

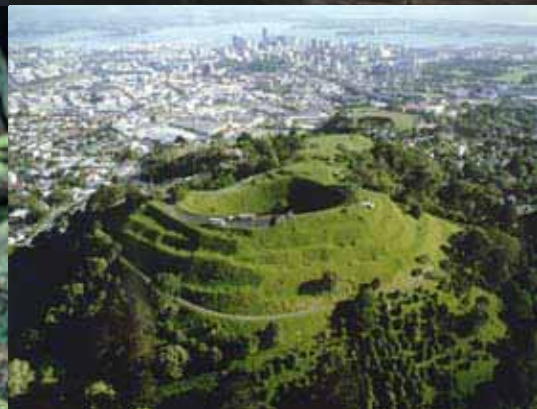


Our World Heritage

A Tentative List of New Zealand Cultural and Natural Heritage Sites

A Report to the Department of Conservation by the Cultural and Natural Heritage Advisory Groups

NOVEMBER 2006



Department of Conservation
Te Papa Atawhai

Our World Heritage

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Cultural and Natural Heritage Advisory Groups

Wellington, New Zealand

November 2006

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Fluted marble, Garibaldi Ridge, Kahurangi National Park. *Craig Potton*

Napier streetscape. *Art Deco Trust*

Pohutu Geyser at sunset, Whakarewarewa. *Destination Rotorua*

Carvings and tukutuku, Waitangi Treaty Grounds Historic Precinct. *Andris Apse*

Tuatara, Hen & Chicken Islands. *John Gardiner, DOC*

Maungawhau/Mount Eden. *Alastair Jamieson, Auckland Regional Council*

Lake Heron in winter, reflecting Sugarloaf and the Taylor Range. *Donald Geddes*

Stone Store, Kemp House and wharf. *Olwyn Crutchley*

Red Coral, and blue maomao, Kermadec Islands Marine Reserve. *Roger Grace*

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1.0 Introduction

The World Heritage Convention, to which New Zealand is a signatory, provides for the protection of properties or places of outstanding universal value. The Convention requires that each country prepare a 'tentative list' of sites which it believes could meet the criteria for nomination as World Heritage sites. Preparation of this listing assists the World Heritage Committee in assessing the wide-ranging nominations received internationally.

The World Heritage List, established in accordance with the Convention, consists of those cultural and natural heritage properties considered by the World Heritage Committee of UNESCO to be of outstanding universal value. As of July 2006, there were 830 listed World Heritage Sites: 644 cultural, 162 natural and 24 mixed natural / cultural.

In December 2004, the New Zealand public were invited to comment on the illustrative list of sites published in a discussion document entitled 'Our World Heritage. Discussion Document: Towards a New Zealand Tentative List' (Department of Conservation, 2004), and to suggest other sites that may be suitable for World Heritage nomination. In order to assess sites for tentative listing under the **Cultural Heritage** and **Natural Heritage** criteria, two Advisory Groups of suitably qualified persons (listed in Appendix 1) were convened to recommend the best cultural and natural heritage candidates, especially those identified through the public response to the discussion document (which resulted in a response of 304 submissions).

Cultural Heritage: refers to monuments, groups of buildings and sites with historical, aesthetic, archaeological, scientific, ethnological or anthropological value. Well known listed cultural properties include: the Acropolis (Greece), the Great Wall of China, the Historic Centre of Florence (Italy), the Taj Mahal (India) and Angkor Wat (Cambodia).

Natural Heritage: refers to outstanding physical, biological and geological formations, habitats of threatened species of animals and plants and areas with outstanding scientific conservation or aesthetic values. Natural heritage can be either terrestrial or marine. Existing natural World Heritage sites include: Yellowstone National Park (USA), Sagarmatha National Park (Nepal), the Great Barrier Reef (Australia), the Three Parallel Rivers of Yunnan (China), and Te Wahipounamu (South West New Zealand).

Mixed Cultural and Natural Heritage: refers to sites satisfying part or whole of the definitions of both Cultural and Natural Heritage.

1.1 EVALUATION PROCESS

To be included on the World Heritage List a site must be assessed as being of '**outstanding universal value**' in terms of one or more of the following criteria, as set out in the UNESCO 'Operational Guidelines for the Implementation of the World Heritage Convention'. The latest guidelines (February 2005) are available to view at: <http://www.unesco.org/en/guidelines> and the relevant text (sections 77-78) is reproduced below.

77. The Committee considers a property as having outstanding universal value...if the property meets one or more of the following criteria. Nominated properties shall therefore:

- (i) represent a masterpiece of human creative genius;
- (ii) exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
- (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- (v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. The Committee considers that this criterion should preferably be used in conjunction with other criteria;
- (vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
- (viii) be outstanding examples representing major stages of the earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features;
- (ix) be outstanding examples representing significant ongoing ecological and biological processes in the evolution of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals; and
- (x) contain the most important and significant natural habitats for conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

78. To be deemed of outstanding universal value, a property must also meet conditions of integrity, authenticity, adequate management and legal protection.

After considering the comments made in each submission, the two New Zealand Advisory Groups assessed the outstanding universal value of each candidate site against the criteria, appraised its integrity, legal protection, conservation management, and whether listing posed risks or added value to the site. This systematic assessment of the values of each site is presented in a framework for cultural sites in Appendix 2 and natural sites in Appendix 3. On the basis of this comprehensive evaluation, the Advisory Groups make the following recommendations for tentative listing of sites within the Cultural Heritage, Natural Heritage or Mixed Cultural and Natural Heritage categories.

If accepted, these sites would replace the one site on the existing New Zealand tentative list, Cape Reinga and the Three Kings Islands/Manawatāwhi, which would be subsumed in the larger Whakarua Moutere (or North-East Islands) proposal (see section 4.3).

1.2 SUMMARY OF RECOMMENDATIONS

A total of eleven sites are recommended for inclusion on New Zealand's tentative list for World Heritage status. These are made up of: three cultural sites, seven natural sites (one of which is an addition to an existing listed natural site), and one mixed cultural/natural site.

Cultural Heritage Sites

Three sites are considered to meet all or most cultural criteria for outstanding universal value and to satisfy integrity, legal and management requirements to such a high level that they should be an immediate priority for placement on the New Zealand tentative list. They are:

- **Kerikeri Basin historic precinct**
- **Napier Art Deco historic precinct**
- **Waitangi Treaty Grounds historic precinct**

Nine further sites put forward in public submissions were considered as Cultural Heritage Site candidates. Some of these are likely to have the potential to meet the criteria to some degree. However, they would require further work to reach the stage where they could be considered for tentative list status. In some cases integrity, management and community and stakeholder issues would need to be further addressed before placing them on the tentative list. These sites included:

- **Central Otago goldfields**
- **Christchurch cultural precinct**
- **Denniston**
- **First Church of Otago, Dunedin**
- **Historic Oamaru**
- **Kaikoura**
- **Papamoa pa complex**
- **Totaranui/outer Queen Charlotte Sound**
- **West Coast mining landscape and remnants**

Natural Heritage Sites

A total of seven natural sites are recommended for placement on the New Zealand tentative list. Three sites are considered to meet all four natural criteria for outstanding universal value and satisfy integrity, legal and management requirements to such a high level that they should be an immediate priority for placement on the New Zealand tentative list. They are:

- **Kahurangi National Park, Farewell Spit, and the Canaan karst system**
- **Kermadec Islands and Kermadec Islands Marine Reserve** (and volcanic landforms along the Kermadec Ridge)
- **'Whakarua Moutere', or the 'North-East Islands'**

Three further sites are considered likely to meet two or more natural criteria and should be placed on the tentative list. However, they are of less immediate priority because certain integrity, legal, management or site ownership issues need to be clarified before advancing them to site nomination. They are:

- **Canterbury high country braided rivers and lakes**
- **Rotorua geyser fields and geothermal sites**
- **Stewart Island / Rakiura archipelago**

A seventh site meets all four natural criteria and is proposed for listing as an addition to the existing Te Wahipounamu (South West New Zealand) World Heritage Area as a matter of high priority, namely:

- **The waters and seabed of the fiords of Fiordland (Te Moana o Atawhenua)**

Two other sites are likely to meet one or more criteria but are not of immediate priority because the first requires much more work to define the site and confer legal protection and the second site would require the full agreement and support of its private owners. However, the Natural Heritage Advisory Group considers that both sites are definite candidates for future listing. They should be kept under active review and considered again at the next revision of the tentative list. They are:

- **Kaikoura underwater canyon and mountains**
- **Lake Taupo**

Some of the above Natural Heritage sites may also meet the cultural criteria, but this analysis would need to be done closer to the process of nomination.

Mixed Cultural and Natural Heritage Site

One site is proposed as a mixed cultural/natural serial site, having primarily cultural values but also outstanding geological values. It is:

- **Auckland Volcanic Field**

1.3 FUTURE REVISION OF THE TENTATIVE LIST

The New Zealand tentative list should be revised at intervals, as provided for in the UNESCO guidelines. The revision process would enable further sites which might qualify for World Heritage status to be identified and fully researched to the required standard.

1.4 DESCRIPTION OF CANDIDATE SITES

Sections 2, 4, and 6 provide detailed descriptions and discussion of the values, integrity, risk and management issues for each of the cultural, natural, and mixed cultural/natural candidate sites. Sites rejected for inclusion in the tentative list, or deferred at this stage, are discussed in less detail in sections 3 and 5.

2.0 Cultural sites of high priority for immediate World Heritage listing

2.1 Kerikeri Basin historic precinct

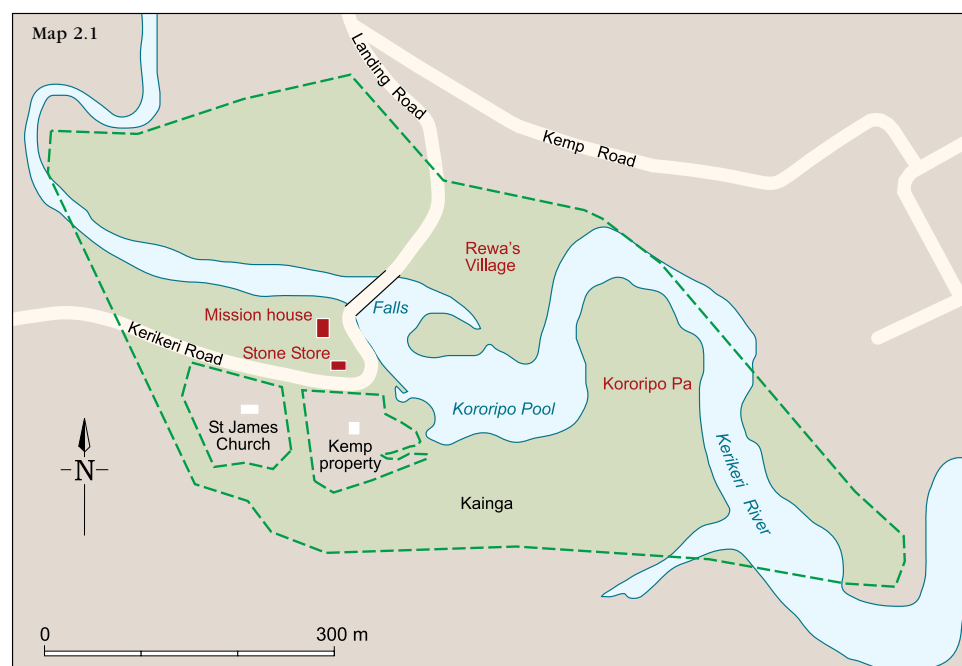
SITE LOCATION

The Kerikeri Basin, in Northland, comprises land surrounding the Kerikeri River where it flows into the Kerikeri Inlet. The precinct includes (see Map 2.1):

- All Kerikeri Basin Crown lands administered by the Department of Conservation (DOC)
- The Kerikeri Mission House (often known as Kemp House, from the name of the family that gifted it to the Historic Places Trust), and Stone Store owned by the New Zealand Historic Places Trust
- The tidal waterway enclosed by the Basin and the Kerikeri River above the Kerikeri Falls
- The Kerikeri Basin wharf (managed by Far North Holdings Ltd)
- The Far North District Council reserve which abuts the Kerikeri River opposite Kororipo pa
- All roads within the area defined in the map.

All of the above lands are publicly owned. The following properties, which are important elements of the precinct, are privately owned and, therefore, not included in the proposal for World Heritage status. Their possible inclusion could be considered in the future should a formal nomination for World Heritage status proceed.

- The St James Church property (owned by the Anglican Church Diocese)
- The Kemp Family Trust property (currently operated as a restaurant)





Kerikeri Basin and
Kororipo Pa.
Kevin Jones, DOC

SITE DESCRIPTION

The authentic heritage elements within this landscape are a unique cluster of Maori and Christian missionary contact period places and structures including:

- Kororipo pa and the associated Kiriokai kainga and wahi tapu
- The Kororipo whirlpool, home of the Nga Puhi ancestral taniwha, Kauea
- The Kerikeri Mission Station (Mission House and Stone Store) and associated artifacts
- The Kemp Family Trust property, the site of some of the first mission buildings. Survivals from early periods on the property include a pear tree, Maori and European archaeological sites, and a building which may relate to the early contact period
- St James Church, the site of an earlier church and other habitation
- Other archaeological sites within the Basin and its waterways.

The historian Judith Binney has described the Kerikeri Basin as:

...culturally and historically one of the most important sites in Aotearoa New Zealand...The Kerikeri Basin should be claimed as the 'pool' of our origins...It is, by its conjunction of sites, probably one of the most significant visual testimony that we have to the meeting of two worlds in Aotearoa New Zealand.¹

Binney, J. 2005: Te Kerikeri: The meeting pool. Commentary paper for DOC. Unpublished.



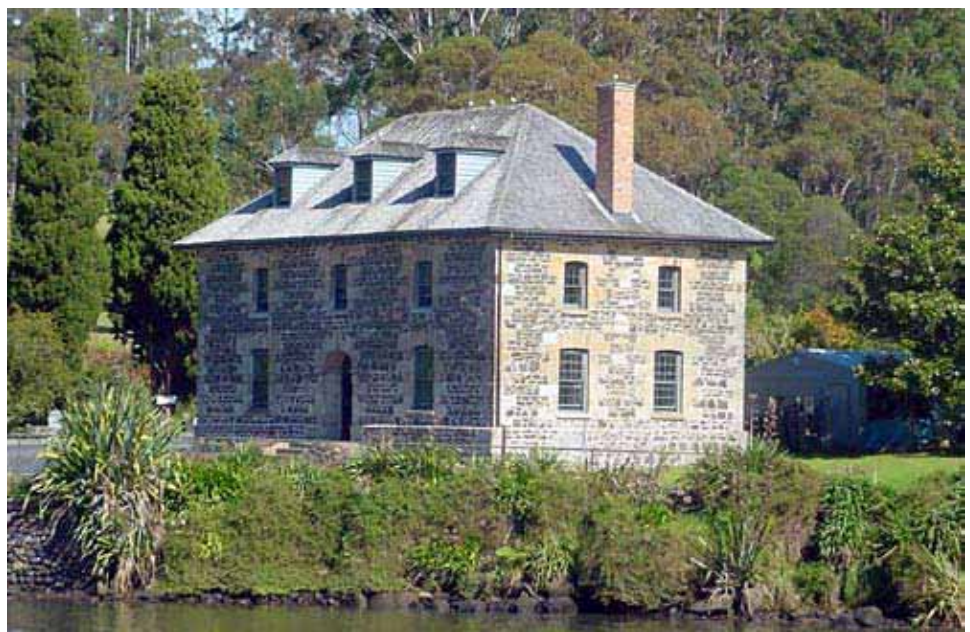
Stone Store, Kemp House
and wharf.
Otwyn Crutchley

The Kerikeri Basin is on the northwest margins of the Bay of Islands, the most accessible and safest anchorage for ships arriving from the wider Pacific region. There was settlement here prior to European arrival since Kororipo pa is of pre-European defensive form. The basin was also the coastal settlement of Hongi Hika of Nga Puhī, a pivotal figure in New Zealand history in the 1820s and 1830s. The Basin is on a longstanding route from the outer Bay of Islands to the Taiamai Plains (southwest of Kerikeri), a densely settled area prior to the 1820s.

The first mission settlement was built in the outer bay at Te Oihi (Marsden Cross), founded 1814. When intertribal wars quietened, the Kerikeri Mission Station was founded in 1819 at the mouth of the Kerikeri River. It is the oldest surviving European settlement in New Zealand. The Kerikeri Mission House, built in 1822, is New Zealand's oldest surviving building. The Stone Store (built in 1836 as part of the mission settlement) is New Zealand's oldest stone building and the oldest trading building. The two stand close together and dominate the former wharf frontage to the river. They are of contrasting form and bulk.

Other elements of the complex not listed above, include the river in the natural shrubland setting of the basin, not dissimilar to that of the 19th century, and the Kerikeri Falls, one of the outstanding natural features of the basin.

Stone Store.
Otwyn Crutchley



VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

Criteria (ii), (iii), (iv), (v) and (vi)

The Kerikeri Basin historical precinct has outstanding universal value for the following reasons:

- The site reflects a significant encounter between two cultures, English Evangelical Christianity and Maori, with effects neither could have fully foreseen. Literacy, religious conversion, trade and technology all had fundamental effects on Maori society (criteria *(ii)* and *(iii)*)
- Introduction of firearms produced a Nga Puhī strength which changed the pattern of iwi (tribes) throughout the country and affected European settlement (criteria *(iv)* and *(vi)*)
- The pa represents a traditional Maori settlement, and the buildings (Mission House and Stone Store) represent the earliest stage of European settlement in New Zealand (criterion *(v)*).

The Mission House has witnessed and survived every phase of modern New Zealand history. In the Kerikeri Basin, the physical evidence and consequence of meeting of two different peoples and cultures is still marked starkly and evocatively on the landscape.

The Kerikeri Basin is notable for its integration of an Anglican mission settlement (with surviving buildings) and the adjacent Maori settlements occupied at the same time. The mission was established with the concurrence of Hongi Hika. The closest New Zealand parallel is the Te Puna / Rangihoua / Oihi (Marsden Cross) complex in the outer bay. However, Oihi (the earliest mission settlement area) was abandoned some years after the establishment of Kerikeri and there are no standing mission buildings at Oihi or Te Puna.

Kemp House.
Olwyn Crutchley



The Kerikeri Basin represents a rare surviving example of a place of encounter and relationship building between two worlds. Nga Puhi and their related iwi and hapu lived here for generations in a country that was one of the most isolated places settled by people. That isolation ended as ships from the great European maritime cultures began to reach New Zealand in the late 18th century. From 1819 when the Nga Puhi chief Hongi Hika invited Christian missionaries led by Reverend Samuel Marsden to settle in the basin, this place became a microcosm of that encounter of two worlds—a small piece of Georgian England set down in a Maori world. The encounters that took place here - the giving and taking, the borrowing and lending, religious conversion and teaching, along with warfare fuelled by the introduction of firearms—laid the foundations for the agreement that would later be signed as the Treaty of Waitangi, and for the development of New Zealand as a bicultural nation and modern state.

INTEGRITY, MANAGEMENT AND RISK ISSUES

Although this landscape from two centuries ago is fragile, the efforts of past owners and the present conservation agencies have ensured that the key places have survived reasonably intact. Thus the site is considered to meet the tests of authenticity for World Heritage status as regards the structures and sites and their setting, and comprises a cultural landscape of the highest significance.

Most elements of the basin are in the hands of the Crown (acting via DOC) or the New Zealand Historic Places Trust, and the key buildings have undergone a steady process of conservation. In the Mission House an unstable chimney has been reconstructed and satisfactory foundations inserted under the building. The Stone Store has had the massive stone walls re-grouted and rising damp problems resolved, its upper floor plates connected to walls, and with the reconstruction of some features it now resembles its original form of 1836. Both the store and house have interpretive signage and display heritage collections that are directly associated with the properties.

The Kororipo Pa Reserve is actively managed and interpreted to enhance its heritage values.

Other legal protections in place include:

- The Far North District Plan scheduling the entire Kerikeri Basin as a heritage precinct
- Several structures in the basin being individually scheduled for protection in the Plan
- The Far North District Council in its administration of the Resource Management Act must consider heritage as a matter of national importance
- The New Zealand Historic Places Trust having registered three key properties, the Mission House, the Stone Store, and St James Church. This is a statutory process which must be taken account of in administering the Resource Management Act 1991
- Archaeological sites are protected under the Historic Places Act 1993
- Some of the reserve land is managed under the Reserves Act 1977, including its particularly relevant Historic Reserve category.



Native Hibiscus.
Peter de Lange

The overall setting has good prospects of enhancement, with central and local government approval of a bypass road that will eventually take all vehicle traffic away from the precinct and assist with protection from flooding. Minor areas of freehold land in the precinct and in some buffer areas contain some inappropriate features, but these are controlled by district planning rules.



