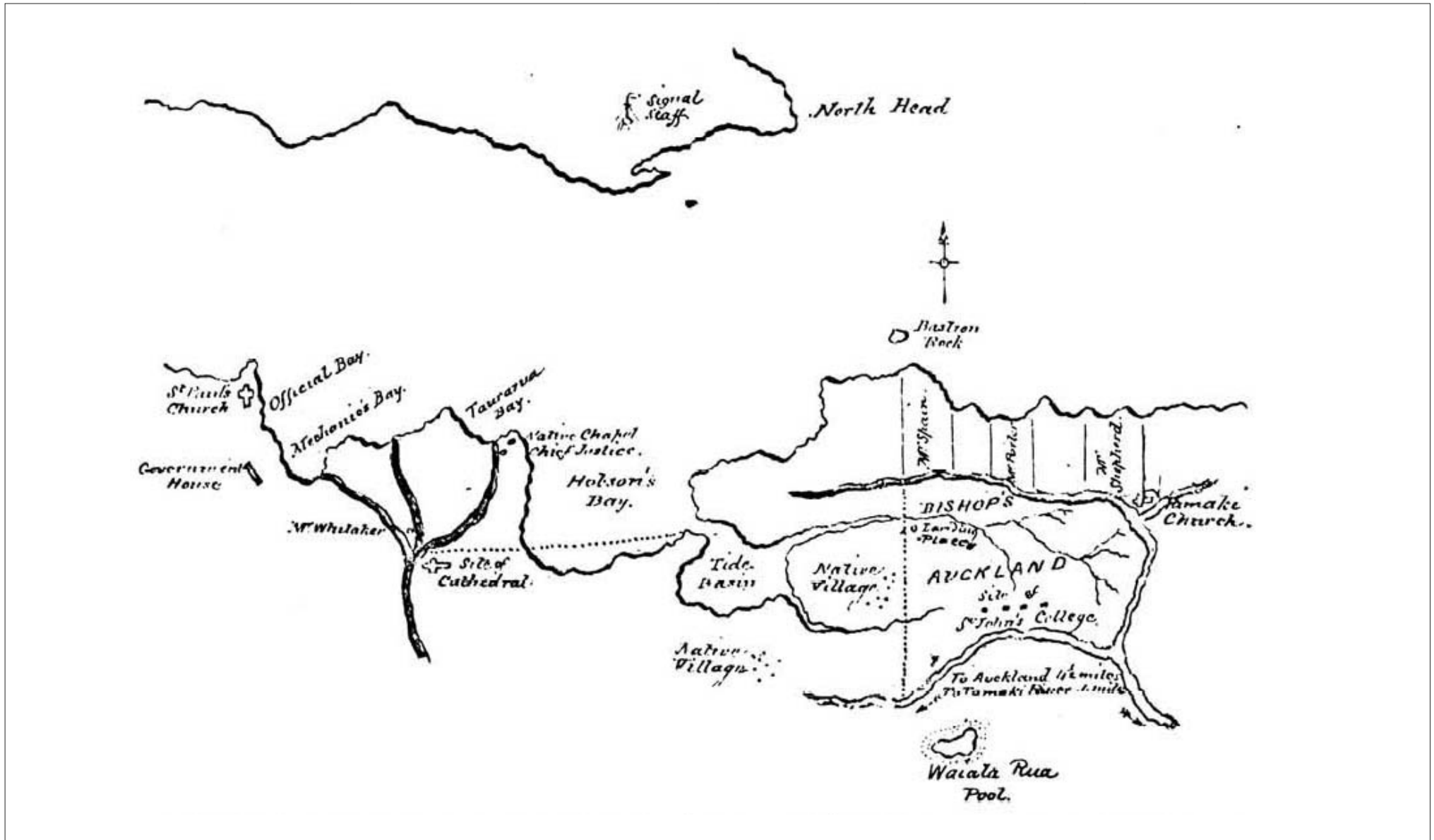


Figure 9: William Bainbridge's 1854 sketch showing native villages around the Orakei Basin (Platt 1971: 107)