

4.1 LEVEL 1 SITES

The following 62 sites were determined as Level 1 sites (Table 6). These are listed in alphabetical order in Appendix 12, and described and mapped as follows.

TABLE 6: LIST OF LEVEL 1 SITES

SITE NAME	SURVEY NO.	GRID REF.
Western Coast A:		
Aranga Beach North Coastal Communities	O07/011	O07 627 031
Shag Lake and Wetland	O07/014	O07 646 011
Western Coast B:		
Aranga Beach South Coastal Communities	O07/016	O07 634 021
Lake Waikere, Wetland and Shrubland	O07/018	O07 675 002
Lake Taharoa, Wetland and Shrubland	O07/022	O07 695 992
Lake Kai Iwi, Wetland and Shrubland	O07/024	O07 699 981
Te Kawa Stream Forest	O07/121a	P07 761 981
Omamari Government Purpose Wildlife Management Reserve and Surrounds	P07/127	P07 718 959
Omamari Road Grassland and Wetland	P07/130	P07 715 920
Newlove Airstrip Wetland	P07/131	P07 722 929
Maitahi Wetland Scientific Reserve and Surrounds	P07/133	P07 780 925
Frith Road Northern Dairylands Forest	P07/135	P07 825 925
Mangakahia Forest Wetland	P07/140	P07 816 912
Rotu Stream Forest	P07/141	P07 825912
Opanake Road Morris Forest	P07/142	P07 737 918
Babylon Smith Wetland	P07/145	P07 737 918
NRC Opanake Road Reserve Forest	P07/148	P07 842 906
Opanake Road Davidson Forest and Shrubland	P07/150	P07 842 902
Long Gully Wetland and Shrubland	P07/153	P07 751 879, P07 757 884
Kaihu Valley West Shrubland	P07/157a	P07 827 897
Opanake Road Shrubland and Forest	P07/158	P07 855 885
Hoanga Alluvial Forest	P07/162	P07 916 910
Lower Kaihu River Forest Fragments	P07/169	P07 867853, 872 848, 873 845
Hokianga Road Railway Treeland	P07/169a	P07 875 867, 881 869
Freidrich's Lake and Wetland	P07/171	P07 792 843
Dargaville Bridge Forest	P07/173	P07 904837
Lake Rehutai and Wetland	P07/174a	P07 800 806
Aoroa Road Forest	P08/056	P08 904 796
Western Coast C:		
Glinks Gully North Grassland, Flaxland and Forest	P08/061	P08 various
Newsham Road North Forest	P08/067a	P08 963 699
Newsham Road South Forest	P08/067b	P08 965 692
Kidds Creamery Road Corner Forest	P08/068a	P08 955 712
NRC Creamery Road Reserve Forest	P08/068b	P08 957 707
Kidds Creamery Road Middle Forest	P08/068c	P08 957 710

Western Coast D:		
Glinks Gully South Grassland, Wetland and Shrubland	P08/072	P08 various
Mapau Bush	P08/094a	P08 052 608
Russell Wetland	P08/096	P08 017 539
Tangitiki Estuary, Wetland and Shrubland	P08/101	P08 074 511
Kaipara Harbour, Shrubland and Rushland	P08/200	P08 various
Clarke's Lake and Wetland	P08/208	P08 917 649
Greville's Lagoon and Wetland	P08/209	P08 847 736
Lake Kapoai and Wetland	P08/210	P08 856 726
Lake Wainui and Wetland	P08/211	P08 892 682
Waimamaku Estuary, Shrubland and Rushland	P08/213	P08 064 534
Western Coast E: Pouto Dune System		
Kelly's Bay/Punahaere Creek Estuary, Shrubland and Forest	P09/003	P09 090502, P09 502 090
Upper Okaro Bush	P09/008	P08 085 455
Tapu Bush	P09/011	P09 071 426
Lake Rotopouua, Wetland and Forest	P09/014	P09 099 417
Lake Rototuna and Wetland	P09/205	P09 040 495
Okaro Creek/Waikere Creek Duneland, Wetland and Shrubland	Q09/051	Q09 136 448, Q09 142 426
Wetland East of Lake Rotopouua	Q09/053	Q09 105 421
Lake Humuhumu, Wetland and Forest	Q09/054	Q09 115 409
Lake Rotootuauru, Wetland and Forest	Q09/055	Q09 127 405
Tauhara Creek Estuary, Sandfield, Wetland and Shrubland	Q09/056	Q09 165 397
Lake Rotokawau and Wetland	Q09/057	Q09 135 387
Lake Kanono, Wetland and Forest	Q09/058	Q09 128 375
Lake Kahuparere, Wetland and Shrubland	Q09/060	Q09 145 361
Pretty Bush	Q09/061	Q09 353 120
Pouto Point Wildlife Reserve Sandfield, Wetland and Shrubland	Q09/063	Q09 150 354
Ongange Creek Wetland, Shrubland and Forest	Q09/150	Q09 116 476
Finlayson's Lake and Wetland	Q09/201	Q09 141 367