Kerikeri Basin from behind
the Stone Store.
Olwyn Crutchley

The most significant risk to world heritage values is the threat of flooding from the Kerikeri River. Road traffic passing through the precinct is causing vibrations which affect the Stone Store structure and detracts from visitors' experience of the precinct. These threats are being addressed by the Far North District Council with substantial assistance from the Crown, with the aim of constructing a bypass road. The consequent removal of the present bridge will help mitigate the flood risk. The construction contract for the heritage by-pass was let in September 2006 with completion forecast for 2008.

Other threats include developing urbanisation around the basin also affecting World Heritage values. This can only be addressed by the Far North District Council through its administration of the Resource Management Act.

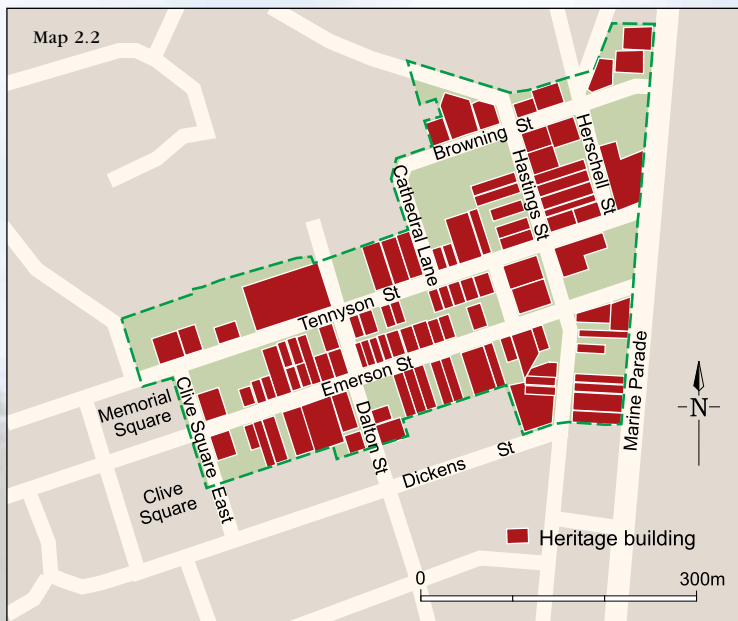
The proposed 'Sustainable Development Plan of the Kororipo-Kerikeri Basin' will assist in protecting and minimising threats to heritage values of the area. The plan has involved community input and public submissions, and has been approved by the Steering Committee, but not yet been publicly released.

2.2. Napier Art Deco historic precinct

SITE LOCATION

In the Central Business District of the City of Napier, located between the shoreline of Hawke Bay and the coastal margin of the Heretaunga Plains, Hawke's Bay, North Island. The area included in the Napier Art Deco Historic Precinct is outlined in Map 2.2

SITE DESCRIPTION



Napier township was originally surveyed and laid out in the 1850s. Most of the town centre was destroyed on 3 February 1931 by an earthquake (measuring 7.9 on the Richter scale) and the ensuing fires. The Hawke's Bay earthquake not only destroyed the centre of Napier, but caused radical changes to the surrounding landscape. It was a natural disaster of major proportions. This destruction resulted in a massive reconstruction of the town centre. Napier became New Zealand's (and indeed the world's) newest city with its own Southern Hemisphere version of Art Deco style. Due to the economic climate and the number of casualties caused by falling masonry and decorative features during the earthquake, the scale of the town centre was limited to one or

two storeys and the buildings were decorated with low relief ornamentation. Reinforced concrete was used in construction and the use of older materials such as bricks was shunned. Ornamental motifs used on buildings reflect all of the themes prevalent in Art Deco design, and also include authentic Maori designs on both exteriors and interiors of some buildings. These motifs are seen not only in exterior low relief stucco but also in interior plasterwork, leaded glass, metal grilles, flooring and joinery.

Kidson's Building.
Art Deco Trust





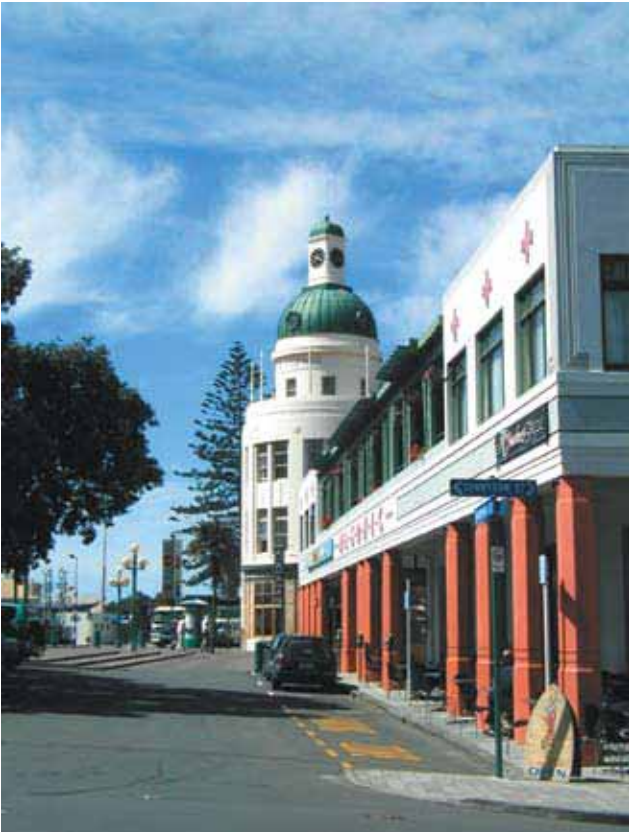
A Napier streetscape.
Art Deco Trust

The central business district was reconstructed mainly over the two years following the earthquake, with planning decisions made by two government-appointed commissioners and an Earthquake Reconstruction Committee. Napier-based architects formed the Napier Associated Architects to share resources and enhance opportunities for local architects. Although the number of architects involved in the town centre reconstruction was relatively small with five main contributors, there is a wide variety of building styles in such a compact area. By the end of the 1930s, central Napier consisted almost entirely of buildings and landscaping of the previous 20 years. Because the creation of a totally new city centre halts the normal cycle of demolition and renewal, no changes occurred at all in central Napier until the 1960s. Buildings have been lost since then, but only a small proportion of the total stock. Today, central Napier consists almost entirely of buildings and landscaping from the reconstruction period. The city centre has been described by as *'a tapestry in which all the strands of the modern movement are woven together'*²

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

Napier's Art Deco historic precinct has outstanding universal value as a 'historic town' because its buildings, architectural ensemble and landscape illustrate important developments in architecture, town planning and landscape design (criterion *(ii)*), and illustrate a significant period in human history (criterion *(iv)*). The importance of the Art Deco movement in the 20th century aesthetics also makes a claim under criterion *(vi)*. The Napier Art Deco historic precinct, and other aspects of the Napier urban area, illustrates an unusual and possibly unique response to a major natural disaster. Because of the need to rebuild in the midst of a major economic depression, decisions were made to rebuild the town centre in a closely co-ordinated way. Central Napier is a planned concentration of buildings of the early 1930s, built at a time when the Depression had virtually put a stop to the construction of individual new buildings, let alone town centres. It represents a period when modernism was taking root but before the 'Modern Movement' had banished ornamentation on buildings and what might be termed the 'decorative' elements of town planning.

² Information from Art Deco Trust submission to ICOMOS, September 1998



The old T&G building and
the Masonic Hotel.
Art Deco Trust

Criterion (ii)

Central Napier is an example of a unique blend of architecture, town planning and landscape design. The planners and builders of the post-earthquake city centre seized an opportunity to review the city's design and make those changes which were achievable in the harsh economic climate of the time. Streets were widened, corners splayed, power and telephone lines buried, and verandahs standardised in height and design. The beachfront, widened by the uplifting of land, was converted into a landscaped reserve, in harmony with the design of new buildings and embellished with architectural features-colonnades, arches, a plaza, soundshell and an illuminated fountain.

The architectural ensemble illustrates:

- Early 20th century modernity. The differing design philosophies of the four architects largely responsible for the reconstruction present a catalogue of styles associated with the early 20th century. Predominantly Art Deco in style, the town incorporates Spanish Mission, Stripped Classical, Prairie School and Chicago style and other designs and elements, largely transmitted to New Zealand through architectural publications (for example, Frank Lloyd Wright's 'Wasmuth Portfolios').
- Depression era developments. The low relief architectural ornamentation and simple cubic forms of buildings are as much an aesthetic response to the limited resources available for reconstruction, as the damage caused to heavily ornamented colonial buildings.
- The adaptation and indigenous responses of colonial and post-colonial communities. Four buildings in the area incorporate Maori decorative elements, most notably Crichton, McKay and Haughton's Bank of New Zealand building (1932) and E. A. Williams' premises for Ross and Glendinning.

Criteria (iv) and (vi)

Central Napier is a unique illustration of a small town built during a short (20-year) period when the Art Deco style was popular, and during the even shorter period when it was influenced by the economic restraints of the Great Depression. This period produced some of the most rapid and profound changes in society and human development that have ever occurred, resulting in beginnings of modernism. The importance of this period will be more widely recognised as time passes. However, there are few collections of buildings which represent this period because the economic effects of the Depression resulted in a virtual cessation of building in the early 1930s. Napier is, therefore, one of very few early 1930s architectural ensembles to be found worldwide.

The Art Deco style symbolised the spirit of its age as no other style may have done. The motifs common to the style represent speed, power, communication, progress, freedom, liberation (especially for women) and the birth of new ideas. The style was used internationally and expressed the yearning of societies the world over to be modern, progressive and innovative. Napier is a place where those aspirations were expressed in a townscape that remains little changed today.



Hotel Central balcony.
Art Deco Trust

Napier is probably unique in having such a cohesive collection of Art Deco buildings in such a compact area and with a unique low-rise scale, decoration and use of materials. It is unusual, possibly unique, in being an entire town centre built in the depths of the Depression as distinct from construction of a few buildings at the beginning or end of the Depression.

Napier can be compared with a number of other Art Deco towns of the same era. Prominent examples include Miami Beach and Santa Barbara in the USA (with which Art Deco Napier has some similarities as a seaside resort), Bandung, Indonesia (originally planned as the future capital of Java), and Asmara in Eritrea (built by the Italians as a model colonial city). None would surpass Napier in style and coherence.

Napier has been compared with the City of Bath in the UK by Sir Neil Cossons, the Chairman of English Heritage. In 1985 he wrote:

“Napier represents the most complete and significant group of Art Deco buildings in the world, and is comparable with Bath as an example of a planned townscape in a coherent style. Napier is without doubt unique”.

INTEGRITY, MANAGEMENT AND RISK ISSUES

Napier’s Art Deco historic precinct would meet the guidelines’ requirement of authenticity in design, material and workmanship, for few of the buildings have been demolished or unsympathetically modified.

Napier’s Art Deco historic precinct also partially meets the requirement for adequate legal protection and management mechanisms to ensure its conservation. The city centre has been registered as an Historic Area by the New Zealand Historic Places Trust under the Historic Places Act 1993. This provides statutory recognition of the significance of the area, and must be taken account of in the City’s District Plan.

Protection of heritage in the District Plan is offered through rules, incentives, education and design guides. Heritage is identified and grouped according to the type and level of significance. There is strong support within the community for the Art Deco heritage, and the values are actively promoted.

Protection through the proposed ‘City of Napier District Plan’ is for individual listed buildings, generally as a ‘discretionary’ or ‘restricted discretionary activity’, meaning that the Council has a capacity to decline to grant consent for demolition and modification. However, this has not prevented some cases of external additions and alterations to listed buildings. Interior alterations to Group 2 listed buildings are not prevented by the District Plan.

The proposed Napier City District Plan is still under review. It is not yet clear how effective the new provisions for the Art Deco historic precinct will prove in practice.

2.3 Waitangi Treaty Grounds historic precinct

SITE LOCATION

Waitangi, Bay of Islands, Northland, New Zealand.

SITE DESCRIPTION



The Waitangi Treaty Grounds, overlooking the Bay of Islands, is New Zealand's pre-eminent historic site. It was here that the Treaty of Waitangi (The Treaty) was first signed between Maori and the British Crown on 6 February 1840, and has been the site of subsequent annual commemorations of the signing.

The Waitangi National Trust Estate comprises 507 hectares, lying between the lower tidal reaches of the Waitangi River and the coastline running north to Wairoa Bay. The Estate was gifted to the people of New Zealand by the then Governor-General Lord Bledisloe and Lady Bledisloe in 1932. It is administered by the Waitangi National Trust Board whose members represent various sections of New Zealand people. The Waitangi Treaty Grounds historical precinct itself occupies 4.8 hectares

(shown in green on map 2.3) within the eastern end of the estate, and includes the Treaty House, the Whare Runanga and the historic naval flagstaff. The Maori waka, Ngatoki Matawhaorua is situated close by. There are extensive park-like grounds containing native birdlife, trees and heritage gardens.

The Treaty House.
Waitangi National Trust



Treaty grounds.
Waitangi National Trust



VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

Waitangi is considered to meet criteria *(i)*, *(ii)*, *(iii)*, *(iv)* and *(vi)*. The outstanding universal values of the site relate to the interchange of human values represented by the Treaty, and the historical importance of the buildings and their association with important events and living traditions.

Criterion (i)

The Whare Runanga is considered to qualify under criterion *(i)* as a masterpiece of human creative genius. It was built in 1939 and opened during the Treaty of Waitangi Centennial Celebrations in 1940. Te Whare Runanga is a fully carved meeting house. It is unique in being planned for use by all Maori tribes, as distinct from the normal tribal meeting house. It contains carvings by master carvers of the highest standard, representing all the major Maori tribal groupings.

Waitangi is a place unique in New Zealand and important in the history of British colonisation in the 19th Century. The outstanding historical significance of the site includes:

Criteria (ii) and (iii)

Events at Waitangi before the signing of the Treaty were important in New Zealand's early history. The selection of a New Zealand flag by Maori in 1834 was a significant event. This flag was recognised by the British Crown, enabling ships built in New Zealand to operate under international maritime law. A version of the flag was later adopted by the New Zealand Company.

Waitangi was also the scene of the Declaration of Independence in 1835 by the Confederation of United Tribes. The significance of this declaration has been debated in later years. At the time the Declaration was recognised by the British Crown and British recognition of some degree of New Zealand independence was one of the factors necessitating the Treaty. Even after the Treaty was signed the Declaration continued to be of importance to many Maori, and is still so today.

The Treaty also has international significance. It is New Zealand's founding document, under which an indigenous Polynesian people (Maori) and settlers from a very different European culture were intended to live together peaceably in the same country, Aotearoa/New Zealand.

The Treaty continues to have legislative and judicial relevance today. It is the only treaty that Maori signed with a foreign nation and remains the foundation of the relationship between Maori, Pakeha (Europeans), and the Crown to this day. Britain did not replicate this process with indigenous peoples elsewhere.

The Waitangi site has become a symbol of nationhood. Over the last 165 years New Zealand has developed a strong sense of a public community in which Maori and Pakeha both participate. The Treaty of Waitangi is a unique document which has had a remarkable influence on New Zealand history.

Criteria (iv) and (vi)

The proposed World Heritage site is part of the Waitangi National Trust Estate.

The Treaty Grounds landscape, along with the Treaty House and the Whare Runanga, illustrate a significant stage of human history through relations between peoples involved in the colonising process. The larger Estate is unique among New Zealand's diverse reserves protecting our historic and cultural heritage. The Waitangi Estate belongs by statute (Waitangi National Trust Board Act 1932) to all the inhabitants of New Zealand. It is managed by a board made up of representatives of various sections of New Zealand's population. In its governance of the site, the Board seeks to emphasise a sustainable relationship with the environment and the education of visitors as well as a pairing of the two parties to the treaty. The site also has the highest protection, being gazetted as a National Reserve under the Reserves Act 1977.

The key cultural heritage elements of the proposed Waitangi World Heritage site are:

The Treaty House: The original British Residency was erected in 1833-34 for Resident James Busby and his family. It was the scene of meetings to set up an independent Maori government, resulting in a Declaration of Independence in 1835. In 1840 the grounds in front of the house were the scene of discussions leading to the signing of the Treaty of Waitangi. Most of the Residency was pre-cut in Sydney of Australian hardwood, then shipped to the Bay of Islands and reassembled by code/Roman numerals. It is New Zealand's very earliest pre-cut building. The house underwent various additions and alterations over time, including a major restoration in 1933 and more recent conservation work in 1989/90.

Te Whare Runanga: The Whare Runanga is considered to be a masterpiece of human creative genius (see criterion (i)).

Waitangi flagstaff: The flagstaff marks the approximate spot where the Treaty of Waitangi was signed on 6 February 1840.

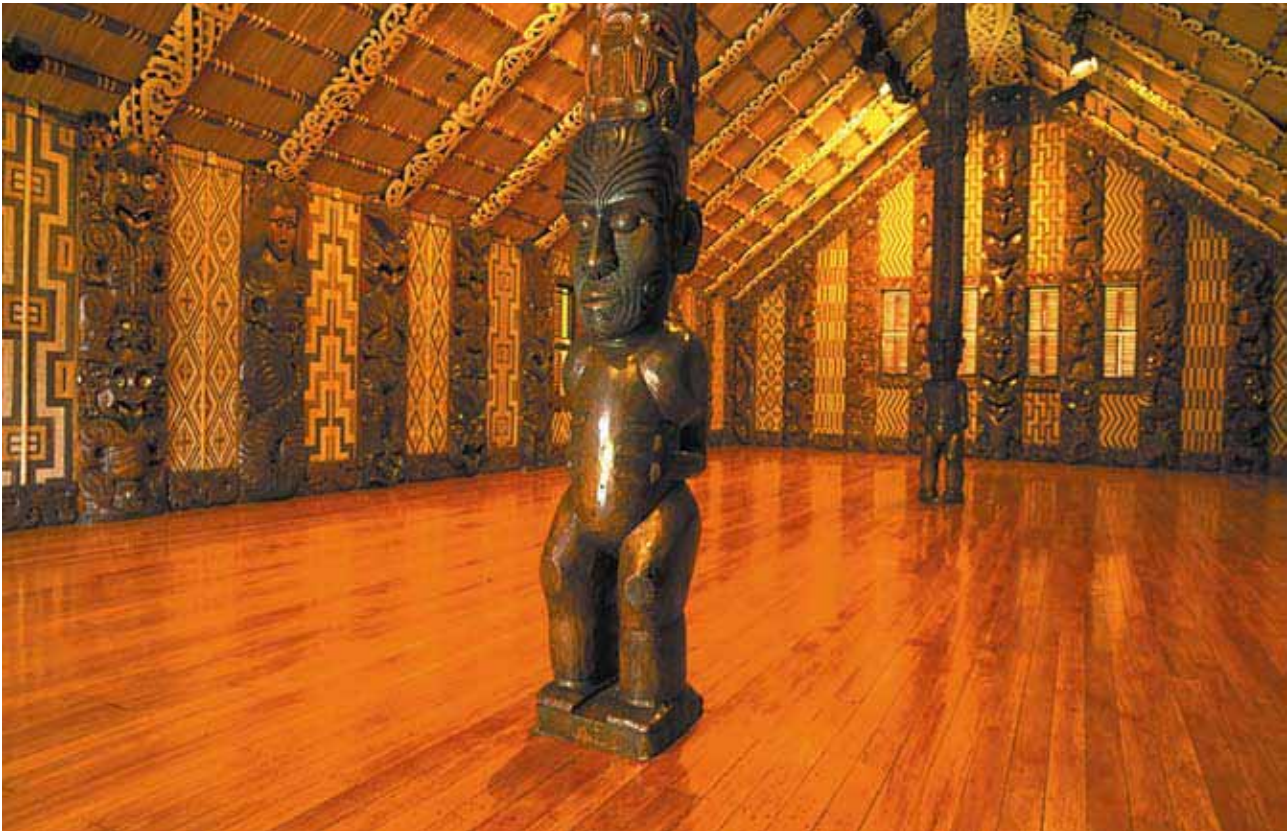
Ngatoki Matawhaorua: This 35-m Maori waka (canoe), built for the New Zealand centennial in 1940, is sheltered in the waka house situated at Hobson's Beach. A minimum of 76 paddlers are required to handle it safely on the water. The waka bears the name of the voyaging waka in which the legendary explorer Kupe visited Aotearoa. (The waka house is situated just outside the core heritage precinct but is closely linked with it.)

Ngatokimatawhaorua.
Waitangi National Trust



Waka taua on the water
off Waitangi National Reserve,
as part of Waitangi Day
celebrations.
Waitangi National Trust





Carvings and tukutuku within
the Whare Runanga, Waitangi
Treaty Grounds Historic
Precinct.
Andris Apse

Over the past 50 years Waitangi has again assumed a national political role, in continuity with that from 1834 to 1840, as a focus for expressions of protest and self-understanding. Protests from the 1970s onwards served to heighten awareness of land and other issues. The increased attention given to the Treaty of Waitangi ensures an inescapable national role for the Waitangi Treaty Grounds Historical Precinct. It remains a living site with continuous events of importance in the relationship between Maori and Pakeha and Maori and the Crown.