WEST COAST A: ARANGA BEACH NORTH COASTAL COMMUNITIES

Survey no. O07/011
Survey date 29 November 2006
Grid reference O07 627 031
Area 13.9 ha
Altitude 0–20 m asl

Ecological units

- (a) Spinifex sandfield on foredune (20%)
- (b) Knobby clubrush rushland on rear dune (47%)
- (c) Pohutukawa forest on rear dune (15%)
- (d) Undescribed shrubland (18%)

Landform/geology

Holocene unconsolidated transverse and parabolic dunes.

Vegetation

The site comprises

- (a) a sparsely-vegetated foredune with spinifex dominant, and some pingao, sand sedge, knobby clubrush, tauhinu, and adventive herbs.
- (b) Behind lies a more vegetated rear dune dominated by knobby clubrush and a variety of native and adventive shrubs (e.g., tauhinu, sand coprosma, boneseed, tree lupin), grasses (e.g., coastal toetoe, sand wind grass), sedges (e.g., *Carex testacea*), and herbs (e.g., *Oxalis rubens*, New Zealand spinach, adventive iceplant).

There is a very small area of pohutukawa forest

- (c) at the northern end, mostly on freehold land.
- (d) There are two tracts of undescribed shrubland nearby.

Significant flora

Pingao (Gradual Decline) and sand coprosma (Regionally Significant), recorded during this survey.

Fauna

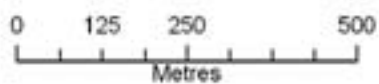
Northern New Zealand dotterel (Nationally Vulnerable), Caspian tern (Nationally Vulnerable), white-fronted tern (Gradual Decline), variable oystercatcher (Regionally Significant), black-backed gull, pied shag, white-faced heron, Australasian pied stilt, New Zealand pipit. Shore skinks were recorded in 1972 (DOC Bioweb).

Significance






Despite the inland fence being in poor condition in places and stock access, the site supports a relatively intact sequence of coastal dune vegetation, with a representative range of native sand species, including threatened and regionally significant species, still present. The site contains

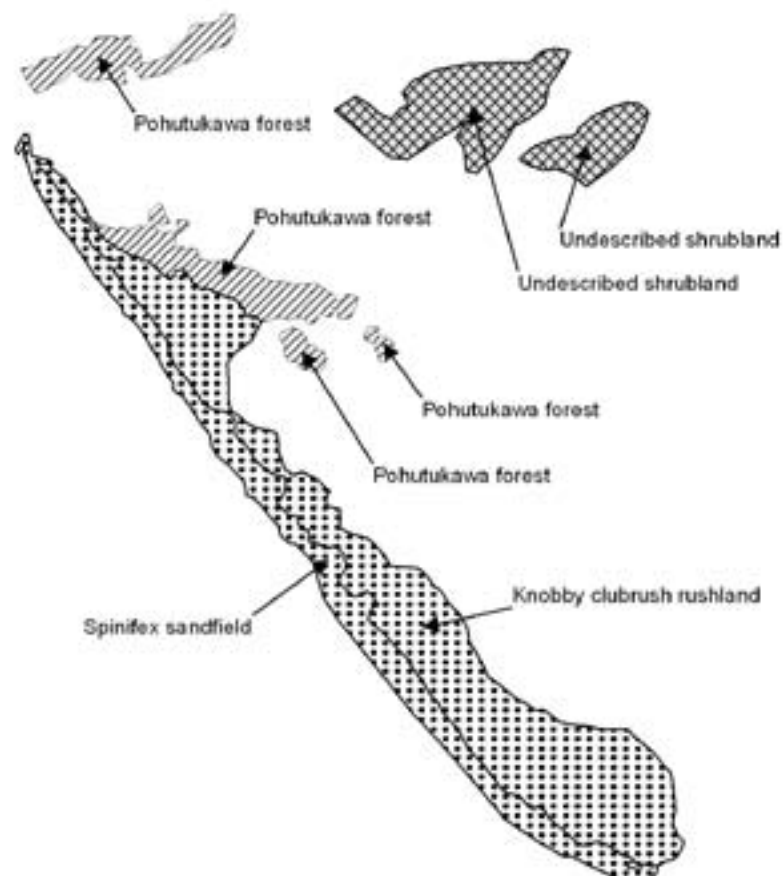


007/011 Western Coast A: Aranga Beach North Coastal Communities



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

0.2 ha of Chronically Threatened land environment A7.1a and 4.6 ha of At Risk environment G1.1c. Site for two representative ecological units: (a) Spinifex sandfield on foredune, and (c) Pohutukawa forest on rear dune.

SHAG LAKE AND WETLAND

Survey no. O07/014
Survey date 14 December 2006
Grid reference O07 646 011
Area 17 ha
Altitude 80-100 m asl

Ecological units

- (a) *Eleocharis sphacelata* reedland on alluvium (8%)
- (b) Open water in dune lake (92%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene parabolic dunefield.

Vegetation

This site comprises a small dune lake.

- (a) The discontinuous lacustrine fringe is dominated by *Eleocharis sphacelata*, and locally by raupo or *Baumea articulata*.
- (b) Open water in dune lake.

Significant flora

Sand coprosma, recorded during this survey, and *Glossostigma elatinoides* (SSBI O07/H005) are both Regionally Significant.

Fauna

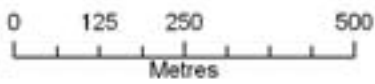
Longfin eel (Gradual Decline), shortfin eel, common bully (Wells et al. 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered) (recorded by OSNZ in 1986). New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse) (OSNZ surveys 1977-1991). Australasian little grebe (Regionally Significant) (recorded by OSNZ in 1986). Australasian shoveler (Regionally Significant), pied shag, Australasian harrier, pukeko, spur-winged plover, Australasian pied stilt, black-backed gull, New Zealand kingfisher, Pacific swallow (OSNZ surveys 1977-1991). Grey warbler, silvereye, North Island fantail, New Zealand pipit, white-faced heron, paradise shelduck (SSBI O07/H005, 1978, 2004). Shore skink were recorded in 2004 (SSBI O07/H005).

Significance






Ranked Low by Wells et al. (2007). Threatened and regionally significant animal species are present. The presence of a pest fish, gambusia (Wells