INTEGRITY, MANAGEMENT AND RISK ISSUES

The main historical features of the precinct area have a high degree of integrity and authenticity even though some have been modified over time. The overall setting and character of the precinct are very evocative of the crucial 1840s era.

The Treaty House has undergone a series of alterations over many years. The original dwelling was a single-storey Georgian style building, designed and prefabricated in New South Wales. It was altered and enlarged in the 1840s.

Prior to 1932 the grounds and Treaty House had fallen into disrepair. However, after the then Governor General, Lord Bledisloe, purchased the house and grounds and the Waitangi National Trust Board was established, the site was progressively rehabilitated and the Treaty House restored and extended. The 1933 restoration added new elements and the result was not fully authentic. Nevertheless, the basic style and character of the house remained.

During the 1989 restoration project, facilitated by conservation architect Clive Lucas, the 1930's interior restoration materials were removed and all the surviving original 1833 structure uncovered. The House was then refurbished but modern material used in part. The back wall of the original pre-cut house has been left uncovered so that visitors can appreciate the original building construction methods.

The Whare Runanga remains as built in 1939 and is entirely original.

The historic precinct has a high degree of protection through its governing legislation, the Waitangi National Trust Board Act 1932 and its status as a National Reserve under the Reserves Act 1977.

3.0 Other Cultural Heritage sites considered

The Cultural Heritage Advisory Group considered all cultural heritage sites submitted through the public discussion process. None of the following was considered suitable for the short list at this stage. In some cases the Group did not consider that the sites had the necessary qualities for World Heritage status. In others it felt that the sites could qualify, but that either a more developed case was needed, or that further community and stakeholder involvement was required. Comment on these individual cases follows.

3.1 CENTRAL OTAGO GOLDFIELDS

A well-developed case was presented, but this was from only two joint submitters. The Group recognised the significance of the Otago goldfields in the context of 19th century mineral exploitation, and the technological innovation involved. However, community consultation and local authority involvement would be needed to progress a case.

3.2 CHRISTCHURCH CULTURAL PRECINCT

The Group felt that the case might have some elements of World Heritage status, but that these had not been sufficiently developed in relation to the criteria. Here again, much more community consultation and local authority involvement would be needed to progress a case.

3.3 DENNISTON

The Group did not consider that Denniston on its own would meet World Heritage standards, but that it should be considered as part of a West Coast proposal (see Sec. 3.9).

3.4 FIRST CHURCH OF OTAGO, DUNEDIN

The Group recognised the outstanding merits of First Church among New Zealand churches. Of all the proposals received, it possibly came closest to meeting criterion (i). First Church also represents a 19th century aspiration to create a new ideal society in New Zealand. However, the case was not made convincingly in relation to World Heritage criteria. This would involve evaluating First Church along with other significant churches of the period. More community consultation would also be required.

3.5 HISTORIC OAMARU

This area came close to being included in the recommended tentative list, but the Group decided, with some reluctance, that the Oamaru proposal should not be included on this occasion. The submissions demonstrated wide community support and the principal submitters had made effective and enthusiastic cases. However, these did not always prove international significance, nor did they sufficiently relate the area to World Heritage criteria. The exact role and significance of the port in the development of the frozen meat trade and other exports needs more clarification.

There have been some losses of buildings over time, and some unfortunate modern intrusions. Neglect and deterioration of buildings has not been fully remedied, although the fine efforts of the Whitestone Civic Trust, Waitaki District Council and property owners are acknowledged. Overall, the area still has sufficient wholeness and intactness to merit World Heritage consideration.

The significance of the waterfront land between Humber Street and the sea (Area 4 in the Discussion Document plan) needs to be clarified. This area is very neglected and its historical role is unclear. In particular, the historical significance of the derelict freezing works building should be clarified.

A nomination proposal linking the town area with Totara Estate and possibly other sites as a serial site should be considered further.

3.6 KAIKOURA

The case for Kaikoura rests mainly on natural grounds. The Group did not consider that the cultural factors on their own had sufficient significance to merit World Heritage status.

3.7 PAPAMOA PA COMPLEX

This is a most impressive series of earthwork pa whose significance has been recognised by public acquisition and grant of Regional Park status. The complex may be seen as a highly developed expression of the Classic Maori phase, i.e. large fortified settlements and warfare. However, there is uncertainty of the period of occupation, and its place in the regional cultural sequence.

The relationship between the complex and other major sites such as Mount Maunganui and Kura a Maia needs to be clarified; a wider perspective is needed.

There is a problem with the boundary of the protected area. This boundary is arbitrary and does not take in some of the major pa sites. This issue needs resolution before World Heritage Site nomination could be further considered.

The Papamoia pa complex would also need to be evaluated against other major site complexes.

3.8 TOTARANUI / OUTER QUEEN CHARLOTTE SOUND

This site, while having undoubted historical significance, would probably not merit World Heritage status in its own right. The Group recommends that consideration be given to exploration and landing sites in a wider context, in particular those of Kupe and Captain Cook.

3.9 WEST COAST MINING LANDSCAPE AND REMNANTS

An interesting case was presented by one submitter. The Group recognises the significance of the West Coast goldfields in the context of 19th century mineral exploitation. The case would benefit from extension to cover other aspects of resource extraction, particularly pounamu (greenstone) and coal mining. The close historical links with North American and Australian goldfields should be noted. These raise possibilities of international serial World Heritage Sites.

This is another case where much greater community consultation and local authority involvement would be needed to progress a case.

4.0 Natural sites of high priority for immediate World Heritage listing

4.1 Kahurangi National Park, Farewell Spit, Waikoropupu Springs & Canaan Karst System

SITE LOCATION

Kahurangi National Park (452,889 ha) occupies the north-west corner of Nelson at the northern end of the South Island. The park is centred on the Tasman Mountains and the Arthur and Matiri Ranges; it extends to the Tasman Sea in the west and is bounded by the gorges of the Buller River in the south and the Motueka and Takaka Rivers in the east. Farewell Spit Nature Reserve (11,423 ha) extends out from the park's northernmost point near Cape Farewell, as an arc around the northern side of Golden Bay. The location of the site is shown in Map 4.1. Both Kahurangi National Park and Farewell Spit are protected and managed by the Department of Conservation.

SITE DESCRIPTION

The outstanding landscape features of Kahurangi National Park are its high degree of naturalness, wilderness character and large size. Although none of the peaks are higher than 2000 m, the park is very remote and mountainous, with a core area (the 87,000 ha Tasman Wilderness Area) of completely undeveloped wilderness.





The geodiversity of Kahurangi National Park is outstanding and the most complex in any of New Zealand's large protected areas. The diversity of rock types, soils, topography and climates throughout Kahurangi has produced a remarkable array of terrestrial, freshwater, and estuarine ecosystems. With decreasing altitude, these range from alpine screes, cirque tarns, alpine bogs and fellfield, down through snow tussock grasslands and subalpine shrublands, to montane rainforests (beech) and at the lowest altitudes, humid coastal rainforest (podocarps, rata and nikau palms), dunelands, estuaries and swamps.

Farewell Spit is a one kilometre-wide arc of sand that extends for almost 30 km, enclosing 10,000 ha of intertidal sand flats along its southern edge. Strong north-westerly winds constantly sweep the sand which accumulates on the spit out into the shallows of Golden Bay, creating an outstanding habitat for shore birds.

Nikau forest grove, Heaphy Track near mouth of Heaphy River, Kahurangi National Park.
Lloyd Homer, GNS





Fluted marble cliffs on Garibaldi
Ridge, Kahurangi National Park.
Craig Potton

VALUES THAT MAY JUSTIFY WORLD HERITAGE TENTATIVE LISTING

The Natural Heritage Advisory Group consider that the proposed site probably meets all four natural criteria (*vii* to *x*) and in particular contains features of outstanding universal value with respect to criteria (*viii*) and (*ix*).

No other protected area in New Zealand has such a diversity of geological history and rock types, landforms and plant communities. In addition, the complex tectonic history of the area, coupled with the isolation of local plant and animal communities during the ice ages, has given Kahurangi a high level of endemism in its flora and in its terrestrial and aquatic invertebrate communities, including giant land snails.

Key features attesting to the site's **outstanding universal value** for *representing the earth's geological history (including the record of life) and significant ongoing geological processes in the development of outstanding landforms* (criterion *viii*) include:

- The best sequence of Paleozoic rocks in New Zealand, indicating the collision of three ancient continents and offering insights into the tectonic history of the southwest Pacific and Antarctica during the past 500 million years.
- The oldest fossils in New Zealand, with sites of international significance giving a 220 million year record from the Cambrian (*trilobites*, *brachiopods*), through the Ordovician (*graptolites*), to the Devonian (Baton River) geological period. In

addition, Permian fossils at Parapara Peak provide a unique biological link to the ancient Gondwana landmass.

- A wide range of spectacular surface landforms, including:
 - the most intact remnants of New Zealand's Cretaceous peneplain (at Mt Arthur Tablelands and Goulard Downs);
 - the only places in New Zealand where Tertiary marine sediments overlay peneplain remnants, resulting in cliff-bound 'mesa-like' plateaux (Thousand Acre Plateau and Garibaldi Ridge);
 - the impressive glaciated landforms of the Lockett Range, Cobb Valley and Tasman Mountains;
 - the Oparara Arch (the largest of its kind in Australasia) and the other limestone arches of the Oparara Basin and the limestone cliffs of the lower Heaphy Valley;
 - the many earthquake-dammed lakes (like Lake Matiri) and the earthquake modified landscapes of the Murchison-Mokihinui locality; and
 - the largest sand spit in New Zealand.
- The glaciated karst landforms (karrenfeld, pavements, and dry cirque basins) in the marble of Mt Owen and Mt Arthur are considered to be the best in the Southern Hemisphere.
- The extensive cave systems under Mt Owen and Mt Arthur contain some of the longest (Bulmer, 55 km), deepest (Nettlebed, almost 900 m) and oldest (700,000 years) caves in New Zealand. They are considered some of the most outstanding in the Southern Hemisphere.
- The Honeycomb Hill cave system in the Oparara Basin, which contains internationally important sub-fossil bird remains dating back 20,000 years (including an extinct giant eagle).

Bulmer Cave, Kahurangi
National Park.
Ian Millar, DOC





The endemic land snail *Powellipbanta gilliesi* has many distinct forms which are often confined to specific locations within Kahurangi National Park.
Dave Hansford

Key features attesting to the site's **outstanding universal value** for *significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh-water, and coastal ecosystems* (criterion ix) include that:

- Kahurangi National Park contains almost half of New Zealand's total number of higher order plants (1226 out of around 2500 species) and a remarkable 80% of its alpine flora species.
- Kahurangi has one of the highest levels of plant endemism in New Zealand (64 species, 60% of which occur in alpine ecosystems). The park is also the northern or southern limit for many common trees, shrubs and alpine herbs.
- Kahurangi is the major centre of evolution of the genus *Powellipbanta*, the colourful giant land snails, with almost half of the 64 known taxa found only within the park. The park is also recognised internationally for its variety of cave-dwelling invertebrates.



- Farewell Spit Nature Reserve has been designated a Wetland of International Importance under the UN 'Ramsar' Convention because of its significance for migratory (and New Zealand) wading birds. Most of the nature reserve (c.10,000 ha) is a tidal habitat for molluscs, crabs, shrimps, sand-hoppers and other small creatures which attract the tens of thousands of wading birds that advance and retreat with the turning of the tide. Around 90 different bird species are known to frequent Farewell Spit Nature Reserve; many of these are migratory waders that breed in Siberia and the Arctic and flock to the spit between the Southern Hemisphere spring and autumn.

Left: Turnstones, bar-tailed godwits, and South Island pied oystercatchers.
R. Sutton, DOC
 Below: Farewell Spit at sunset. *Craig Potton*





Island Lake, a cirque lake below Aorere Peak in the Tasman Mountains, Kahurangi National Park. This landscape is part of the Tasman Wilderness Area.
Les Molloy

INTEGRITY, MANAGEMENT, AND RISK ISSUES

The core site of Kahurangi National Park and Farewell Spit Nature Reserve has a very high level of geophysical and biological integrity, legal protection, planning, and day-to-day operational management effectiveness.

The Advisory Group consider there is value in the recommendations made by a number of submitters to include within the site several adjacent outstanding karst features. These are:

- **Waikoropupu Springs**, listed in the NZ Geopreservation Inventory as a site of international significance. It is the largest tidal karst spring in the Southern Hemisphere and is famous for the clarity of its water; one of the world's clearest for a major spring.
- The **Canaan karst system** in Abel Tasman National Park. This includes Harwoods Hole, a spectacular gaping pothole in the surrounding marble landscape, with a 176 m vertical cave-shaft, the deepest in New Zealand. The Riwaka Resurgence, nearby on the south-east side of Takaka Hill, also warrants consideration for inclusion in the karst extension to the site.

If these karst features are added, the advisory group considers that the integrity of the site with respect to criterion (viii) will be considerably enhanced, giving a site of outstanding universal value for the quality and diversity of karst landforms it contains and the geological processes it represents.

With respect to risk, the advisory group notes that a considerable number of submitters, mainly from outdoor recreation and conservation groups, are opposed to the listing of the site as World Heritage. Their reasons relate mainly to their fear that an increase in foreign tourists could lead to a loss of wilderness values if the site were listed.

Waikoropupu Springs, the largest tidal karst spring in the Southern Hemisphere.
Lloyd Homer, GNS



4.2 Kermadec Islands & Marine Reserve (and White Island and Seamounts along the Kermadec Ridge)

SITE LOCATION

The Kermadec archipelago contains the northernmost land and territorial seas in New Zealand. Raoul Island (Rangitahua) is by far the largest (2900 ha) of the 15 islands, which are spread as four clusters in a line over 250 km of the Pacific Ocean (Latitude 29° - 32° S and Longitude 177° - 179° W), about 1100 km north-east of the Northland coast (see Map 4.2).

The Kermadec Ridge is a chain of volcanic islands and submarine volcanoes (seamounts) lying in a line extending for 1100 km from Raoul Island to White Island, parallel to and about 140 km to the west of the deep Kermadec Trench (see map). White Island (Whakaari) lies 48 km off the Bay of Plenty coastline, at the southern end of the Kermadec Ridge.

SITE DESCRIPTION

The site for immediate consideration consists of the land and marine environment of the Kermadec Islands. Raoul, Macauley, Curtis, Cheeseman, the Meyer Islands, and the other smaller islands are all strictly protected as the Kermadec Islands Nature Reserve

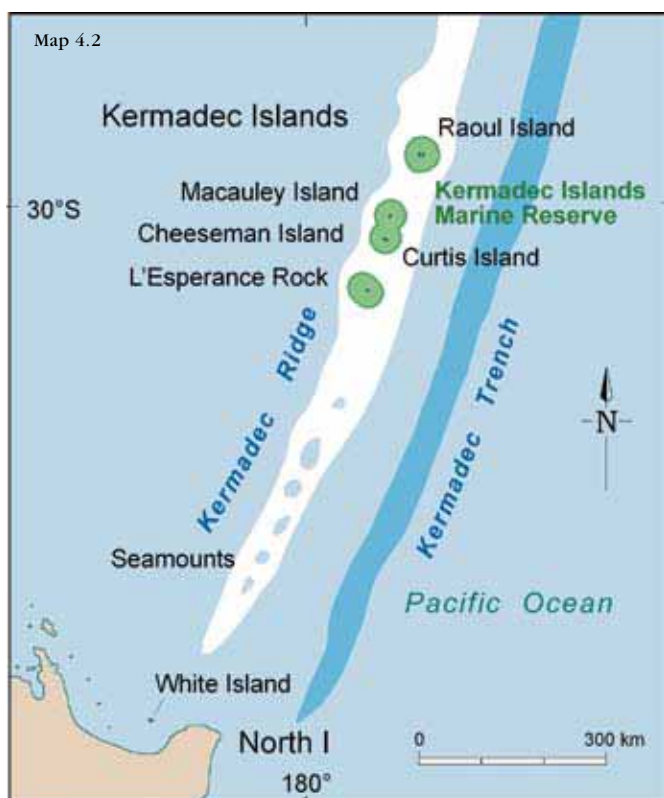
(total area 3280 ha); the much larger Kermadec Islands Marine Reserve (748,000 ha) surrounds the islands. Both the nature reserve and marine reserve are administered by the Department of Conservation (DOC).

In the longer term, the Advisory Group believes that there is a good case for extending the site SSW along the Kermadec Ridge (see map) to include a representative group of seamounts and the active marine volcano, White Island.

The Kermadec Islands are the northernmost of a chain of enormous deep-sea volcanoes making up the Kermadec Ridge, rising to a height of 8000 to 10,000 metres from the depths of the Kermadec Trench and extending up to 516 m above sea level on Raoul Island. The Kermadec Ridge has been formed by the intense tectonic activity associated with the subduction of the Pacific Plate under the Indo-Australian Plate. The Kermadec Ridge includes the volcanically-active White, Raoul and Curtis Islands, and is part of the great 'Pacific Ring of Fire'. Raoul Island erupted in 1964 and more

recently in the tragic eruption of March 2006. Earthquakes are a regular occurrence on Raoul Island and along the entire Kermadec Ridge.

The climate of the Kermadec Islands is mild and subtropical and they are occasionally battered by cyclones. Like many of the volcanic islands of the Pacific, the warm temperate forest of Raoul Island is dominated by species of the genus *Metrosideros*, in this case the Kermadec pohutukawa (*M. kermadecensis*). Nikau palms are widespread, conferring a distinctly subtropical look to the landscape, with ngaio, karaka, mahoe, mapou, and wharangi also common trees.





Raoul Island, taken in 1992,
looking SW across Blue and
Green Lakes to Denham Bay.
GeoSmart

VALUES THAT MAY JUSTIFY WORLD HERITAGE TENTATIVE LISTING

The Natural Heritage Advisory Group consider that the proposed site probably meets all four natural criteria (*vii* to *x*) and in particular contains features of outstanding universal value with respect to criteria (*viii*), (*ix*), and (*x*). They consider that the Kermadec Islands and the marine reserve could be immediately advanced for World Heritage site nomination. The outstanding universal values of this site relate very much to the biological values addressed by criteria (*ix*) and (*x*), especially for the marine assemblage.

In the longer term, the Advisory Group recommends a more diverse serial nomination, extending the site to include White Island and the best candidates among the seamounts of the Kermadec Ridge. Such an enlarged site would contain outstanding universal geological values addressed by criterion (*viii*), as well as strengthening the case based on marine biological values.

Macauley Island, looking WNW
past Haszard Islet.
Mike Ambrose, DOC





Left: A large spotted black grouper, a subtropical fish which can live to over 100 years.

The Kermadec Islands Marine Reserve now protects one of the largest remaining natural populations of subtropical grouper in the world.

Right: Red coral (*Errina* sp.) and blue maomao, Kermadec Islands Marine Reserve.

Photos: Roger Grace

Criteria (ix) and (x)

The marine environment of the Kermadecs is probably the most isolated and least modified in the country, matching that around New Zealand's Subantarctic Islands World Heritage Site. In terms of their marine ecology, the Kermadecs occupy a position intermediate between the tropical islands of the Pacific (*i.e.* they lack coral reefs although reef-forming coral species grow at the islands) and the temperate New Zealand mainland (*i.e.* they have a pan-tropical seaweed flora and most of the large brown algae of the NZ mainland are absent). The marine reserve protects marine habitats lying over a huge depth range, from mean low water mark to over 3000 metres deep.

The marine environment contains a number of outstanding marine fauna features, in particular:

- sea snakes and turtles;
- tropical herbivorous fish;
- giant limpets;
- the southern limit of a number of marine organisms, such as the Crown of Thorns starfish; and
- huge spotted black grouper, believed to be the largest remaining population in the world. This fish can grow up to a metre in length, possibly live for 100 years, and is strictly protected at the Kermadecs under fisheries, wildlife and marine reserve legislation.

South-east coast of Raoul Island from near D'Arcy Point.