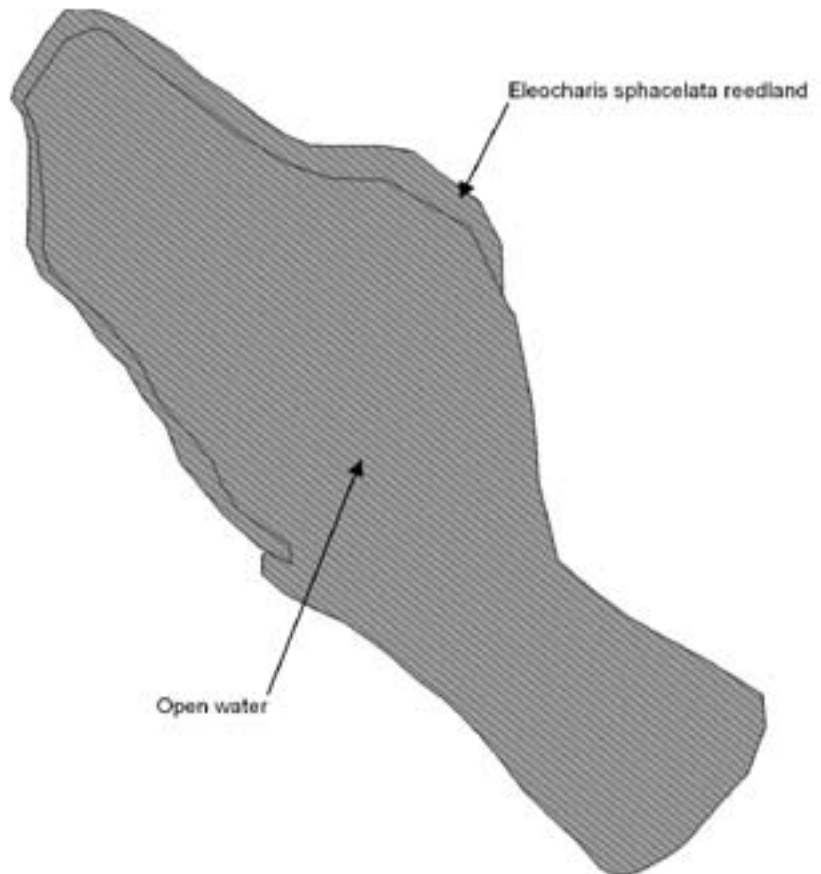


007/014 Shag Lake and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

et al. 2007), and grazing to the water's edge around the entire perimeter have compromised the current value of the site. However, this lake provides habitat for several threatened and regionally significant species. The site contains 9.7 ha of At Risk land environments A6.b and A6.1c. A very small proportion of the site (0.9 ha) is already protected in Shag Lake Marginal Strip, administered by DOC.

WESTERN COAST B: ARANGA BEACH SOUTH COASTAL COMMUNITIES

Survey no.	O07/016
Survey date	29 November 2006
Grid reference	O07 634 021
Area	212.5 ha
Altitude	0-120 m asl

Ecological units

- (a) Spinifex sandfield on foredunes (21%)
- (b) Harakeke-mingimingi shrub-flaxland on coastal hillslopes (45%)
- (c) Manuka shrubland on coastal hillslopes (33%)
- (d) Pohutukawa forest on coastal hillslopes (O07 652 002) (1%)

Landform/geology

Mid-late Pleistocene (Karioitahi Group) consolidated dune sand, cliffed on seaward side, overlain by Holocene unconsolidated sand dunes.

Vegetation

The site lies immediately south of the Waihaupai Stream, and comprises limited areas of unconsolidated foredune abutting a prominent system of consolidated dunes with blowouts in places.

- (a) Spinifex dominates the foredunes, with knobby clubbrush and shore bindweed frequent.
- (b) Harakeke is dominant over most of the consolidated sands, in a variable mosaic of native and adventive shrubs (the commonest of which is mingimingi), grasses (especially coastal toetoe), sedges (especially knobby clubbrush), lianes (pohuehue), restiads (oioi), and herbs (e.g., New Zealand spinach). Pohutukawa and kanuka are locally present, and pockets of manuka shrubland occur in sheltered sites on the dune crests.
- (c) Manuka shrubland contains frequent mingimingi, harakeke, coastal toetoe and kikuyu, and occasional *Leucopogon fraseri*, knobby clubbrush, radiata pine, pohuehue, sand coprosma, tree lupin, and giant umbrella sedge.
- (d) At the southern end there is a small gully with pohutukawa forest with occasional hangehange, rasp fern, and harakeke. Ground cover consists of New Zealand spinach and introduced grasses. The inland fence is derelict, and stock grazing has led to local patches of adventive grassland.

Significant flora

Sand coprosma (Regionally Significant), recorded during this survey.

Fauna

Northern New Zealand dotterel (Nationally Vulnerable), Caspian tern (Na-

tionally Vulnerable), white-fronted tern (Gradual Decline), variable oystercatcher (Regionally Significant), black-backed gull, pied shag, white-faced heron, Australasian pied stilt, New Zealand pipit. The moth *Notoreas* sp. 'northern' (Nationally Endangered) was recorded in 2008 (A. Booth, DOC, pers. comm.), and black katipo (Serious Decline) in 2000 (Griffiths 2000). Koura (Gradual Decline) are also present (R. Parrish, pers. comm.)

Significance

An impressive tract of relatively intact vegetation on largely consolidated sands, with native species, including threatened and regionally significant species, still dominant. Contains 2.4 ha of Chronically Threatened land environment A7.3a, and 102.2 ha of At Risk environments A6.1b, A6.1c, and G1.1c. A small proportion of the site is already protected in Ureti Conservation Area (2.6 ha) and Ureti Marginal Strip (44.9 ha), administered by DOC. Site for all four representative ecological units: (a) Spinifex sandfield on foredunes, (b) Harakeke-mingimingi shrub-flaxland on coastal hillslopes, (c) Manuka shrubland on coastal hillslopes, and (d) Pohutukawa forest on coastal hillslopes.

LAKE WAIKERE, WETLAND AND SHRUBLAND

Survey no.	O07/018
Survey date	12 December 2006
Grid reference	O07 675 002
Area	35 ha
Altitude	95-105 m asl

Ecological units

- (a) Kanuka/manuka shrubland on hillslope (both lakes) (39%)
- (b) Sandfield on alluvium (Lake Waikere) (1%)
- (c) Raupo reedland on alluvium (smaller lake) (2%)
- (d) Open water in dune lake (58%)

Landform/geology

Lakes in depressions on early Pleistocene (Awhitu Group) cemented dune sand and associated facies, ponded at landward edge of mid-late Pleistocene (Karioitahi Group) consolidated parabolic dune belt; hillslopes of (Awhitu Group) sediments bordering Lake Waikere.

Vegetation

Manuka shrubland on the eastern side of Lake Waikere has a canopy height of 2-3 m, while on the southern side the canopy reaches over 6 m. All vegetation is unfenced and there are rough vehicle tracks through the shrubland to the shore margin. The smaller lake to the northwest of Lake Waikere has a marginal fringe of raupo wetland. Shrubland similar to that at Lake Waikere is located beyond the smaller lake's wetland fringe. There are also planted kauri, rimu, and tarata to the southwest of the smaller lake amongst the shrubland. The smaller lake's vegetation is unfenced with major drains towards Lake Waikere.

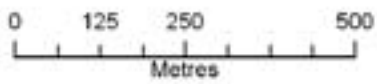
- (a) Kanuka/manuka shrubland consists of common manuka and kanuka, frequent mamaku, and occasional hangehange, bracken, radiata pine and prickly hakea, Spanish heath, rewarewa, downy hakea, harakeke, mingimingi, coastal karamu, *Schoenus brevifolius*, and pohutukawa.
- (b) Littoral sandfield consists of frequent *Eleocharis sphacelata*, *Baumea juncea* and *Gonocarpus incanus*, and occasional harakeke and pampas.
- (c) Lacustrine raupo reedland consists of abundant raupo, frequent harakeke, and occasional *Eleocharis sphacelata*, *Azolla pinnata*, *Myriophyllum aquaticum*, *Isolepis* species, gorse, and water primrose.
- (d) Open water of dune lake.

Significant flora






Hydatella inconspicua (Wells et al. 2007) is in Serious Decline.