Mike Ambrose, DOC

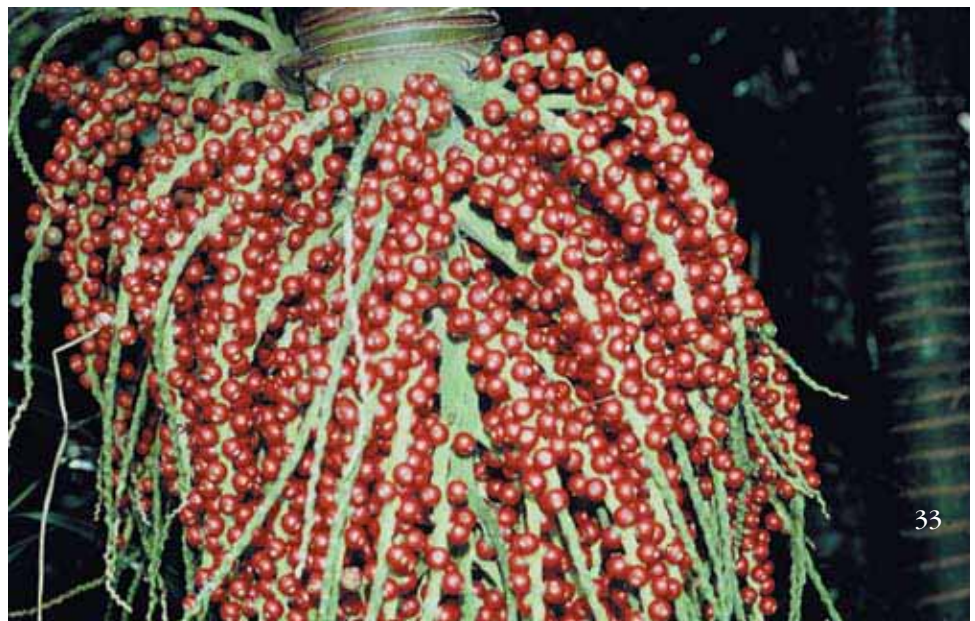




Interior of nikau forest,
Raoul Island.
Roger Grace

Right: Fruits of the Kermadec
nikau palm.
Don Merton, DOC

Key rare plant species are *Hebe breviracemosa*, *Pittosporum aff. crassifolium* and *Senecio kermadecensis*, with *Lepidium oleraceum* on Macauley Island.



Although the Kermadecs lie in similar latitudes to the marine communities at Lord Howe and Norfolk Islands, the marine ecosystems at the Kermadecs have a unique setting and unique features: their position straddling the ridge/trench of the plate boundary; their tectonic activity (especially the hydrothermal vents); their position in relation to the oceanic current systems in the South Pacific Ocean; and the wide depth-range of the marine reserve. Although Australia's Great Barrier Reef World Heritage site is much larger, the Kermadec Marine Reserve is possibly the largest strictly protected marine area in the world.

The land fauna and flora of the islands are also very interesting. Like the Hawaiian Islands, the Kermadecs are true 'oceanic islands'. Such islands have never been joined to continents by land-bridges and consequently they usually lack indigenous reptiles and mammals. Twenty-one indigenous bird species breed on Raoul Island, four of which are endemic. Curtis and Macauley Islands contain the world's largest populations of Kermadec shearwater and black-winged petrel.

The flora of the Kermadec Islands is quite restricted in extent, most plants having arrived because their seeds were carried on the wind, floated across the ocean, or attached to the feathers of migrating birds. Outstanding land vegetation features are:

- its youthfulness;
- the high level of endemism (23 out of a total of about 115 indigenous vascular plants); and
- the many examples of adaptive evolution of distinctive Kermadec species from mainland New Zealand genera which have made their way to the islands.



White Island (Whakaari).
Lloyd Homer, GNS

Criteria (vii) and (viii)

A serial site containing White Island, key seamounts, and the Kermadec Islands would be the outstanding protected section of the 'Pacific Ring of Fire'. White Island and the seamounts are *superlative natural phenomena* and the former has a stark but *exceptional natural beauty* (criterion *vii*). White Island is New Zealand's most active and largest marine volcano and the seamounts (including those which are volcanically active or contain hydro-thermally active vents like some of the Rumble Seamounts) display *significant on-going geological processes in the development ofgeomorphic features* (criterion *viii*). The seamounts also display a variety of volcanic landforms; some are simple cone-shaped; others have calderas. The Kermadec Ridge/Trench is also considered to be of geo-historical importance as a key site where 'seafloor-spreading' (and the increasing age of the ocean floor with distance from the mid-ocean ridge) was first recognised, leading to a fuller understanding of the dynamics of plate tectonics.

The fluids released from the hydrothermal vents of the seamounts are of considerable scientific interest because of their unusual chemistry. Furthermore, new populations of organisms are being discovered around these vents, many uniquely related to the depth, geochemistry, and flow characteristics of the hydrothermal waters. Of considerable interest are the differences in organism assemblages on seamounts as little as 50 km apart, indicating that there is likely to be a high degree of *evolutionary diversity* in marine life along this chain of 'underwater mountains'. However, although the Kermadec Ridge's marine biodiversity is currently subject to increasing scientific study, the benthic biodiversity of most of the seamounts is as yet little known. This supports the wisdom of using a two-stage process, whereby a full site is advanced for nomination once a representative group of protected seamounts can be selected.

INTEGRITY, MANAGEMENT, AND RISK ISSUES

There are no known integrity, management, or risk shortcomings for the Kermadec Nature Reserve and Marine Reserve components of the site. Both reserves are among the most strictly protected in New Zealand. The marine reserve encompasses a very wide range of underwater landforms and marine ecosystems.

Past human occupation has modified the indigenous flora and fauna of the islands. The introduction of a number of pest animals (such as kiore, goat, cat and Norway rat), weeds and unsuccessful attempts to farm sheep and cattle on Raoul Island, all had detrimental impacts on the islands' land ecosystems. However, in the last 15 years impressive rehabilitation progress has been made in the removal of weeds and pests from all the affected islands in the group. A major conservation landmark was achieved in 2004 with the eradication of Norway rats and cats from Raoul Island. Rats are currently being removed from Macauley Island. It is anticipated that the remaining weed species on Raoul Island will be under control or eradicated within a couple of years.

White Island is a private scenic reserve and the support of the owners would be necessary before any moves are made to add it to the site. Tourism (including diving in the extremely clear waters around the island) is the main commercial activity and could pose a risk if it escalates beyond its present level. There is no legal protection for the marine environment around White Island (regarded by DOC as a prime candidate for marine reserve status because of the scientific values of its unique biophysical environment). A 1,444 ha marine reserve has been proposed for the Volkner Rocks five kilometres northwest of White Island, but this proposal is considered inadequate for protecting the outstanding marine environment around the volcanically-active island.

The integrity, management and risk issues associated with the Kermadec Ridge seamounts are more complex. Only one (Rumble III) of the 19 seamounts along the Kermadec Ridge is currently protected. Although most of the Kermadec Ridge seamounts have not yet been subjected to fishing pressure, the risk of further damage from trawling is a serious threat to their integrity. Mining around the hydrothermal vents of the seamounts is another serious threat. The Advisory Group consider that ecosystems around the Kermadec Ridge seamounts are so vulnerable that there should be a moratorium on any fishing and mining until the provisions of the 2005 Marine Protected Areas policy have been applied to the entire chain and a system of protected areas and a sustainable fishing regime devised.

Blue and Green Lakes,
Raoul Island, prior to the
2006 eruption.
Mike Ambrose, DOC



4.3 Whakarua Moutere (North-East Islands)

SITE LOCATION

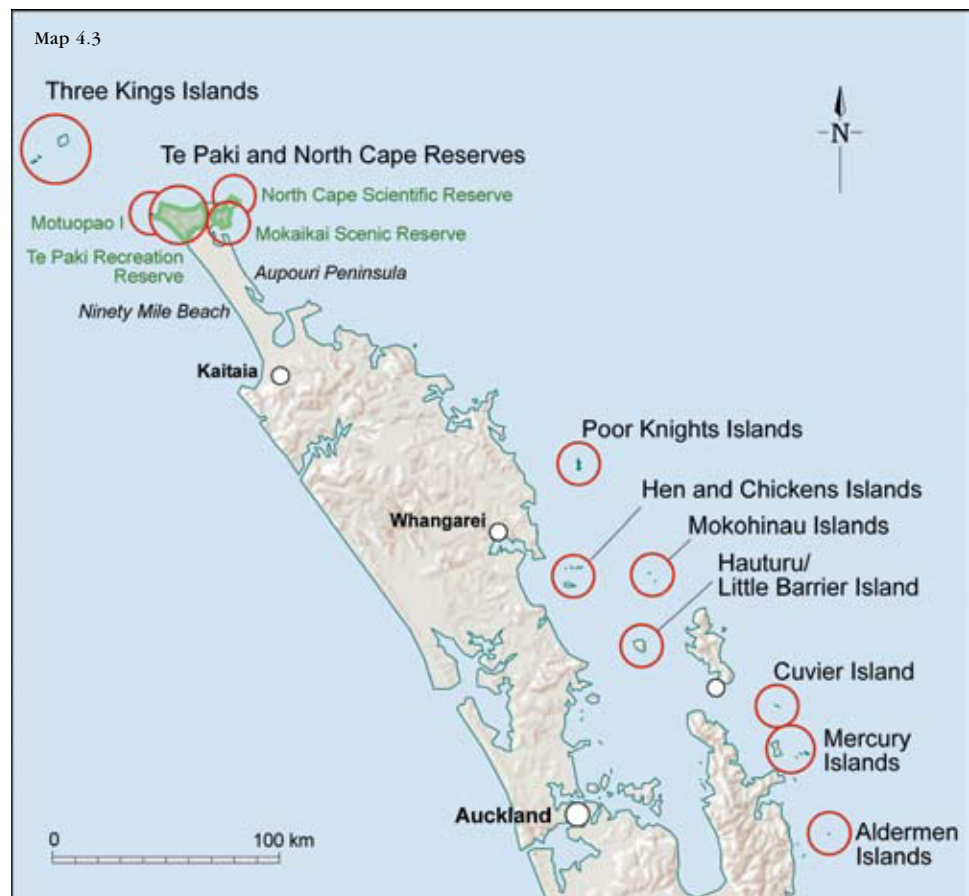
Whakarua Moutere (or the North-East Islands) is a serial site consisting of nine locations (eight of them island groups) extending along the northeastern coastline of the North Island from the Three Kings Islands (latitude 34° 10' S) 60 km NW off Cape Reinga, to the Aldermen Islands (36° 58' S) 20 km off the eastern coast of the Coromandel Peninsula.

The nine clusters in the site are:

- Three Kings Islands/Manawatawhi;
- Te Paki and North Cape Reserves;
- Poor Knights Islands;
- Hen and Chickens Islands;
- Mokohinau Islands;
- Hauturu/Little Barrier Island;
- Cuvier Island;
- Red Mercury and the lesser Mercury Islands; and
- Aldermen Islands

The location of each cluster in the site is shown in Map 4.3.

Most of the island groups lie 20-40 km off the North Island coastline, although this varies from 6-14 km for the lesser Mercury Islands, to 60 km for the Three Kings, and 100 km for the Mokohinau group. The only non-island location, Te Paki and North Cape Reserves, lies at the far northern tip of the North Island.





Sunset beyond Princes Rocks
and West Island off South West
Island, Three Kings Islands.
A. Booth

SITE DESCRIPTION

Most of the islands are deeply eroded andesitic and rhyolitic volcanic remnants, although some (Three Kings, Chickens group) have greywacke basement rock exposed. The islands, of volcanic origin, range in age from two million to 100,000 years; none of them are currently active volcanically. Although most of the islands in the eight groups are between 20 and 200 hectares, Great Island (Three Kings) is 407 ha, Taranga (Hen Island) is 484 ha, while Hauturu/Little Barrier is the largest at 2,817 ha. At the other extreme, the Aldermen Islands are a cluster of jagged islets each only a few hectares in size. The landforms of all the islands are rugged in outline, with precipitous coastlines and many pinnacles and rock stacks off-shore. Many of the islands are 200-300 m above sea level at their highest point, with Little Barrier the highest, reaching 722 m at its Mt Hauturu summit.

The Te Pahi and North Cape Reserves cluster consists of Motuopao Island Nature Reserve (29 ha) and three large protected areas: North Cape Scientific Reserve (683 ha); Mokaikai Scenic Reserve (4729 ha); and parts of Te Pahi Recreation Reserve (18,878 ha). Prior to the Pleistocene ice ages, the present-day headlands like North Cape, Cape Reinga, and Cape Maria van Diemen, were probably a group of islands of volcanic origin (part of the Tangihua Complex, mainly basaltic pillow lavas of late Cretaceous age, c.65 million years old). These islands subsequently became linked to the Northland mainland by a long neck of sand (the Aupouri tombolo, with the sweep of Ninety Mile Beach along its western margin), which accumulated as sea levels dropped.

Looking SW across Te Werahi
Beach to Cape Maria Van
Diemen and Motuopao Island
from Cape Reinga locality.
Les Molloy





Hauturu (Little Barrier Island).
Dick Veitch, DOC

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The Advisory Group considers that the site is of **outstanding universal value** with respect to criteria *(vii)*, *(ix)* and *(x)* and possibly criterion *(viii)*.

Criteria (vii) and (viii)

In total, the 60 individual islands, islets, and stacks in the site present an outstanding array of volcanic landforms, both above and below waterline. Because of the proximity of most of them to the mainland coastline, they present an outstanding scenic seascape. The views of the Mercury Islands from the Coromandel, Little Barrier Island from the Hauraki Gulf, and the Poor Knights, Taranga and Sail Rock from the eastern Northland coastline are particularly notable. Five of the Te Pahi/North Cape beaches – Twilight Beach, Te Werahi Beach, Spirits Bay, Tom Bowling Bay, and Waikuku Beach – are of outstanding recreational and scenic value. The high sand dunes around the mouth of Kauaeaparoa (Te Pahi) Stream at the north-western end of Ninety Mile Beach are of exceptional natural beauty.

Because the islands display such geological diversity and range of ages, they are likely to be of international significance in displaying on-going evolution of island landforms. For instance, Little Barrier Island exhibits the combined effects of its geology and extreme climatic and tectonic events in its deeply-incised planezes. The deep gullies are subjected to periodic mass collapses of the hill slopes, devastating the forest and streambed ecosystems and leading to unusually floristically diverse ‘disturbance vegetation’. A comprehensive analysis of the geological and geomorphological values of the islands would be necessary before any decision could be made to advance a nomination on the grounds of criterion *(viii)*.

Criteria (ix) and (x)

The proposed Whakarua Moutere World Heritage Site islands present an outstanding range of degrees of isolation, both in physical distance from the mainland and in the length of time they have been separated. As such, they function as windows to allow the observation of on-going biological processes, not only in New Zealand but also for understanding the biogeography of the world’s remaining natural isolated island groups.

Plant endemism tends to be higher in those island groups which have been isolated for longer. For instance, the Three Kings islands, which have been a separate entity for approximately 2 million years, shelter 13 species of endemic higher plants while only three can be found on the Poor Knights, which have only been isolated from the mainland for around half as long.

The differing biogeographical histories of the islands have allowed the evolution of an exceptional community of animal species. The islands possess fauna which is unique to New Zealand and the world, including two distinctive orders of animal taxa; Apterygiformes (kiwi) and especially Sphenodontia (tuatara). Of particular significance is the northern tuatara (*Sphenodon punctatus punctatus*), one of only two tuatara species – the sole surviving members of an order which was well-represented by reptile



Tuatara, Hen & Chicken Islands.
John Gardiner, DOC

species 200 million years ago. As all the other members of this order died out 65 million years ago, the tuatara is of outstanding international interest to biologists. Thriving populations of tuatara occur on many of the islands within the site, especially on the Aldermen, Mercury and Marotere Islands in the Hen and Chickens group and on several islands of the Poor Knights group.

Another example of an ancient taxon present on the islands is the weta, a large Orthoptera belonging to two families which are endemic to New Zealand. These invertebrates have evolved into large, heavy and flightless forms, having adapted to island life without large predators. This adaptation is very apparent with giant weta, such as the Mercury Island tusked weta and the wetapunga of Little Barrier Island, which has the distinction of being the heaviest insect in the world (up to 71g).



Left: Tusked weta, Middle
Island, Mercury Islands.
E.A. Humpbreys
Right: Poor Knights giant weta.
Mike Aviss, DOC

Other examples of on-going biological evolution are found within reptile families. There are distinct morphological differences between species of *Hoplodactylus* geckos present on the Poor Knights and Three Kings Islands (and elsewhere within the site). This phenomenon occurs also between the bellbird subspecies of the Poor Knights and Three Kings Islands.

The islands encompass *globally important and significant natural habitats for in-situ conservation of biological diversity* (criterion x).

Around 6% of New Zealand's indigenous terrestrial vascular plant species are wholly restricted to offshore and outlying islands, including at least 127 higher plants, 110 of which are endemic. Many of New Zealand's threatened and endangered plant species can be found on the proposed Whakarua Moutere World Heritage Site, such as the wood rose, relict endemic species like the Poor Knights lily, spleenwort, a liane (*Tecomanthe speciosa*) and Cook's Scurvy grass. Little Barrier Island is particular outstanding for its diverse forest habitat and contains the largest remaining area of unmodified forest in northern New Zealand. The distinctive altitudinal sequence of forest extends from mainly pohutukawa forest around the shoreline; to kanuka on the lower slopes and kauri,



Left: *Tecomanthe speciosa*
flowers and foliage, Great island,
Three Kings Islands.
Dick Veitch, DOC

Right: *Corybas rivularis*
orchids, Hauturu/Little
Barrier Island.
Dick Veitch, DOC

beech, and tawa through the valleys and ridges; to a cloud forest of quintinia, tawari, and rata around Mt. Hauturu. Little Barrier's plant diversity is one of the highest in the country for such a small island; over 370 higher plants including 90 varieties of fern; yet it lacks common plants like putaputaweta, cabbage tree and most of the podocarp trees. There are also 18 threatened plant species on the island, including wood rose, giant-flowered broom, and parapara (rare on the mainland).

Little Barrier Island has become one of the most important island wildlife refuges in New Zealand because of its lack of most introduced predators. It is inhabited by more endangered bird species than any other island in New Zealand, including the last natural population of stitchbird. There are two endangered mammals, the northern short-tailed bat and the long-tailed bat, which inhabit the forests throughout Little Barrier. The island has the second highest diversity of reptiles of any of New Zealand's offshore islands, including tuatara and the endangered chevron skink. One of the more outstanding features of the wildlife on Little Barrier Island is the endangered wetapunga (see above text). There are also a number of endemic species of earthworms and spiders. Little Barrier Island has the largest colony of the endemic and endangered Cook's petrel in New Zealand and one of the largest colonies of northern blue penguin. It also has important colonies of black petrels.

Little Barrier has the distinction of being protected as New Zealand's first legally protected Nature Reserve in 1895. However, all the Whakarua Moutere islands have a prime conservation function as 'sanctuary islands', where threatened species can recover. This is just as true for the smaller islands like Middle and Green Islands in the Mercury group, where tuatara live free of predators. Up to 10 species of skinks and geckos per island also thrive in these unmodified habitats.

Left: North Island kaka,
Hauturu (Little Barrier Island).
Dick Veitch, DOC
Right: North Island saddleback,
Cuvier Island.
Dick Veitch, DOC





Robust skink, Korapuki Island,
Mercury Island group.
Dave Towns, DOC

Whakarua Moutere 'restoration islands' provides an outstanding model of conservation, not only for the modified, weedy and predator-ridden New Zealand mainland, but for threatened island habitats globally.

Among Whakarua Moutere's threatened species of outstanding universal value (criterion x) are the tuatara and kiwi, both belonging to animal orders endemic to New Zealand (see above). Tuatara are the last surviving members of their order, all others becoming extinct 65 million years ago; kiwis have evolved physical characteristics atypical of most avifauna. Because the islands offer a refuge from introduced predators, they are of

outstanding universal value from the point of view of science or conservation in preserving these and many other of New Zealand's iconic endemic species.



Pycroft's petrel, Poor Knights
Islands.
Mike Aviss, DOC

The proposed Whakarua Moutere islands are also vital seabird breeding habitat. New Zealand has the world's highest seabird diversity, with 84 recognised species, nearly a quarter of the world's total, breeding in New Zealand. A high proportion of these (42%) are endemic. Over 20 of these seabird species breed within the proposed site and nearly half breed nowhere else in the world. Cook's petrel, with a current breeding

population of about 51,000 pairs, is the only endangered seabird species in the proposed site. Two other species breeding on the islands are classified as vulnerable; the black petrel and Buller's shearwater. The islands are also home to over 20 species of reptile, more than 20 species of land birds and two species of bats. Many of these animals are

currently restricted to the islands, their last refuge from invasive predators. Seven species, including the chevron skink and the northern short-tailed bat, are endangered, with the Whakarua Moutere island populations crucial to their survival.

The only non-island member of the proposed site, Te Paki and North Cape Reserves, lies within one of the smallest but most distinctive ecological districts in New Zealand. The long isolation of the present-day volcanic headlands as islands has allowed the development of diversity and endemism in their flora and fauna to levels probably unparalleled elsewhere on the New Zealand mainland. The widespread manuka-kanuka shrubland and rushland is an important habitat for nine species of lizard and many endemic species of insects and land-snails, including *Placostylus* flax snails. The beaches between the headlands are also of national significance for the biodiversity of the native plant communities on their sand dunes; together they stand alongside those of Fiordland as the most botanically-valuable dune ecosystems in the country.