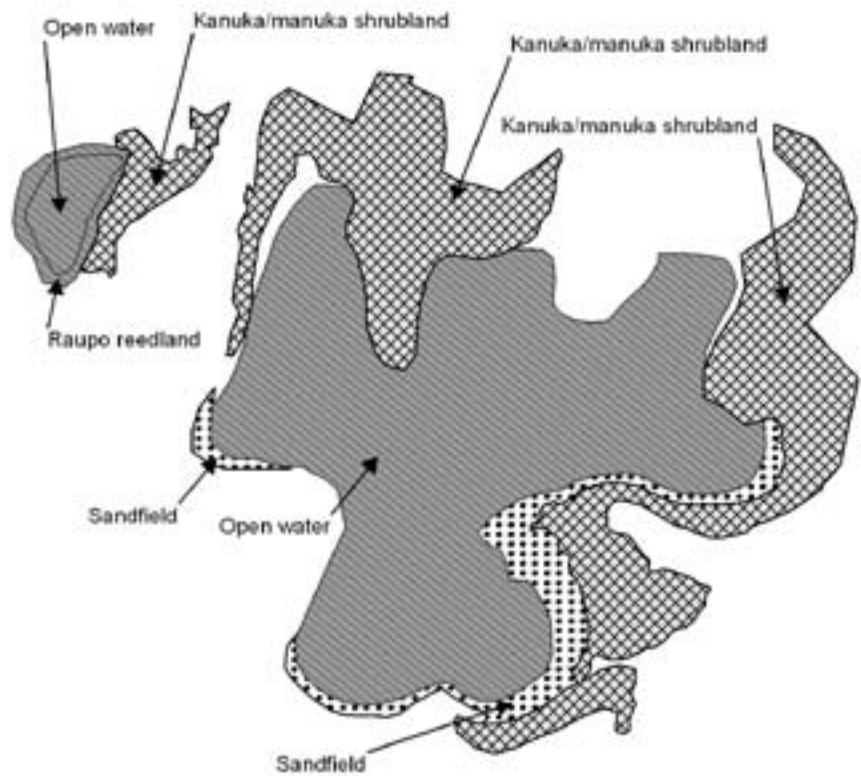


007/018 Lake Waikere, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

Lake Waikere: Dunelakes galaxias (Nationally Vulnerable), koura (Gradual Decline) (NIWA 2007). Longfin eel (Gradual Decline) (Wells et al. 2007). Freshwater crab (Sparse), shortfin eel, common bully (NIWA 2007). Grey duck (Nationally Endangered), red-billed gull (Gradual Decline), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), grey teal (Regionally Significant), grey warbler, silvereye, North Island fantail, Australasian harrier, white-faced heron, pied shag, paradise shelduck, black-backed gull, Pacific swallow, Australasian pied stilt, Australasian shoveler (Regionally Significant) (SSBI O07/H007, 1978, 1992). Spur-winged plover, New Zealand kingfisher (OSNZ surveys 1977-1991).

Northern lake: Dunelakes galaxias (Serious Decline) (NIWA 2007), koura (Gradual Decline) (Wells et al. 2007). Grey duck (Nationally Endangered), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), spotless crake (Sparse), paradise shelduck, Australasian harrier, pukeko, Pacific swallow (OSNZ surveys 1977-1991).

Significance

Lake Waikere, one of the two deepest dune lakes in New Zealand (Tanner et al. 1986), is dominated by native communities and was ranked Outstanding by Wells et al. (2007). Its value is enhanced by the presence of threatened plant and animal species. Pest fish (gambusia) are present. The dammed dune lakes at Kai Iwi (including Lake Waikere) are Nationally Important Geological Sites (Kenny & Hayward 1996). Contains 8.5 ha of Chronically Threatened land environment A5.2a and 10.3 ha of At Risk environment A6.1c. The lake is part of a 538 ha parcel of Crown land administered as Recreation Reserve by the Kaipara District Council. Site for two representative ecological units: (a) Kanuka/manuka shrubland on hillslope, and (b) Sandfield on alluvium.

LAKE TAHAROA, WETLAND AND SHRUBLAND

Survey no.	O07/022
Survey date	12 December 2006
Grid reference	O07 695 992
Area	197 ha
Altitude	70-90 m asl

Ecological units

- (a) Oioi-*Baumea juncea* rush/sedgeland on alluvium (4%)
- (b) Manuka shrubland on hillslope (1%)
- (c) Kanuka shrubland on hillslope (3%)
- (d) Open water in dune lake (92%)

Landform/geology

Lake and swamp deposits in depression on early Pleistocene (Awhitu Group) cemented dune sand and associated facies, ponded at landward edge of mid-late Pleistocene (Karioitahi Group) consolidated parabolic dune belt; hillslopes of (Awhitu Group) sediments bordering Lake Taharoa.