Dunes fringing Kauaeaparaoa
(Te Paki) Stream.
Les Molloy



Flax snails, Three Kings Islands.
Greg Sberley, DOC

From a plant biodiversity perspective, the most outstanding Te Pahi landscape is the 'serpentine shrubland' that is protected in North Cape Scientific Reserve. Here, the Surville Cliffs and the plateau between Kerr Point and North Cape consist of 'ultramafic' rocks which have a high content of minerals containing iron and magnesium. These give rise to soils which have poor structures and are toxic to most plants. Like other ultramafic landscapes, the reserve is largely devoid of forest vegetation. Instead it has a tangled shrubland of hardy grasses and stunted, woody species that includes tanekaha, mingimingi, tauhinu and species of *Coprosma*, *Pomaderris*, and *Pittosporum*. However, the qualities that make the ultramafic environment of North Cape so special compared with the equally visually-dramatic South Island serpentine shrublands, are its high levels of floristic diversity and plant endemism. Over 330 different indigenous vascular plants are found in the North Cape - Waikuku locality and around 20 of these are endemic.

In summary, the outstanding universal biological values of the site lie in the uniqueness of its species combinations; the high diversity of invertebrates, reptiles, seabirds, seaweed and benthic marine invertebrate (sponge/bryozoan) communities and their crucial role as havens for New Zealand's iconic giant land snails, weta and tuatara. The diversity within individual island clusters is also extraordinary: Little Barrier has at least 100 species of land snail and tiny (13 ha) Middle Island in the Mercury group has 10 species of lizard. The only mainland locality, Te Pahi and North Cape Reserves, has retained a high diversity of endemic plants and invertebrates. While it has lost its seabirds and many species of reptiles, relict populations remain on the adjacent Motuopao and Murimotu Islands, offering future restoration potential.

INTEGRITY, MANAGEMENT AND RISK ISSUES

Most of the islands, as Nature Reserves or Wildlife Sanctuaries, have the highest level of legal protection available, although Burgess Island in the Mokohinau group is only a Scenic Reserve. In terms of their legal protection and their strict management for conservation purposes by the Department of Conservation, the Advisory Group considers that there are no impediments to immediately placing the proposed site on the tentative list of New Zealand World Heritage sites.

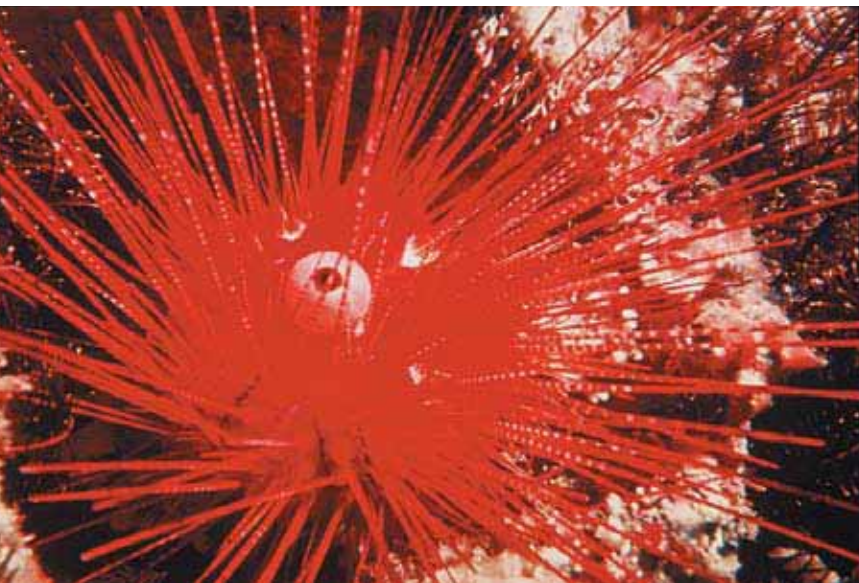
In the longer term however, consideration should be given to extending the site by:

- (a) adding Mayor Island (Tuhua);

Mokohinau Islands.
Terry Greene



- (b) adding Ohinau Island, the privately-owned Murimotu Island off North Cape, and some of the smaller privately-owned islands in the Cavalli Islands group; and
- (c) including marine protected areas which may eventually be formed around the island clusters (or Te Paki/North Cape).



Sea urchin,
Poor Knights Marine Reserve.
DOC

Mayor Island has a number of outstanding geological features; for example, a double caldera and two crater lakes. Its rock types and bold landforms would considerably strengthen the case under criterion (viii). Its geology also accounts for Tuhua being a place of great importance to Maori: high-quality obsidian (a volcanic glass) was historically quarried for flakes with sharp cutting edges. The island has low plant diversity and although its fauna has been decimated by feral cats, predator control is restoring wildlife numbers. The island is co-managed in a special relationship between the tangata whenua and the Department of Conservation (DOC). The agreement of the former would be prerequisite for the inclusion of Tuhua in the site.

Ohinau Island, five kilometres off the Coromandel coast, has had all pests removed; nearby Ohinauiti Island has never had introduced mammals and has interesting vegetation similar to the smallest Mercury Islands. If these islands are eventually included they could, like Mayor Island/Tuhua, demonstrate a unique conservation management partnership between iwi and DOC. Murimotu Island off North Cape is privately owned, but if its owners agree, its inclusion would add value to the Te Paki and North Cape Reserves component of the site.

Only one of the island groups, the Poor Knights, currently has a marine reserve surrounding part of the islands, although there is another marine reserve off part of the Mayor Island coastline. The progressive identification of important marine ecosystems around the New Zealand coastline is likely to bring about the establishment of further marine protected areas around some of the island clusters. There is also a strong biological and landscape conservation case for including Parengarenga Harbour, which is the northernmost of New Zealand's major estuaries and probably one of the largest that is still in a natural state.

The seas around the Three Kings Islands, the benthic communities of Spirits Bay and Tom Bowling Bay, Parengarenga Harbour, and the rock wall and fish communities of the Poor Knights Islands are also outstanding marine ecosystems with high levels of species diversity and endemism. An outstanding feature of these marine environments is their relatively unmodified nature, with high water clarity arising from low levels of human-induced sedimentation.

The Natural Heritage Advisory Group is aware of the cultural significance of many of the islands in the proposed site, which contain archaeological sites including pa, fishing camps, middens and cultivation sites. The Advisory Group recommend therefore that the Cultural Advisory Group also look closely at this proposed serial site to assess its cultural significance.

4.4 Canterbury High Country Braided Rivers and Lakes (Rangitata River, Rakaia River, Ashburton Lakes-Hakatere, Upper Ashburton River)

SITE LOCATION

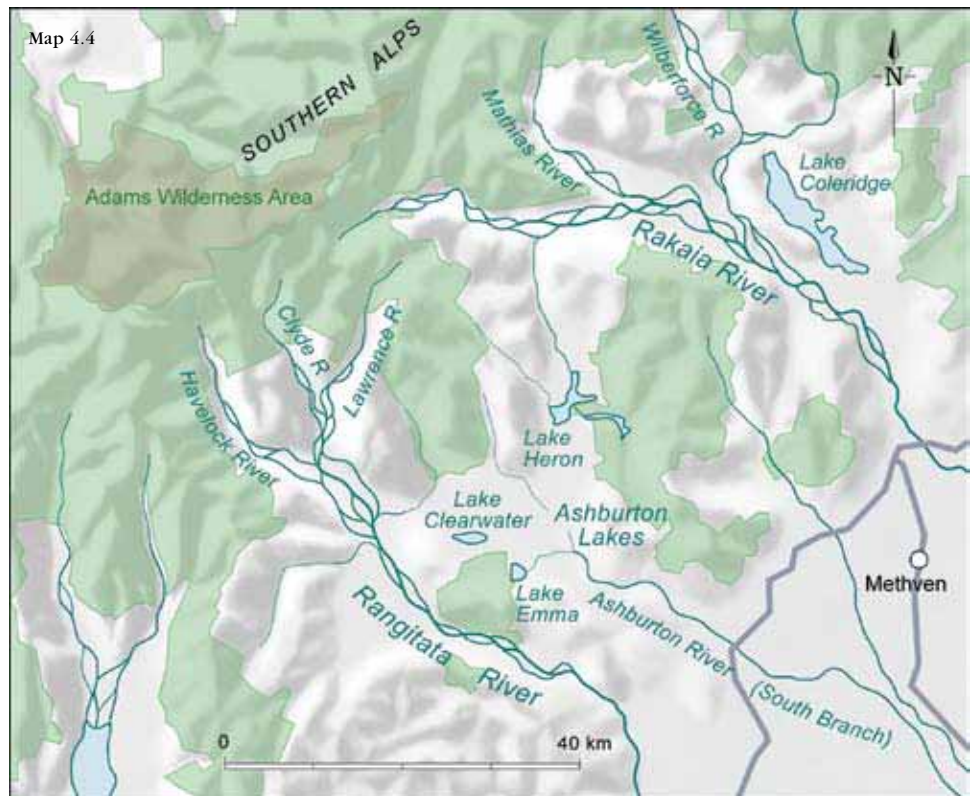
The Rangitata and Rakaia Rivers each flow for more than 100 km from their headwaters in the Southern Alps/Ka Tiritiri o te Moana in Canterbury, past the inland basin of the Ashburton Lakes and upper Ashburton River, through gorges and across the outwash gravels of the Canterbury Plains, before entering the sea in the Canterbury Bight. The headwaters of these two rivers originate in the ice fields of the central Alps, including the Garden of Eden, Lyell and Ramsay Glaciers (all within the Adams Wilderness Area). Major tributaries include the Wilberforce, Mathias, Clyde and Havelock Rivers. Headwater mountain ranges include the Rolleston, Rugged, Armoury, Potts, Cloudy Peak, Two Thumb and Jollie Ranges (see Map 4.4).

SITE DESCRIPTION

This riverine-wetland network is characteristic of New Zealand's braided river and high country lake systems lying to the east of the crest of the Southern Alps/Ka Tiritiri o te Moana. The Rangitata River (>20,000 ha), Rakaia River (>30,000 ha) and Ashburton Lakes and associated wetlands (>10,000 ha) are habitats of outstanding value to wildlife, particularly indigenous freshwater birds and fish. The Rangitata and Rakaia Rivers represent the largest habitats for aquatic birdlife in New Zealand. Outwash gravels of the upper Rangitata are the most extensive in New Zealand, spanning a width of 5-8 km in some places. The site's headwaters lie within the Adams Wilderness Area (56,000 ha) and the Rangitata-Rakaia Headwaters Conservation Area (97,000 ha), all of which is completely undeveloped wilderness.

Lake Coleridge (centre, left),
upper Rakaia River (far left),
and Wilberforce River (centre,
distance), in winter, looking
north-west to the Southern Alps
(Ka Tiritiri o te Moana)
Lloyd Homer, GNS





The Ashburton Lakes basin, an ancient convergence zone of the Rangitata and Rakaia glaciers, has one of the richest visually-apparent glacial histories etched in the landscape. There are 15 sizeable lakes with associated wetlands (c.6,000 ha) and literally hundreds of small kettle holes, wetland turfs, and seepages on old moraine terraces (>4,000 ha). There is a particularly high diversity of palustrine, lacustrine and riverine wetlands, including alpine tarns and bogs, fellfield and basin wetlands.



The braided upper Ashburton River (above its gorge) crosses the basin. The network of wetlands is also linked to the Rakaia River system via Lake Heron, the Cameron River and Lake Stream.

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The Natural Heritage Advisory Group consider that the proposed site probably meets all four natural criteria (*vii* to *x*).

Key features attesting to the site's outstanding universal value for superlative natural phenomena and areas of exceptional natural beauty and aesthetic importance (criterion *vii*) include:

- A diversity of spectacular glacial and fluvio-glacial landforms, including: U-shaped alpine valleys, lateral moraines, hummock fields, truncated benches and spurs, incised side-streams, outwash plains, and roche moutonnées.
- Extensive and constantly-evolving braided river systems extending across the outwash plains from the mountains to the sea.
- The panoramic views of both the surrounding mountains and river outwash plain, which encompass much of the natural processes that are an integral part of the Canterbury high country landscape.
- That together, the upper Rangitata and Rakaia Rivers represent outstanding international examples of braided river systems. They are iconic landscape features of the east coast of the South Island of New Zealand.
- That the mountainous headwaters have outstanding wilderness character, with large size and landscape features with a high degree of naturalness.

Key features demonstrating the site's outstanding universal value for representing the earth's geological history and significant ongoing geological processes (criterion *viii*), especially in respect to their contribution to the development and maintenance of dynamic habitats for distinctive, rare and threatened wildlife and plant communities, include:

- That no other area in New Zealand has such a diversity of wetland types and associated wildlife and plant communities that are a fundamental expression of the complex glacial history of the area and the ongoing geological processes associated with braided rivers.

Lake Heron in winter, reflecting
Sugarloaf and the Taylor Range.
Donald Geddes





Braided bed of the Rakaia River,
looking NE from Glenfalloch
towards Manuka Point and
the confluence with the
Mathias River.
Jane Sedgeley, DOC

- That the distinctive water source, slope, altitude and catchment cover all combine to create dynamic erosion and deposition events that contribute to hydrologically and physically unstable systems. Thus, the braided rivers are characterised by comparatively high levels of instability and multiple channels, high ratios of bed-material to total sediment load, high gradients, high levels of sediment supply, and low levels of channel sinuosity and stability. It is this very instability that creates the rich diversity of wildlife habitats.
- The distinctiveness of the Rakaia and Rangitata Rivers in being the only two rivers whose flows both originate from high altitude glacier-dominated mountain sources and run across the Canterbury Plains to the sea.



Key features attesting to the site's outstanding universal value for significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh-water, and coastal ecosystems (criterion ix) include that:

- The Rangitata River-Ashburton Lakes Basin-Rakaia River represents the largest habitat for aquatic birdlife in New Zealand, supporting approximately 30% of indigenous New Zealand species. Its aquatic habitats cover >70,000 ha and support around 40,000 water and wading birds at any time.
- The system is outstanding in terms of its natural diversity, distinctiveness, intactness, and long-term viability for wildlife.
- Its importance for wildlife arises from the large area and high degree of naturalness or intactness of the habitats. Particularly notable are the largely natural river flows, the extent of braiding, and the high percentage of substantially bare terrestrial habitat on the riverbed.

It is worth noting that the system fulfils all criteria for designation as a Wetland of International Importance under the UN 'Ramsar' Convention because of its significance for endemic wading and water birds.

Key features illustrating the site's outstanding universal value for the importance of the conservation of significant biological diversity, including threatened species of universal value (criterion x) include that:

- The Rangitata River-Ashburton Lakes-Rakaia River complex contains all the water and wading bird species representative of New Zealand's braided rivers, coastal bar-type lagoons and South Island lacustrine and palustrine wetlands (>80 species).

Red tussock landscape,
Lake Heron.
Colin O'Donnell, DOC



Wrybill, with nest
containing a chick.
M.F Soper



- The system is of outstanding value for threatened animal species. At least 16 threatened bird species, one bat species and four lizard species are present. More than 20 threatened plant species, with habit forms especially adapted to braided rivers, are present.
- Site habitats support the following national totals of breeding birds: >80% of wrybill plover, 20% each of Australasian crested grebe and New Zealand scaup, and >10% of black-fronted terns.

It is generally accepted that over 90% of wetlands have been lost in New Zealand. However, overall wetland loss in the Rangitata-Ashburton Lakes Basin has been remarkably low at only 1.5%.

INTEGRITY, MANAGEMENT, AND RISK ISSUES

Time constraints meant that the Advisory Group were unable to determine exact boundaries for the site. Nevertheless, the group are confident that a core site with a high level of geophysical and biological integrity could be identified. Virtually all the area is under some form of Crown administration. Although legal protection is not complete, it is achievable in the near future. The area contains more than 100,000 ha of land and freshwater managed by the Department of Conservation as a Wilderness Area, Conservation Areas, Stewardship Land, Nature Reserves, and Wildlife Management Reserves. The Rangitata River bed (c.18,000 ha) and Rakaia River bed (32,000 ha) are classed as Unoccupied Crown Land. The waters of the Rangitata River and Rakaia River are protected by Water Conservation Order legislation. Numerous Crown Pastoral Leases in the rivers' catchments have been assessed under the Tenure Review process, with the result that more than 10,000 ha are now designated as conservation land. Tenure Review negotiations are under way for several other pastoral leases, which could lead to increased integrity for the proposed site.

4.5 Rotorua Geyser Fields and Geothermal Sites

SITE LOCATION

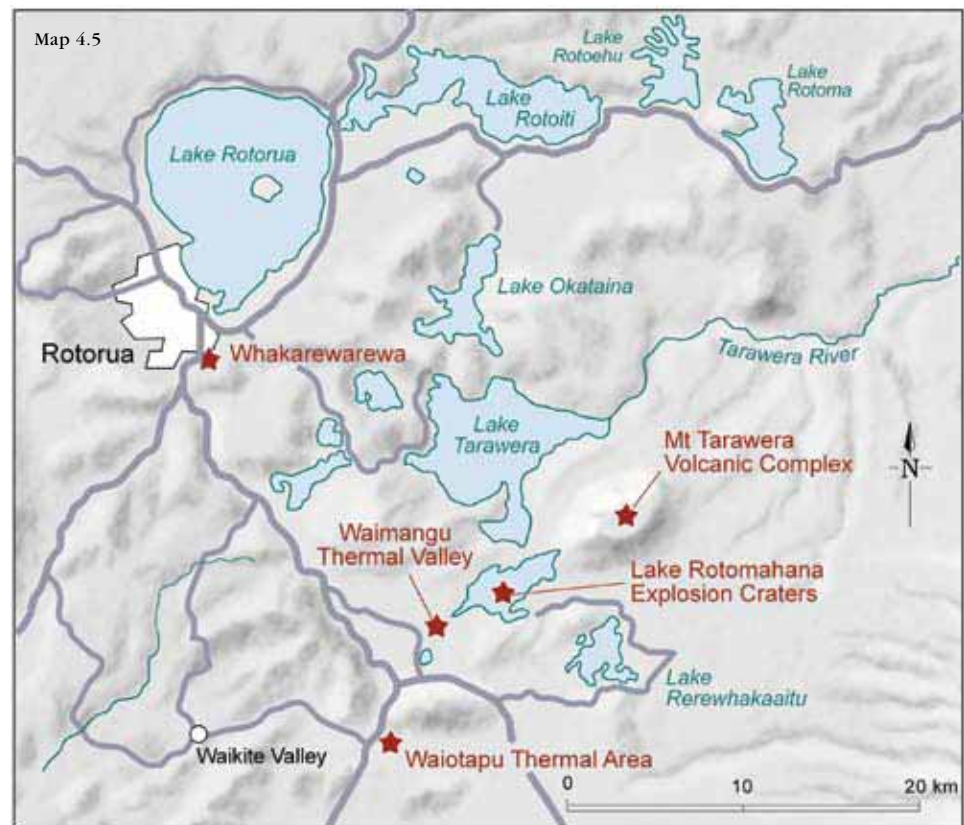
The site lies within the Rotorua and Okataina Volcanic Centres of Rotorua District in the Bay of Plenty region of the North Island. The localities making up the site lie within an arc extending 25 km to the east and south of Rotorua City, generally lying between Lat. 38° 05' and 38° 20' and Long. 176° 15' and 176° 33' E.

SITE DESCRIPTION

The site warranting immediate consideration is a serial site consisting of five localities (see Map 4.5) which contain the most outstanding geyser fields, geothermal phenomena, and associated volcanic landforms, namely:

- Whakarewarewa geyserfield;
- Waimungu thermal valley;
- Waiotapu thermal area;
- Mt Tarawera Volcanic Complex (including 1886 eruption fissure); and
- Lake Rotomahana explosion craters.

In the longer term, consideration should be given to extending the site to include two of the Rotorua Lakes, Okataina and Tarawera, and to smaller geothermal fields such as Maungaongaonga and Te Kopia, which are managed by the Department of Conservation without tourism facilities.



Pohutu Geyser, Whakarewarewa.
Destination Rotorua



VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The geysers, fumaroles, hot springs and boiling mud pools of Rotorua are some of the geothermal wonders of the world. The scale of these high temperature geothermal phenomena found in the Rotorua geyser fields and geothermal sites is rare internationally. The five localities that make up the proposed Rotorua site encompass the best of these phenomena that remain in a natural, unexploited state.

The Natural Heritage Advisory Group consider that the proposed site probably meets natural heritage criteria (vii) and (viii) and possibly criterion (x), because of the highly specialized biodiversity at some of the sites.

Criteria (vii) and (viii)

- The geothermal features within the site include geysers, fumaroles, sinter terraces, alkaline chloride springs, acid chloride mud pools, caldera lakes, mud volcanoes, and collapse pits. Many of these features are among the 19 Rotorua district geothermal and volcanic features of international significance listed within the NZ Geopreservation Inventory.
- Geysers are the most spectacular of geothermal phenomena and are certainly considered to be *superlative natural phenomena* (criterion vii). **Whakarewarewa geyserfield** has the greatest concentration of geysers in the world, with smaller geysers at **Waiotapu** and **Waimangu**. Together, they are the best examples of geothermal fields in the Southern Hemisphere and considered by many experts to

Nga Puia o te Papa hot spring,
Waimangu thermal valley.
Les Molloy



be one of the three best examples of geyser fields anywhere in the world (the other two are Yellowstone National Park in the USA and the 'Volcanoes of Kamchatka' in Far Eastern Russia - both natural World Heritage sites).

- **Waimangu thermal valley** has the distinction of being the only major geothermal field whose formation has been observed in historic times (a result of the 1886 Tarawera eruption). Among its many interesting features, the remarkable inverse relationship between the levels of Inferno Crater Lake and the rate of hot water discharge from Echo Crater (Frying Pan Lake) 500 metres away, is a unique geothermal phenomenon of international importance.

Tarawera eruption landscape
 - looking NE along along the
 1886 Tarawera Rift, from Frying
 Pan Lake and Waimangu thermal
 valley (bottom), across Lake
 Rotomahana to Mt Tarawera.
 Another volcano, Putauaki (Mt
 Edgcumbe), is in the distance.
Lloyd Homer, GNS

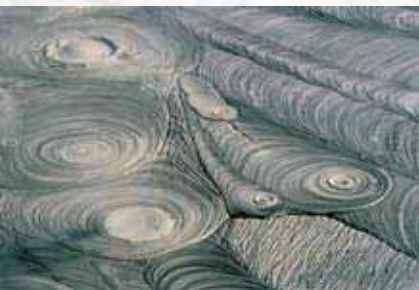


- **Waiotapu** contains the colourful metallic sulphide sinters of Champagne Pool, Artist's Palette and Primrose Terrace and the remarkable Mud Volcano on Loop Road.



Colourful metallic sulphide
 sinter around hot pool,
 Waiotapu.
Destination Rotorua

- **Mount Tarawera** is the outstanding example of the many rhyolitic lava domes which encircle Rotorua. Together with the many lake-filled calderas, the lava domes stand as evidence of the extremely destructive pyroclastic eruptions that have formed the Rotorua landscape over the past 250,000 years. Mt Tarawera is the youngest of these domes, the summits of its three large domes rent by the spectacular and colourful 7 km-long rift of the 1886 Tarawera eruption.
- **Lake Rotomahana** is the historic site of the internationally famous Pink and White Terraces, known to Maori as Otukapuarangi and Te Tarata respectively. These majestic siliceous sinter formations stepped down to the former lake level before they were destroyed in the 1886 Tarawera eruption. Today, the lake occupies the largest craters excavated along the Tarawera Rift during the eruption.
- **Lakes Okataina and Tarawera** have the most natural settings of the 11 major Rotorua Lakes, which occupy historic eruption craters and calderas in the site vicinity. Most of the catchment of Lake Okataina is protected in Lake Okataina Scenic Reserve, and most of the southern and eastern catchments of Lake Tarawera are within Lake Tarawera and Mangatiti Dome Scenic Reserves.



Top: Sphagnum moss, Emerald Pool, Waimangu thermal valley.
Rod Morris

Centre: Boiling mud, near Waiotapu.
Destination Rotorua

Lower: Pohutu Geyser at sunset, Whakarewarewa.
Destination Rotorua



Criterion (x)

The geothermal fields are habitats for a number of highly specialized shrubs, ferns and orchids capable of withstanding the steam, hot and acidic soils, and toxic minerals in the geothermal ground waters. Some of these plants are endemic to the area.

Cultural criteria

The Advisory Group is aware that the Rotorua geothermal features are taonga to tangata whenua Te Arawa, who desire the safeguarding of their interests in these taonga as guaranteed under the Treaty of Waitangi. The Advisory Group recommends that the proposed site also be assessed for its significance as a potential cultural World Heritage site, prior to it being advanced to nomination.

INTEGRITY, MANAGEMENT AND RISK ISSUES

The site has a number of significant integrity, management and risk issues which need to be addressed before it could be nominated for evaluation as natural World Heritage.

First, not all the site components have legal protection under the Reserves Act or Conservation Act. For instance, the summit of Mt Tarawera and the beds of the lakes are private land and they could obviously not be included in any nomination without the agreement of the owners.

Second, features within the site which are protected, do not have the highest level of legal protection (e.g. they are generally scenic reserves). None of the features have a 'nationally-important' legal status such as nature reserve, national reserve, or national park. In addition, some of the sites (e.g. Waimangu and Waiotapu), although protected as scenic reserves under the Reserves Act, are subject to leasehold agreements allowing them to be managed for tourism by private businesses. The leaseholders would need to agree to any World Heritage nomination.

Third, the site has no single, umbrella management authority, or an overall management plan. The Advisory Group consider that this is not a serious impediment if all stakeholders agree to develop a co-ordinated conservation management strategy as a pre-requisite for World Heritage listing. Indeed, the placement of the proposed site on the New Zealand tentative list could act as a spur to all parties to work co-operatively to achieve greater legal protection and integrated management for the Rotorua Geothermal Field.

Fourth, there is a risk associated with the threat of any further exploitation of geothermal energy within or adjacent to the site. The Whakarewarewa geysers were seriously affected by over-exploitation from steam bores in their vicinity until the government stepped in to regulate in order to restore the vitality of the field in the mid-1980s.

Fifth, all locations are subject to significant numbers of tourist visits and there is a need for on-going monitoring of these impacts on the fragile geothermal phenomena.

Overall, the Advisory Group consider that although there has been historic damage to parts of the site, its addition to the New Zealand tentative list would add a significant level of conservation awareness and international recognition of its outstanding universal values. World Heritage listing would certainly add value and engender much greater cohesion in the protection and management of the site.

4.6 Stewart Island / Rakiura Archipelago

SITE LOCATION

Stewart Island/Rakiura, New Zealand's third largest island, lies 30 km off the Southland coastline, from Lat. 46° 39' S to 47° 16' S and Long. 167° 20' E to 168° 14' E.

SITE DESCRIPTION

The total area of the island archipelago is 172,200 ha. The site excludes all private land, including the three groups of Titi (Muttonbird) Islands. Consequently, the site has a total land area of around 155,000 ha, made up of the following public land administered by the Department of Conservation (see Map 4.6):

- Rakiura National Park (140,000 ha);
- Codfish Island (Whenua Hou) and Bench Island Nature Reserves; and
- Pegasus Nature Reserve and other scenic reserves and conservation areas on Stewart Island/Rakiura.

It also includes the following marine component:

- Paterson Inlet/Whaka a Te Wera Mataitai Reserve (excluding Big Glory Bay) and Ulva Island/Te Wharawhara Marine Reserve.





Paterson Inlet/Whaka a Te Wera looking WSW towards Mt Rakeahua. Ulva Island lies in the middle distance.
DOC

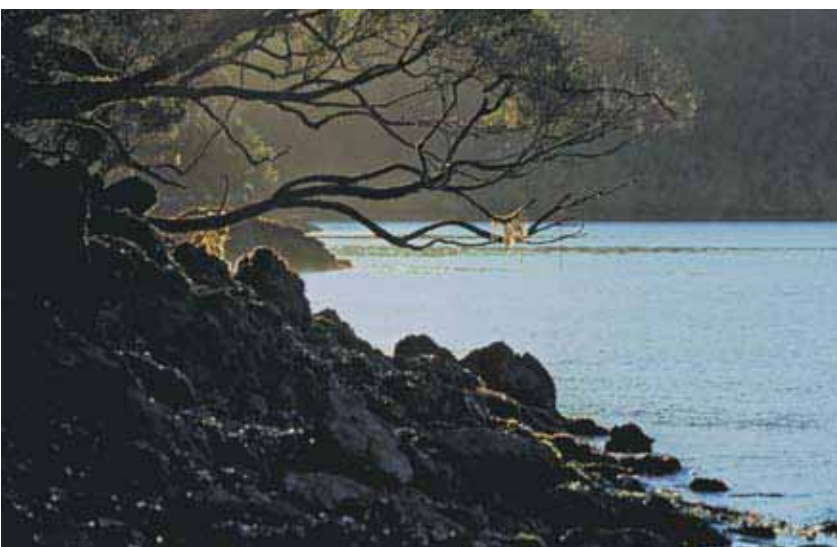
VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The Advisory Group considers that the site meets criteria *(vii)* and *(ix)*.

Stewart Island/Rakiura is the most accessible remnant of wild, pre-human New Zealand. It still retains a natural landscape, with many areas of exceptional natural beauty, including:

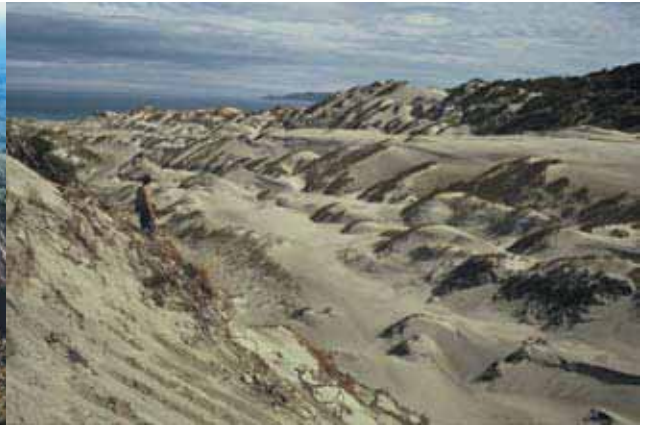
- Many deep, sheltered inlets along the eastern coastline; Paterson Inlet/Whaka a Te Wera, Port Adventure, Lords River, and Port Pegasus/Pikihatiti;
- A north-western coastline where the Ruggedy Mountains sweep up to jagged crests 500 metres high within only one kilometre of the sea; and
- Southern highlands with a spectacular landscape of bare rock cones and domes, the best known being Gog and Magog in the remote Fraser Peaks, and the granite knobs ranged along the south-eastern side of the Tin Range.

Port Adventure coastline, showing proximity of forest and sea.
Les Molloy



The intact sequence of the island's indigenous vegetation is the outstanding ecological feature on land, an unbroken green mantle from subalpine shrublands down to thick coastal forest. Rimu is the most common tree, along with plentiful miro and totara, in what are the southernmost podocarp forests in New Zealand. Kamahi and southern rata are also common. The Mason Bay duneland, 15 km long in one magnificent sweep, is of national conservation importance because of its range of threatened plants. These include the sand tussock *Austrofestuca littoralis*, a rare creeping herb *Gunnera hamiltonii*, and the shore spurge *Euphorbia glauca*. Many of the northern beaches (Smokey, Hellfire, and Ruggedy Beaches)

are outstanding examples of natural dune systems free of major weed species and human development.



Left: Granite knob landscape along south-eastern side of Tin Range.
Les Molloy

Right: Mason Bay duneland.
Greg Lind, DOC

The forests of Stewart Island/Rakiura are unusual in that a number of New Zealand's common tree species are absent. The most puzzling to ecologists is the lack of any species of beech (*Nothofagus*), even though the cool, moist conditions would seem to have favoured its survival during the last glaciation. Celery pines (*Phyllocladus*), members of the podocarp family, could also be expected to thrive in the island's humid climate and peaty soils, but they too are absent. The absence of beech accounts for the lack of a sharp bushline, a common feature in most of the mountains of New Zealand. Instead, topography and exposure to wind seem to be more important factors than altitude, allowing taller forest to survive in the sheltered gullies.

Above: Kakapo 'Alice' with chick 'Manu', Codfish Island (Whenua Hou), May 1997.
Don Merton, DOC

Below: Southern tokoeka, Stewart Island/Rakiura.
Brent Beaven, DOC

Stewart Island/Rakiura's significance as a habitat for terrestrial endangered species was dramatically confirmed in 1977 with the 'rediscovery' of the country's only remaining viable population of the nocturnal ground parrot, kakapo. All of the kakapo remaining in the low forest/shrublands around the head of the Robertson River, Deceit Peaks and Mt Rakeahua localities were relocated to Codfish Island (Whenua Hou) and other



predator-free islands over the following 15 years. The conservation importance of Codfish Island was enhanced in 1998 by the eradication of kiore, contributing to the outstanding success of 24 kakapo chicks hatching in the 2002 breeding season.

Stewart Island/Rakiura is also notable for the southern tokoeka, a distinct variety of the Fiordland brown kiwi. The island is fortunately still free of many introduced animal pests (stoats, ferrets, weasels, mice, goats, pigs and rabbits) which have caused so much ecological damage elsewhere in the country.



The freshwater ecosystems of Stewart Island/Rakiura are significant habitats for indigenous freshwater communities because of the absence of human-induced modifications and introduced species. Indeed, of all the groups of indigenous species on Stewart Island/Rakiura, the freshwater communities are arguably the most intact. The Freshwater and Rakeahua Rivers, the main rivers feeding into Paterson Inlet/ Whaka a Te Wera, are of outstanding scientific value as two of the last remaining large, floodplain river systems in New Zealand that have remained essentially free of human-induced impacts throughout their catchments. They also contain abundant populations of giant kokopu, a nationally threatened fish species. In their entirety, the island's freshwater communities are of great importance as the largest, most diverse examples of intact freshwater ecosystems that are probably representative of those which occurred in mainland New Zealand prior to the impact of European settlement.

The coastal waters around Stewart Island/Rakiura have a remarkable density and diversity of seaweeds and some interesting species of shellfish. Paterson Inlet/Whaka a Te Wera is the largest and most pristine sheltered, shallow-water harbour in New Zealand. Intact catchment vegetation has resulted in extremely low rates of sediment input to the inlet, enabling a wide variety of seafloor life to flourish. Thus the inlet is renowned for the diversity of its echinoderms (sea cucumbers, sea urchins (kina), and starfish), seaweeds and brachiopods. Many of these occur at shallow, diveable depths of only 15–20 metres. Paterson Inlet/Whaka a Te Wera's rich seaweed communities contain around 270 species (or 70% of all the seaweeds around the entire coastline of the island), which provide habitats for some of the 56 different species of fish recorded there. The inlet is also notable as one of the richest and most accessible brachiopod habitats in the world. Brachiopods, or lamp shells, are a very ancient type of filter-feeding shellfish, 'living fossils' long extinct in most of the world's seas, supplanted in evolution by more modern bivalve molluscs such as oysters and mussels.

INTEGRITY, MANAGEMENT AND RISK ISSUES

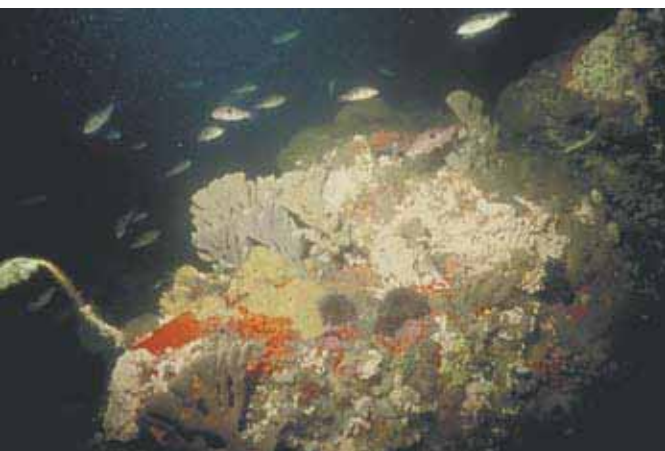
The site has a very high degree of physical and biological integrity. Most of the site has a high level of legal protection as national park, nature reserve or marine reserve. The new Paterson Inlet/Whaka a Te Wera Mataitai Reserve, where sustainable levels of fish, seaweed or other marine life can be harvested, is being managed under by-laws by a caretaker group from the tangata whenua and the Stewart Island community.

Because Rakiura National Park was only designated in 2002, a park management plan is still in preparation but is expected to be in place in the next couple of years. The small

size and fragmentation of the Ulva Island/Te Wharawhara Marine Reserve has been widely criticised in marine conservation circles and the ability of the present mix of marine reserve and mataitai over most of the inlet to conserve this unique marine environment will need to be monitored very closely.

Some of the privately-owned Titi Islands, such as Big South Cape Island (Taukihepa) have high conservation values, and at some time in the future consideration could be given to approaching the owners to see if they wish to add them to the proposed site. These sites are the last remaining sites where titi (shearwater) are still annually harvested by iwi Maori in New Zealand, and hence have cultural significance.

Marine habitat, Te Wharawhara/
Ulva Island Marine Reserve.
DOC



Wetlands and heath-like
shrublands around the lower
Freshwater River; Paterson
Inlet/Whaka a Te Wera in the
distance.
Sean Cooper, DOC



4.7 Waters and Seabed of Fiords of Fiordland (Te Moana o Atawhenua) - An addition to

Te Wahipounamu (South-West New Zealand) World Heritage Area

SITE LOCATION

The site includes the area of seabed and waters within the fiords on the western margin of Fiordland National Park, from Yates Point north of Milford Sound to Puysegur Point south of Preservation Inlet (see Map 4.7).

SITE DESCRIPTION



Most of the 15 fiords of Fiordland are 200-300 m deep, usually with a pronounced shallower 'lip' near the mouth of the fiord, indicating 'over-deepening' by the glacial ice. The longer fiords reach back into the heart of the mountains of Fiordland National Park; the head of Hall Arm, for instance, is 40 km from the mouth of Doubtful Sound.

The marine environment of Fiordland is quite different from the rest of New Zealand. The deeply indented coastline has given rise to two contrasting marine environments:

- (a) the wild, exposed **outer coastline**, with typical west coast New Zealand marine community and zonation patterns, and the preferred breeding habitat for fur seals and a wide range of ocean birds such as petrels, prions, shearwaters and penguins; and
- (b) the sheltered, steep-walled **fiords**, which have a total shoreline length of nearly 1000 km, depths up to 420 m, and a unique inversion of usual patterns of coastal marine life.

Because of the large discharge of fresh water into a relatively calm fiord, the fresh water tends to float on the surface. This results in a distinct lack of shoreline inter-tidal seaweeds

and shellfish; on the other hand, there is a profusion of marine life below five metres depth. The low-salinity water (and the shadows cast by the steep walls of the fiords) stops light penetrating far into the water. As a consequence, unique assemblages of sea animals and plants (many usually associated with darker water below 30 m depth) thrive at relatively shallow depths.



Halls Arm, Doubtful Sound -
a typical fiord landscape.
Les Molloy

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The fiords are an integral part of the Fiordland landscape and ecosystems, which were included until the early 1960s within Fiordland National Park. However they were not included in the site when Fiordland National Park was listed as natural World Heritage in 1986. When the World Heritage Committee listed the park as World Heritage, one of its recommendations to the New Zealand government was “...to note the importance of the waters of the fiords as an integral part of the area and welcome any initiatives to bring them under the control of the park authorities”.

In 1990, when Fiordland National Park was incorporated into the much larger (2.6 million ha) **Te Wahipounamu (South-West New Zealand)** World Heritage Area, the issue of listing the seabed and waters of the fiords was again raised by the IUCN (The World Conservation Union) to enhance the integrity of this outstanding World Heritage site.

In April 2005, after the passing of the Fiordland Marine Management Act, the Fiordland (Te Moana o Atawhenua) Marine Area and management regime was enacted:

- recognizing the importance of the Fiordland marine environment,
- establishing a Fiordland Marine Guardians Advisory Committee, and
- creating eight new marine reserves in addition to the existing ones of Milford Sound/Piopiotahi and Te Awaatu Channel (The Gut). These are, from north to south: Te Hapua (Sutherland Sound); Hawea (Clio Rocks) in Bligh Sound; Kahukura (Gold Arm) of Charles Sound; Kutu Parera (Gear Arm) of Bradshaw Sound; Taipari Roa (Elizabeth Island) in Malaspina Reach of Doubtful Sound; Moana Uta of Wet Jacket Arm; Taumoana in Dusky Sound (between Five Fingers Peninsula and Resolution Island); and Te Tapuwai o Hua in Long Sound of Preservation Inlet.



Black coral with different coloured snakestars and butterfly perch in the foreground. Fiordland Marine Area. Steve Wing

With these legal protection measures now adopted, the Advisory Group consider this to be an appropriate time to place the seabed and waters of the fiords on the New Zealand tentative World Heritage list, as an addition to Te Wahipounamu (South-West New Zealand) World Heritage Area.

The Advisory Group considers that the seabed and waters of the fiords and their flora and fauna, have features of outstanding universal value with respect to all four criteria and especially (ix) and (x). These can be summarized as follows:

- The fiords of Fiordland are a globally unique marine environment containing exceptional marine biodiversity.
- Many marine species in the fiords are found in unique associations; these include colourful sponges, 'black corals', tubeworms, sea pens, and sea stars which line the walls of the fiords.
- The fiords are now known to support the world's largest population of 'black coral' trees (about seven million colonies), some over five metres tall and up to 300 years old.
- The diversity of marine species and habitats of the rock walls of Fiordland are considered to rival those of the most species-rich regions of the globe.