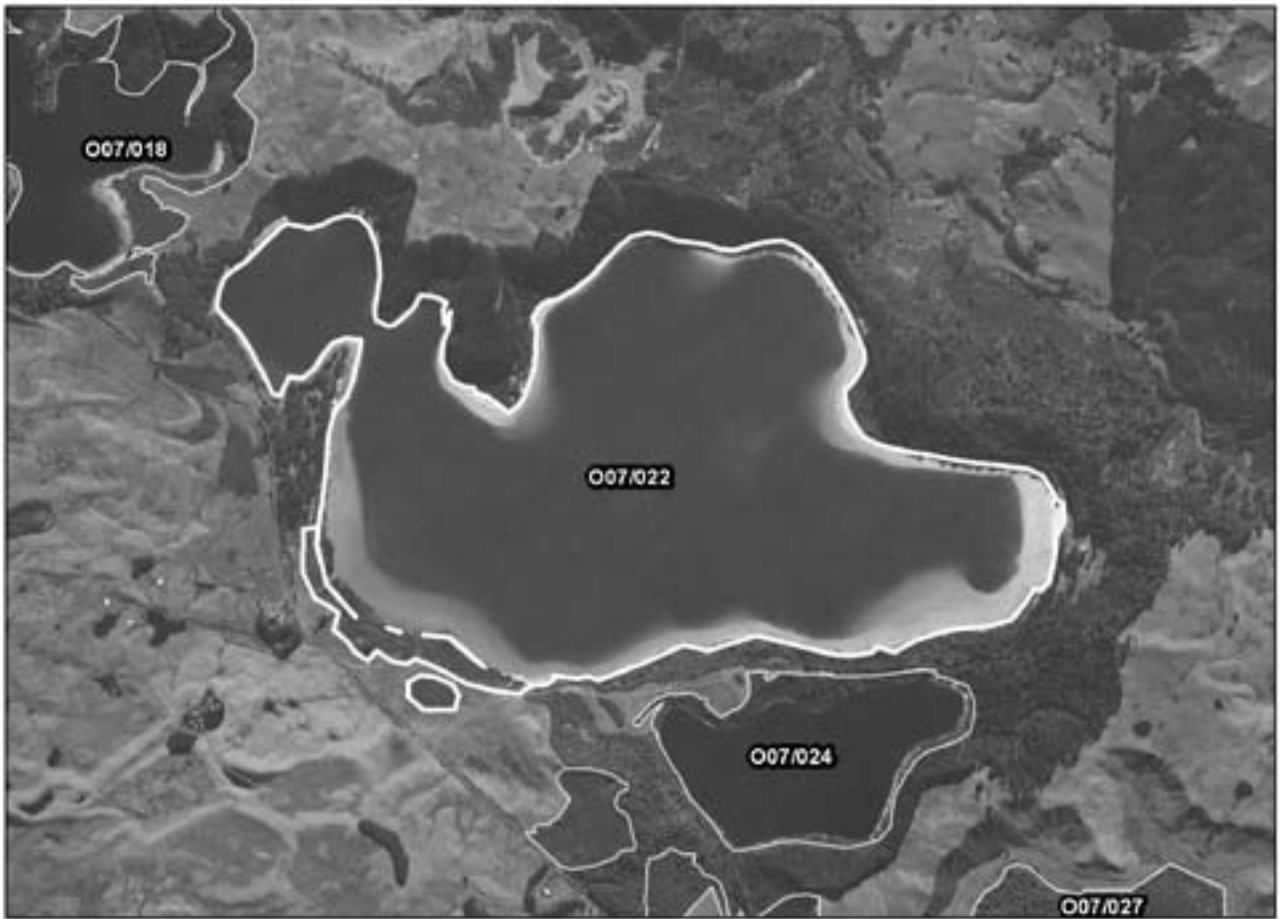
Vegetation

Lake Taharoa is largely surrounded by pine plantation, but has three ecological units dominated by native species. Lacustrine rush/sedgeland extends for 50 m on the southern margin of the lake. This margin is fenced (preventing public access) and in good condition. A small pocket of manuka shrubland is situated on the eastern margin of the lake. It is unfenced, surrounded by pasture, and has a canopy of up to 3 m high. Behind the lacustrine sedge/rushland is a thin wedge of kanuka shrubland, also unfenced and over-run with exotics such as Sydney golden wattle.