Left: Red Coral, Fiordland Marine Area. Steve Wing
Right: Scarlett wrasse, Fiordland Marine Area. Steve Wing





Sea pen, Fiordland Marine Area.
Steve Wing

INTEGRITY, MANAGEMENT, AND RISK ISSUES



Feather star,
Fiordland Marine Area.
Steve Wing

The Advisory Group has no doubts that the addition would increase the physical and biological integrity of Te Wahipounamu (South-West New Zealand) World Heritage Area.

The proposed addition is now under legal protection and a comprehensive management regime, reinforcing its potential value as natural World Heritage. There appears to be no legal or management impediments to listing. Indeed, making this addition to the existing World Heritage site would seem to be in keeping with the conservation vision of the Fiordland Marine Guardians Advisory Committee, even though the fiord waters are not formally part of Fiordland National Park.

A commitment was made to the above Guardians that no changes in legal status or management objectives would be implemented during the first five years of the new regime's operation. The Advisory Group considers, therefore, that any nomination of this site addition should be delayed until the five year period has passed. This would allow time for all parties to be consulted and for higher priority listings to be advanced to nomination in the meantime.

5.0 Natural sites recommended for consideration as future additions

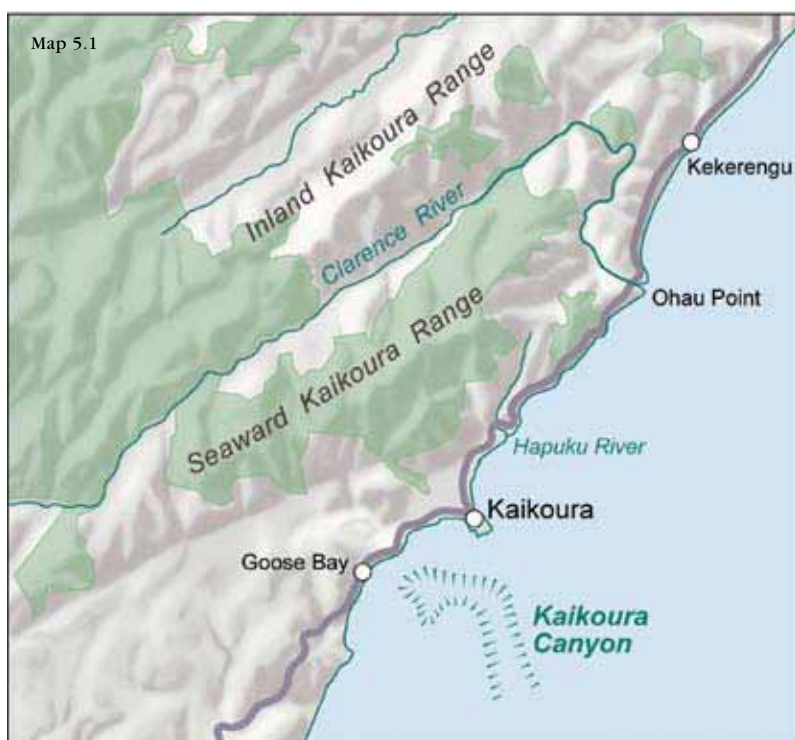
5.1 Kaikoura Canyon and Mountains

SITE LOCATION

The exact site is not rigorously defined. As a broad concept it traverses an 'underwater canyon to mountain summits' range of topographies in the Kaikoura locality (see Map 5.1). In particular, it would ideally include:

- The Kaikoura underwater canyon;
- Representative sections of Kaikoura coastline; and
- Representative transects of the Seaward and Inland Kaikoura Mountains.

SITE DESCRIPTION



The Kaikoura Canyon is 60 km long and up to 1200 m deep. It extends from just 500 m off the Kaikoura coastline to the south of Kaikoura Peninsula, reaching 1000 m depth just three kilometres offshore. The canyon extends out to the south-east of Cook Strait, linking the waters off Kaikoura with the depths of the Hikurangi Trough and the Kermadec Trench.

The highly scenic Kaikoura coastline, from the mouth of the Clarence River to Goose Bay, is a mixture of rocky outcrops and reefs interspersed with gravel beaches. Kaikoura Peninsula is the dominant coastal landform, with its raised beaches (up to 100 m above present-day sea level), impressive cliffs, and outcrops of limestone and other marine sedimentary rocks. The Seaward Kaikoura Mountains

form an impressive backdrop to Kaikoura. They lie only 15 km inland, with over 10 summits above 2000 m; Mt Fyffe (1602 m), a prominent landmark, is only 8 km from the coastline.



Kaikoura Peninsula, looking
NW towards southern end of
Seaward Kaikoura Range.
Lloyd Homer, GNS

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The Advisory Group consider that in the long term, a suitable site could be delineated and placed on the tentative list because of its outstanding universal values with respect to underwater landforms, tectonic uplift, and marine life.

The following outstanding features are listed without reference to specific criteria:

- The aesthetic qualities of the Kaikoura seascape are very high, and the juxtaposition of a deep sea canyon with high mountains is an unusual natural phenomenon, not usually found in the world's continental landmasses.
- The Kaikoura Canyon is a very impressive geomorphic feature. There are other underwater canyons around the New Zealand coastline (e.g. Hokitika, Haast and many others off the mouths of major South Westland rivers) but none can match the Kaikoura Canyon for proximity to the coastline, or diversity and abundance of marine life.

NZ fur seal, Kaikoura coast.
DOC



- Kaikoura is one of four coastal sites in New Zealand where the upwelling of ocean currents are important for marine biodiversity. The rising nutrient-rich waters from the Southern Ocean support dense populations of plankton and marine algae, leading to abundant krill, squid and fish. These in turn attract marine mammals (seals, dolphins, and whales) and prolific seabird life.
- The Kaikoura coastline has outstanding marine habitat values, especially the diverse reef habitats with extensive areas of sea grasses and kelp beds. The NZ fur seal breeding colony at Ohau Point has increased in numbers to the point where it is now one of the largest on the New Zealand coastline. There are also small breeding colonies and haulout sites around and south of the Kaikoura Peninsula.
- Tectonic uplift continues at the high rate of about 10mm/yr in the Kaikoura Mountains and 3mm/yr on the Kaikoura Peninsula. The evidence of this uplift can be seen in the series of raised shore platforms on the peninsula, each terrace marking a major earthquake over the past 125,000 years.
- The mountain-building at Kaikoura is particularly intense because of the local crustal compression along the Pacific and Indo-Australian Plate boundaries, causing the mountains to rise up steeply from the sea. Indeed, the current New Zealand-wide mountain-building phase, called the Kaikoura Orogeny, is so-named because these processes are so well expressed in the juxtaposition of the underwater canyon and the mountains.
- Kaikoura is notable for having the second highest number of different pelagic seabirds (41) counted at points around the New Zealand mainland coastline. They include a wide range of shearwaters, prions, Antarctic fulmar, Cape pigeon, petrels, mollymawks and albatross and high numbers of shorebirds such as gulls, shags, terns and oystercatchers.
- Kaikoura is an outstanding site for its diversity and numbers of cetaceans. It is internationally renowned for sperm whales, mainly males which are attracted by the plentiful squid and groper which thrive in the mixing of ocean currents and the upwelling of waters through the Kaikoura Canyon. Humpback, southern right, minke, sei and fin whales are all seen occasionally off Kaikoura. The smaller cetaceans there include dusky, common, Hector's, and bottlenose dolphins, orca and longfin pilot whales.

Sperm whale diving, Kaikoura.
Kim Westerskov



INTEGRITY, MANAGEMENT, AND RISK ISSUES

The Advisory Group consider that there are major integrity and management issues which would need to be addressed before a potential World Heritage site could be defined and added to New Zealand's tentative list.

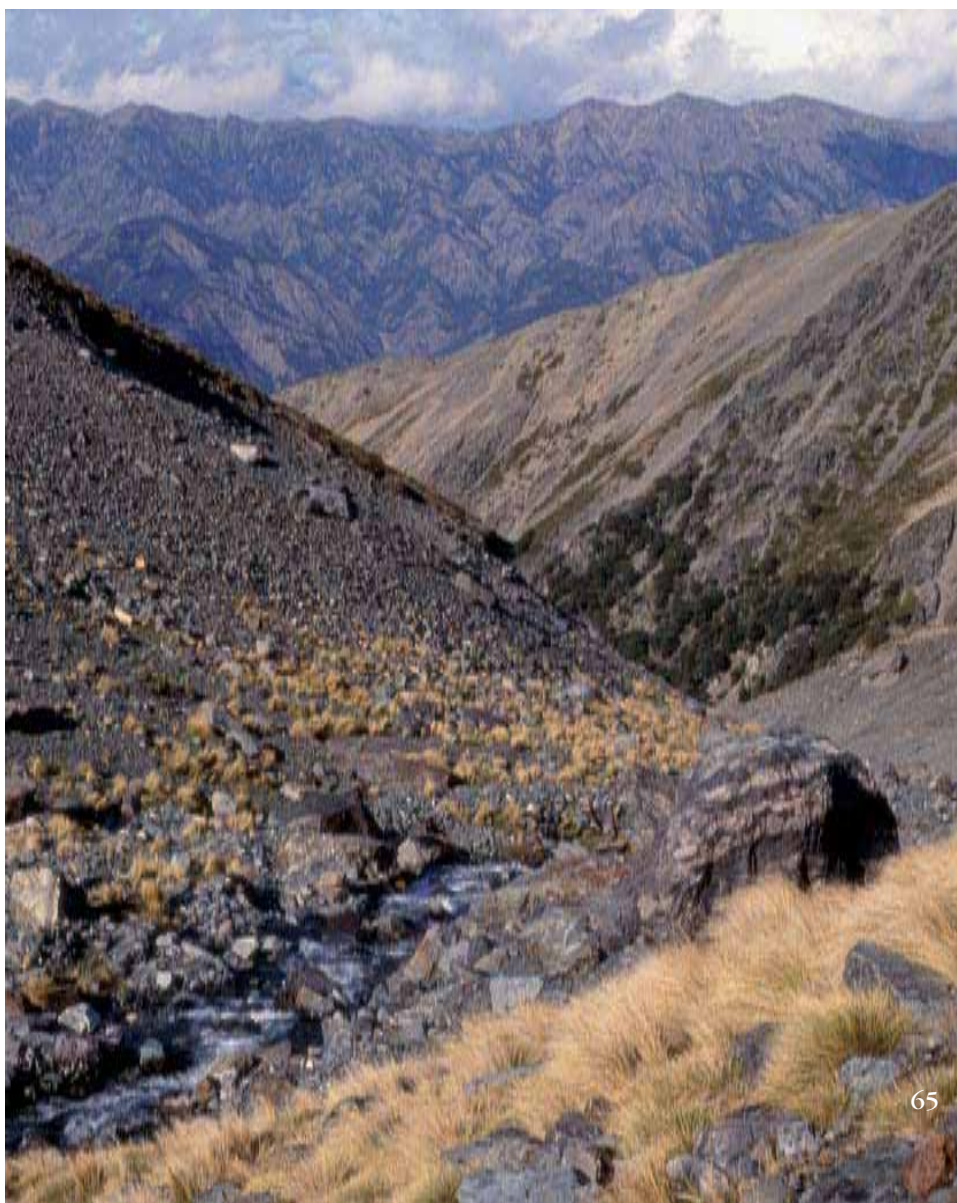
First is the lack of any marine and coastal protected areas. The Kaikoura Canyon has no protected status and there are only a few small coastal reserves managed by the Department of Conservation (mainly south of the mouth of the Clarence River from Okiwi Bay to Half Moon Bay). The need for a marine reserve, mataitai, taiapure or other effective form of marine protected area at Kaikoura has been recognized for more than a decade. Tangata whenua have to date opposed any marine reserve.

Second is the lack of enough protected lowland of high natural character, linking any eventual marine/coastal protected areas with the extensive conservation lands on the Seaward Kaikoura Range (the outcome of recent pastoral lease tenure reviews).

Third is the fragmented nature of marine planning and management, making it more difficult to ensure the sustainable management of Kaikoura's fisheries and marine mammals.

A potential World Heritage site at Kaikoura would need to have a co-ordinated marine/coastal conservation plan in place before a listing could be contemplated. However, the Advisory Group consider that the outstanding universal values of the site are such that government could take a long view and set a goal of bringing about the protection and integrated management of an 'undersea-to-mountains' natural site.

Looking SE towards the Seaward Kaikoura Range from the head of Branches Stream on the slopes of Mt Tapuae o Uenuku, Inland Kaikoura Range.
Les Molloy

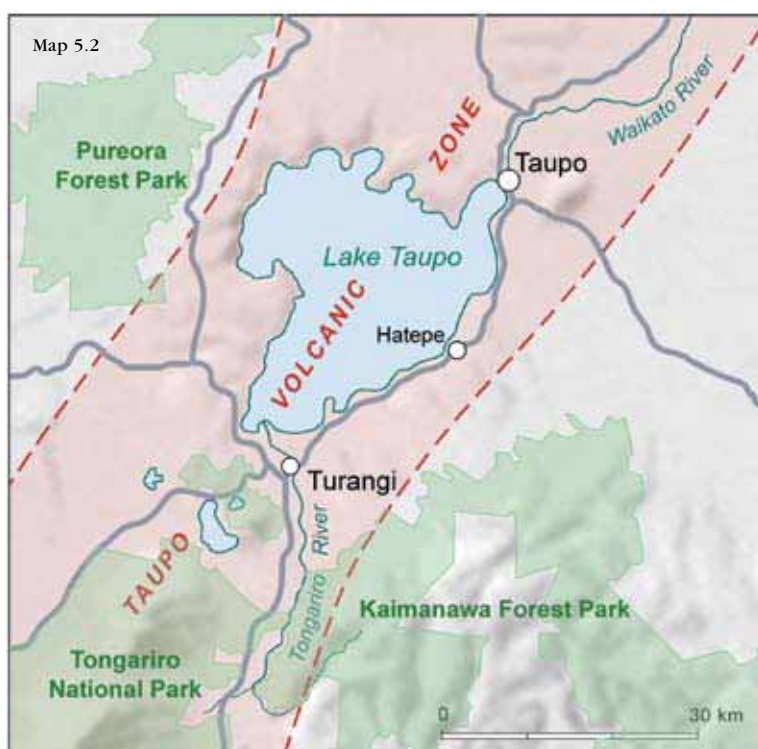


5.2 Lake Taupo

SITE LOCATION

Lake Taupo lies in the upper reaches of the Waikato River catchment in the central North Island. It is a high and deep caldera lake, 622 sq. km in area, 359 m above sea level, and with a catchment area of 3487 sq. km. The lake is 40 km in length from north to south, and 30 km from west to east (see Map 5.2). Geographic co-ordinates are approximately: Lat. 38° 40' to 38° 56' S. Long. 175° 45' to 176° 06' E.

SITE DESCRIPTION



Lake Taupo occupies the caldera of the huge 'Taupo Volcano' which has erupted intermittently for the past 330,000 years. It lies near the centre of the Taupo Volcanic Zone, a rift valley full of volcanic cones and domes, lake-filled calderas and high lava plateaux, extending north-east from the southern slopes of Mt Ruapehu. The deepest point known in the lake is 158 m and the total volume of water is almost 60 cubic km.

The margins of the lake contain many special plant communities, including cliff vegetation and lakeshore herbfields. The South Taupo Wetland extends from the lower Waimarino River to the delta of the Tongariro River, a classic 'bird's foot' delta and possibly the best example of this type of landform in the country. This wetland is a mosaic of vulnerable swamp and bog vegetation, the habitat of a number of threatened plants

and birds. The main river feeding into the lake is the Tongariro, which rises in the Kaimanawa Mountains as the Waipakahi River before it is joined by a succession of streams draining the eastern slopes of Tongariro National Park. The Tongariro is a large, wild, mountain river, internationally celebrated for the quality of its trout, its dramatic scenery, and for white water rafting and kayaking.

VALUES THAT MAY JUSTIFY WORLD HERITAGE LISTING

The Advisory Group considers that in terms of its natural properties, the site should easily fulfill criterion (viii) as an *outstanding example representing major stages of the earth's (volcanic) history* as evidenced by the following:

- Taupo Volcano is considered to have produced the largest volcanic eruption on Earth during the last 7,000 years.
- Taupo Volcano is considered by many volcanologists to be the most frequently active and 'productive' rhyolitic volcano in the world in terms of the volume of material ejected. It has spread ignimbrite and tephra over much of the central and eastern North Island. It can be considered one of the world's limited number of 'super-volcanoes', capable of destructive eruptions of such magnitude that they have the capacity to significantly alter the world's climate.



Lake Taupo, looking south
across Taupo township.
Lloyd Homer, GNS

- The present shape of the Taupo caldera was determined largely by one of the largest eruptions in New Zealand's (and the world's) volcanic history – the great Oruanui Eruption of around 26,500 years ago. This eruption was so large and violent that if it happened today it would devastate most of the North Island and the northern part of the South Island. Close to the Oruanui eruption vent, the thickness of ignimbrite and tephra was 200 m deep; tephra was deposited one metre deep in coastal Hawkes Bay; and 10 cm depth of ash reached even the Chatham Islands.
- The Taupo Eruption of AD 186 has left an overwhelming imprint on the landforms, soils, vegetation and waters of the natural landscape of the central North Island, as well as determining the modern shape of the lake. Although there were no humans present to witness the awesome power of that most recent eruption, scientists consider that it probably produced eruption columns reaching 50 km in height that deposited enormous quantities of pumice and ash up to 50 m in depth on the eastern margin of the lake. These are best seen in the white cliffs exposed just north of Hatepe, close to the main eruption vent at the present-day Horomatangi Reef.

Lake Taupo, looking south
towards Hatepe, with rilled
pumice landscape around
Ouaha in left foreground.
Les Molloy



The volcanic peaks of Tongariro National Park (Mt Ruapehu left; Mt Ngauruhoe right) reflected in the waters of Lake Taupo.

Les Molloy



INTEGRITY, MANAGEMENT AND RISK ISSUES

The site has a high level of geophysical integrity. A large section of the lake's mountainous catchment is protected land, especially Tongariro National Park and Kaimanawa Forest Park which are managed by the Department of Conservation. In addition, networks of shoreline and riparian reserves around the lake have a beneficial effect in maintaining its ecological integrity. The world class Taupo trout fishery is managed by the Department of Conservation.

The entire bed of the lake is owned by Ngati Tuwharetoa and under the Treaty of Waitangi they are guaranteed their right to exercise tino rangatiratanga (self-determination) over the lake.



Looking across the south Taupo wetlands behind Stump Bay, towards Turangi and the peaks of Tongariro National Park.

Robert Hood

The most significant risk to the site is the slowly declining health of the waters of Lake Taupo, which were previously of very high quality. The cause of the decline is the increasing nitrogen content of the inflowing groundwaters and rivers, feeding the growth of algae and thereby decreasing the water clarity in the lake. Potentially toxic algae bloomed in the lake for the first time in 2001 and again in 2003. Fortunately, Environment Waikato, Taupo District Council, Tuwharetoa, and Central Government agencies are taking action and in late 2003 launched the 'Protecting Lake Taupo Strategy', an \$83.5 million package of incentives to try and slow deterioration through land use changes.

It is not possible to add Lake Taupo to the New Zealand tentative list without the full agreement of Ngati Tuwharetoa iwi. However, as kaitiaki (guardians) of the lake, Ngati

Tuwharetoa may be interested in the listing of the lake as a cultural site (as is already the case for nearby Tongariro National Park), to protect the mauri of the waters and fulfill their desire for sustainable management (kaitiakitanga) of the lake. If this agreement could be reached, the Advisory Group is in no doubt that listing as a potential World Heritage site would add value to the site, increase its international standing, and add weight to the comprehensive measures being implemented to restore the quality of its waters.

6.0 Mixed Cultural/Natural site of high priority for immediate World Heritage listing

6.1 Auckland Volcanic Field

SITE LOCATION

The proposed site consists of cones and other geological features of volcanic origin in urban Auckland and rural south Auckland.



SITE DESCRIPTION

This serial site is proposed as a Mixed Cultural and Natural Heritage Site.

The Operational Guidelines for the Implementation of the World Heritage Convention state that ‘Serial properties will include component parts related because they belong to:

- a) the same historico-cultural group;
- b) the same type of property which is characteristic of the geographical zone;
- c) the same geographical, geomorphological formation, the same biogeographical province, or the same ecosystem type;

and provided it is the series **as a whole** - and not necessarily the individual parts of it - which are of outstanding universal value.

The sites proposed for nomination are shown in Tables 1 and 2 and Map 6.1.

Table 1: Sites of cultural value.

Site	Location	Administrative status
Maungauika/ North Head	North Shore City	Historic Reserve
Takarunga/ Mount Victoria	North Shore City	Recreation Reserve
Remuwera/ Mount Hobson	Auckland City	Recreation Reserve
Maungawhau/ Mount Eden	Auckland City	Historic/ Recreation Reserve
Maungakiekie/ One Tree Hill	Auckland City	Recreation Reserve Co-administered by Auckland City Council and Cornwall Park Trust
Owairaka/ Mount Albert	Auckland City	Recreation Reserve
Puketapapa/ Mount Roskill	Auckland City	Recreation Reserve
Te Tatua a Riukiuta/ Big King	Auckland City	Recreation Reserve
Te Kopuke/ Mount St John	Auckland City	Recreation Reserve
Taurere/ Taylor's Hill	Auckland City	Recreation Reserve
Maungarei/ Mount Wellington	Auckland City	Recreation Reserve
Otahuhu/ Mount Richmond	Auckland City	Recreation Reserve
Motukorea/ Brown's Island	Auckland City	Recreation Reserve
Te Pane o Mataaho/ Mangere Mountain	Manukau City	Historic Reserve
Otuataua stonefield	Manukau City	Historic Reserve
Matukutureia stonefield	Manukau City	Proposed reserve (LINZ control)

Table 2: Sites of natural value.

Site	Location	Administrative status
Rangitoto shield and scoria caves	Auckland City	Scenic Reserve
Orakei Basin maar	Auckland City	Crown Foreshore
Tuff Crater (Tank Farm) maar	North Shore City	Recreation Reserve, Crown Foreshore
Panmure Basin maar	Auckland City	Recreation Reserve, Crown Foreshore
Mangere Lagoon maar	Manukau City	Regional Park, Crown Foreshore
Lake Pupuke maar	North Shore City	Crown, Recreation Reserve
Takapuna Reef fossil forest	North Shore City	Crown Foreshore
Ihumatao fossil forest	Manukau City	Crown Foreshore
Meola Reef lava flow	Auckland City	Crown Foreshore
Wiri lava cave	Manukau City	Scientific Reserve
Mangere lava flow field	Manukau City	Regional Park, Crown Foreshore
Auckland Domain maar	Auckland City	Recreation Reserve



Maungawhau/
Mount Eden

*Alastair Jamieson, Auckland
Regional Council*

The Auckland Isthmus and region have been the scene of a series of basaltic volcanic eruptions over the past 250 000 years resulting in a field covering approximately 100 km², including approximately 50 eruption centres with scoria cones and maar craters and 8000 ha of lava flow fields. The wider Auckland landscape is dominated by the volcanic cones.

All of the eruptions were short-lived, and each volcano, or cluster of vents, was the product of a single eruptive episode. The last eruption, of Rangitoto, occurred about 600 years ago. Over time the Auckland volcanic field has produced a total volume of about 3 km³ of lava, scoria, ash, and tuff covering the rolling pre-volcanic landscape.

The resources afforded by the cones supported a long period of Maori settlement, use and occupation. Each cone was surrounded by large areas of rich volcanic soils providing extensive gardens. Most were modified by Maori and have had their slopes and summits modified by digging, to form terraces, ditches, banks, and pits, for living, gardening and defence, forming a significant cultural landscape.

Some cones in the Auckland region have been modified in recent times or destroyed for extraction of scoria for construction. The cones included in this nomination are relatively intact, and have survived due to their iconic status and their protection as public reserves.

The two stonefield sites, Otuaataua and Matukutureia, are both remnants of the former extensive stone-walled garden and settlement sites located within the volcanic landscape.

Although not unique as a collection of small basaltic scoria cones and maar craters, the Auckland field has an unusual diversity of features. Represented are a full range of vents and explosion craters, right up to evolved cones and lava shields.

Background: Mount Eden.
Kevin Jones, DOC

VALUES THAT MAY JUSTIFY CULTURAL WORLD HERITAGE LISTING

Criteria (ii), (iii), (iv) and (v)

The outstanding universal value of this serial site rests in part on its geology and natural landforms, but principally on the physical evidence of a succession of Maori tribal occupations surviving in the modern city which has been built on this young and periodically active volcanic field. There has been a continuity of large-scale settlement across both cultures, which has resulted in human modification of the natural heritage. However, it is the outstanding formations of the Maori occupation-in particular the fortified cones-that confer such unique value on the serial site.

Motukorea/
Brown's Island.
Alastair Jamieson, Auckland
Regional Council



The serial site is considered to meet cultural criteria (ii), (iii), (iv) and (v), and to be particularly strong for criterion (v). The geological features of the site would also meet criterion viii because of their outstanding universal value as diverse volcanic landforms representing a wide range of eruptive processes throughout the Auckland Volcanic Field.

Auckland's volcanic field contains many cones which still hold commanding positions across Auckland's contemporary urban landscape. Collectively they are a defining feature of the modern city, giving them iconic status. The recent origins of the field, the last eruption being only 600 years ago, reinforces its outstanding natural value. The fact that many cones were highly modified by Maori with terraces, pits, defences and other structures, also gives them high archaeological and landscape values. The association between sites in the field and Maori are ongoing and cultural practices continue today.



Maungakiekie/ One Tree Hill
Alastair Jamieson, Auckland
Regional Council

In terms of the criteria, the building of large pa on the cones shows a response to growing population and the wealth of the Tamaki area. These large earthworks also demonstrate the evolution of the internal planning of these defended settlements and the relationship of the pa to each other over time. The cones and fields bear exceptional testimony to the past cultural traditions of a people who still live in the region today. There is cultural continuity in the spiritual and physical relationships to the sites. The field includes several large complex defended sites with a high degree of physical integrity. The full range of Maori cultural heritage sites is represented within the field, including defended and undefended settlements, garden areas, the independent Maori invention of storage pits, and burial sites (criteria (ii) and (iii)).

Many of the cones in the field have large, highly developed, and well preserved archaeological sites relating to pre-European Maori occupation. Maori developed pa, or fortified settlements, unique to New Zealand and the world. These pa demonstrate a range of adaptations of defensive styles to individual landforms and landscape features. Around these pa, spread over the lava flow fields were extensive gardens where Maori adapted and used volcanic features to create intensified horticulture. The Otuatua stonefields are a surviving example of this kind of landscape. The pa on the cones and the gardens are an outstanding example of a traditional human settlement or land-use which are representative of the Maori culture, and are superb examples of the culmination of the development of Maori culture prior to European occupation of New Zealand. The Maori culture and the landscape expression of it have become vulnerable



Mangere Lagoon maar.
Bruce Hayward

under the impact of irreversible change, due to development and modification of the land for commercial and industrial use. (criteria *(iv)* and *(v)*).

Sites within the field continue to be of great significance to Maori. This is illustrated by the role of Maungakiekie / One Tree Hill in the recently announced Treaty of Waitangi settlement with the Ngati Whatua iwi (tribe). Almost all features of the field have associations with deities, or named ancestors and historical events. These traditions have been passed down orally and many were recorded in writing during and since the 19th century.

There is no other complex of volcanic cones in New Zealand with a similar range of site types, span of ages, and such a wide-ranging set of multiple iwi and community associations. Particularly notable for its cultural values is Maungakiekie / One Tree Hill. It is one of the most extensively terraced and heavily fortified of Auckland's cones and one of the most extensive pre-European archaeological site complexes in New Zealand.

The only other comparable New Zealand archaeological volcanic field site, in the inland Bay of Islands, has impressive cone pa, but lacks the range of features of the Auckland field. It is on privately owned land so lacks the protected status of the Auckland cones. There are other sites on volcanic cones in the Bay of Plenty and south Waikato, and stonefield gardens on volcanic landforms in the eastern Bay of Plenty, but they are not as extensive and do not constitute such impressive field monuments as the overall Auckland complex.

VALUES THAT MAY JUSTIFY NATURAL WORLD HERITAGE LISTING

Criterion (viii)

The natural properties exhibited by this site are such that it should fulfil criterion *(viii)*.

Around the world there are a dozen or so relatively young basalt volcanic fields similar to the Auckland one. Some in Europe are modified and built over like the Auckland field. Others have been less modified by humans and have a different combination of features. Some are in more arid areas and are less weathered, and also less visited than the Auckland field (e.g. Harrat Shaam Field in Jordan and Saudi Arabia; Zuni and Craters of the Moon Fields in the western USA). None has the combination of young volcanic landforms and extensive archaeological remains of a civilisation that depended on the rich volcanic soils and scoria cones for defence. It is this integrated combination of pre-European Maori occupation relying on the natural resources of a young and still active volcanic field that is outstanding on the world stage.

The Auckland Volcanic Field is an outstanding example of a young (still periodically active) and well-preserved group of small basalt volcanoes displaying a wide diversity of landforms and other features that clearly document the various processes that formed them.

The geological jewel in the crown of the Auckland Volcanic Field is the internationally-acclaimed and largely unmodified Rangitoto Island volcano, which sits in the entrance to Auckland city's Waitemata Harbour and is often used as the symbol of the city. It is uninhabited and a major tourist attraction for visitors. Rangitoto is the youngest (600 yrs old) and largest volcano in the field, and its still-fresh lava flow fields provide a classic example of forest succession on sites lacking true soil. Ground conditions at the site are unusual in supporting many species of plants (predominantly epiphytic).

Auckland's volcanoes were produced by varying combinations of three eruptive processes: explosive (phreatic, phreatomagmatic), lava-fountaining, and quiet effusion of lava flows. These built volcanic landforms over a pre-existing forested landscape of gentle hills, small valleys and flatlands. Most volcanic centres began activity with explosive eruptions resulting in the construction of low tuff rings surrounding broad maar craters. Some volcanoes ceased activity at this stage and their craters filled with freshwater to become maar lakes. All except two have subsequently filled with sediment through natural processes. Many were breached by rising sea level in the early Holocene (c. 8,000 years ago) and were transformed into intertidal, unvegetated basins (Panmure Basin, Orakei Basin, Mangere Lagoon) or high tidal mangrove and salt marsh-filled basins (Tuff Crater).

As groundwater was exhausted, the explosive phase of eruption was usually followed by a drier phase of lava-fountaining that resulted in the construction of steep-sided scoria cones capped with a central crater. The Auckland Domain volcano provides the best example of a 'castle and moat complex' with its large explosion crater having a small central scoria cone in the middle. Te Kopuke/Mount St John provides the best example of a simple scoria cone and crater, whereas many of the other scoria cones are more complex.



Pohutukawa forest on Rangitoto Island.
Les Molloy

In many of the volcanoes, lava rose up inside the vent during the lava-fountaining phase and spilled out over the surrounding land from around the base of the scoria cones. The longest lava flow in the field is 10 km as it flowed down an existing valley from Te Tatua a Riukiuta/ Three Kings volcano and into what is now the Waitemata Harbour.

The Auckland Volcanic Field is the only place in New Zealand where lava caves occur, having formed inside the cooling crusts of lava flows. On an international scale they are not large, but the range of features they possess (Gothic arch cross-section, lava stalactites and stalagmites, wall dribbles, wall rolls, pahoehoe flow floors, surge benches etc.) is comparable to the best international examples. The Wiri lava cave is the best example in New Zealand and the only cave that preserves the thin basalt-lined conduit through the scoria cone before passing down into

the lava flow proper.

Only a few of Auckland's volcanoes contain landforms produced by all three styles of eruption, with one of these (Motukorea) still in pristine form.

Relics of the pre-eruption vegetation are preserved beneath and within the volcanic deposits in a number of places. The two best examples of buried fossil forests are both of international standard. At Ihumatao in-situ trees have been tilted by eruptive surges with their trunks broken off and their branches and leaves preserved in the lower layers of volcanic ash that bury the former forest. At Takapuna Reef, two lava flow surges have passed through a forest. The lava has cooled and solidified around the lower trunks (one metre deep) to form tree moulds, while the remaining molten lava flowed away. This intertidal basalt reef contains over 200 tree moulds as well as the moulds of trunks and branches that collapsed into the lava flow. Nearby are several 3 m-deep, hollow moulds of 1 to 1.5 m diameter kauri trees preserved in a thicker part of the flow.

Background: Pohutukawa forest interior on Rangitoto Island.
Les Molloy

Rangitoto Island.
DOC



INTEGRITY, MANAGEMENT AND RISK ISSUES

As natural features, many of the Auckland Volcanic Field sites proposed for nomination have been modified by human activity over time. The majority of the modifications stem from pre-European Maori occupation. As explained above, this has left an exceptional testimony on the cones. Modern urban development has also impacted on the scoria cones, through quarrying for roading and other construction, and as sites for infrastructure facilities. In some cases cones and tuff rings have been obliterated altogether. Urban Auckland has been built over the majority of the original lava flow fields and some of the explosion craters and tuff rings. However, the cones, lava flow fields, maars and other geological features included in this proposal all possess a high degree of integrity.

World Heritage criteria and guidelines recognise that no site can be pristine if it has been occupied and modified by people. This very modification, reflecting human interaction with the landscape, is of the essence of the qualities which make up outstanding universal heritage value. Collectively, the volcanic cones and stonefields have high integrity and authenticity as a serial Cultural and Natural Heritage site.

Despite the damage wrought by the growth of a large metropolitan city, there are numerous significant natural landforms and geological features within the confined area of the Auckland Volcanic Field that beautifully illustrate the wide diversity of natural processes that occur in these small intra-plate basalt fields worldwide. These include scoria cones, tuff rings, maar craters and freshwater lakes, maars breached and flooded by rising sea-level, lava lake remnants, lava flow fields, shield volcanoes, hornitos, lava caves and surge chambers, and fossil forests preserved by lava flows or buried by volcanic ash.

Legal protection for the nominated sites is of a satisfactory level, as all are publicly owned and most are Crown Land. The majority are managed by local authorities subject to the provisions of the Reserves Act 1977, which requires that significant heritage features be conserved. Relevant protective provisions for all sites are also contained in the Auckland Regional Policy Statement, the Auckland Conservation Management Strategy, district plans of the Auckland, Manukau and North Shore cities, and the Auckland City Volcanic Landscapes and Features Management Strategy. Management plans are in preparation for particular sites.

Future threats to the proposed sites are minimised by their status and management. However, there are still problems in safeguarding earthworks and other features from impacts of human visitors, infrastructure (water reservoirs, telecommunications) demands, and stock grazing. The management of such large and complex sites will continue to present challenges to managing authorities. World Heritage status would help greatly in acknowledging the value of these places and meeting the challenges of ongoing protection.

APPENDIX 1

Cultural Heritage Advisory Group membership:

John Acland (Chair) - Deputy Chair, New Zealand Historic Places Trust

Chris Cochran - Conservation architecture

Professor Charlotte Macdonald - History

Emeritus Professor Erik Olssen - History

Dr Charles Royal - Mataranga Maori

Dame Cheryl Sotheran - Cultural heritage & tourism policy

Lynda Walter - Archaeology

John Daniels - Group Administrator

Natural Heritage Advisory Group membership:

Dr Les Molloy (Chair) - Geomorphology

Lindsay Chadderton - Freshwater ecology

Dr Wendy Nelson - Marine ecology

Dr Alan Mark - Plant ecology

Dr Murray Williams - Species management

Dr David Towns - Island management

Raewyn Hutchings - Group Administrator, DOC

APPENDIX 2

Framework Summarising Assessment of Sites for their Cultural World Heritage Values

Site name	Outstanding Universal Value Criteria					
	Masterpiece of creative genius (i)	Interchange of human values (ii)	Cultural tradition/civilisation (iii)	Significant stage in human history (iv)	Traditional human settlement (v)	Associated values (vi)
Kerikeri Basin historic precinct	No	Yes	Yes	Yes	Yes	Yes
Napier Art Deco historic precinct	No	Yes	No	Yes	No	Yes
Waitangi Treaty Grounds historic precinct	Yes - for Wharenui	Yes	Yes	Yes	No	Yes
Auckland Volcanic Field (mixed cultural/natural serial site)	No	Yes	Yes	Yes	Yes	No

Site name	Integrity			Protection		
	Wholeness/intactness	Adequate size	Neglect	Protection status	Boundary	Buffer zones
Kerikeri Basin historic precinct	Yes	Yes	No	High	Determined	Yes
Napier Art Deco historic precinct	Yes	Yes	No	Medium	Determined	Yes
Waitangi Treaty Grounds historic precinct	Yes	Yes	No	High	Determined	Yes
Auckland Volcanic Field (mixed cultural/natural serial site)	Losses do not detract	Yes	Some	High	Satisfactory	Mixed

Site name	Management			Other Factors		
	Management systems	Sustainable uses	Ownership (private)	Does World Heritage listing pose risk?	Natural significance	Does World Heritage listing add value?
Kerikeri Basin historic precinct	High standard	Yes	No	No	Some	Yes
Napier Art Deco historic precinct	District Plan	Yes	Mostly	No	No	Yes
Waitangi Treaty Grounds historic precinct	High standard	Yes	No	No	Some	Yes
Auckland Volcanic Field (mixed cultural/natural serial site)	Mixed but satisfactory	Satisfactory	No	No	Yes	Yes

APPENDIX 3

Framework Summarising Assessment of Sites for their Natural World Heritage Values

Site name	Outstanding Universal Value Criteria				Integrity								
	Outstanding natural phenomena (vii)	Geological processes/landforms (viii)	Ongoing evolutionary/biological processes (ix)	Habitats for biodiversity conservation (x)	Wholeness/intactness	Adequate size	Neglect						
Sites considered to meet one or more criteria													
Kahurangi NP, Farewell Spit and Canaan Karst	Yes	Yes	Yes	Yes	Yes	Yes	No						
Kermadec Island & Marine Reserve	Yes	Yes	Yes	Yes	High	Yes	No						
Whakarua Moutere – North East Islands	Yes	Yes	Yes	Yes	Yes – serial site	Yes	No						
Canterbury High Country Braided Rivers and Lakes	Yes	Yes	Yes	Yes	To be determined, but achievable	Yes	Benign						
Stewart Island/Rakiura	Yes	No	Yes	No	High	Yes	Some						
Rotorua Geothermal	Yes	Yes	No	No	Site dependant	Yes	Some						
Waters and Seabed Fiords of Fiordland	Yes	Yes	Yes	Yes	Yes	Yes	No						
Kaikoura (Mountains and Canyon)	Yes	No	Yes	Yes	Low	Potential	Benign						
Lake Taupo	No	Yes	No	No	Yes	Yes	No						
Puketi, Omahuta, Waipoua kauri forests	Yes	No	No	No									
Rest of Southern Alps – add to Te Wahipounamu	No	Yes	No	No									
Auckland Volcanic Field	No	Yes	No	No	Medium	Yes	Some						
Sites that did not meet any criteria													
Egmont National Park	No	No	No	No									
Banks Peninsula	No	No	No	No									
Mochau	No	No	No	No									
Tiritiri Matangi Is	No	No	No	No									
<p>Priority Class</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"> High priority, immediate</td> <td style="width: 33%;"> High priority, less immediate</td> <td style="width: 33%;"> High priority, addition to existing site</td> </tr> <tr> <td> Not immediate priority, high future potential</td> <td> Priority mixed cultural/natural</td> <td></td> </tr> </table>								 High priority, immediate	 High priority, less immediate	 High priority, addition to existing site	 Not immediate priority, high future potential	 Priority mixed cultural/natural	
 High priority, immediate	 High priority, less immediate	 High priority, addition to existing site											
 Not immediate priority, high future potential	 Priority mixed cultural/natural												

Protection			Management			Other Factors		
Protection Status	Boundary	Buffer Zones	Management systems	Sustainable uses	Ownership (private)	Does listing pose risk?	Cultural Significance	Does World Heritage listing add value?
Yes (High)	Some resolution required	Yes	Good systems in place	No	No	Yes	Unknown	Adds some value to co-ordination & integration
Yes (High) - White Island privately owned	Additions need to be determined - serial site	Potential	Mixed - high to non-existent	OK	No	Perhaps to fishing industry	Yes	Yes
High	Some issues	Marine Areas	CMS's & restoration plans	Diving, fishing, tourism	Treaty Claims exist	Treaty Claim	Yes	Yes
Mixed	Needs resolution	Yes	In need of co-ordination - land & freshwater	Vulnerable	Mostly no	Yes	Unknown	Yes
National park; mataitai; marine & nature reserves	Some issues	Yes	National park management plan being developed	Yes	Titi islands & Big South Cape - not included	Some	Yes	Yes - to marine zone
Mixed-scenic reserve and private land	To be determined	Issue of geothermal extraction	No co-ordinated management system	Tourism & extractive uses	Mixed - public & private	From extraction - tourism	Yes	Yes
Yes	Yes	Yes	Management Plan	Marine mammal watching, diving, tourism	No	Tourism	Yes	Yes
Fragmented and incomplete	Not defined - needs determining	Yes	Fragmented	Problematic	Needs further consideration	Yes	Yes	Yes
Some, fragmented	OK	Some	Evolving	Trout Fishery	Major issue	Yes	Yes	Yes
Yes - Most representative sites protected	OK	OK	No-limited co-ordination currently but willingness to co-operate	OK	Not a significant issue	No - potential community support	Yes - iconic cultural landscape	Yes