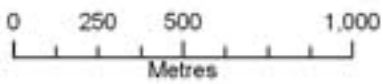
- (a) Lake margin rush/sedgeland consists of common oioi and *Baumea juncea*, frequent forked sundew, pohutukawa, manuka, *Leucopogon fraseri*, and Spanish heath, and occasional arching clubmoss, *Lobelia anceps*, *Centella uniflora*, tangle fern, Sydney golden wattle and *Utricularia* species.
- (b) Manuka shrubland consists of abundant manuka, frequent tangle fern, ring fern, bracken, and Sydney golden wattle, and occasional wheki, ti kouka, *Baumea teretifolia*, pohuehue, and *Dracophyllum lessonianum*.
- (c) Kanuka shrubland consists of abundant kanuka and occasional Sydney golden wattle.
- (d) Open water.

Significant flora






Hydatella inconspicua (Serious Decline) (Wells et al. 2007). *Dracophyllum sinclairii* (SSBI O07/H007), arrow grass (Wells et al. 2007), and forked sundew (recorded during this survey) are all Regionally Significant. There is a 1981 record of *Centipeda minima* ssp. *minima* (Nationally Critical) (DOC Bioweb).

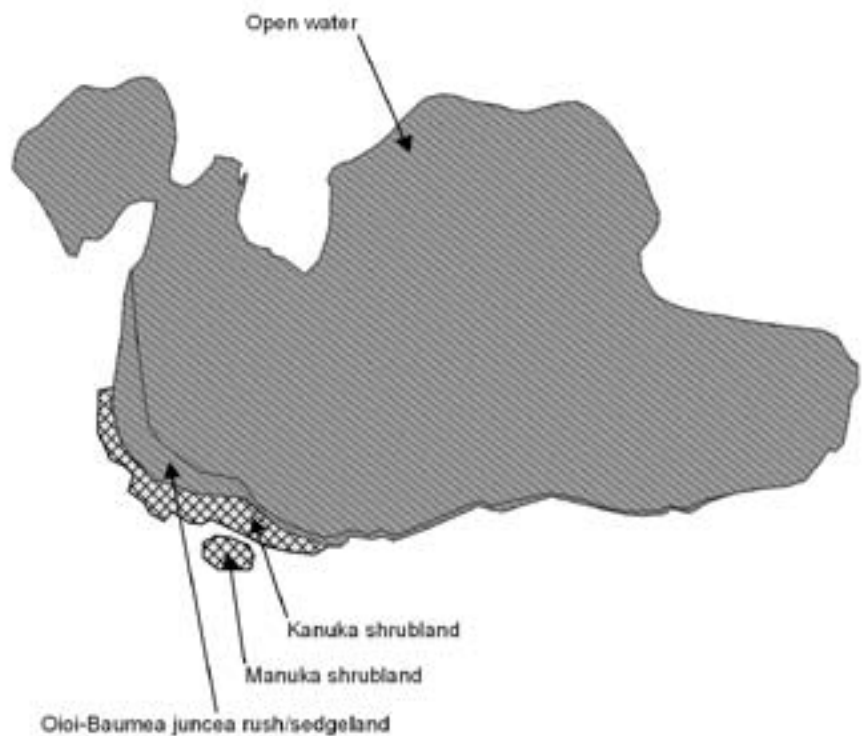


O07/022 Lake Taharoa, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

Dunelakes galaxias (Nationally Vulnerable), koura (Gradual Decline) (NIWA 2007). Longfin eel (Gradual Decline) (R. Parrish and K. Hawkins, DOC, pers. comm.). Freshwater crab (Sparse) (NIWA 2007). Shortfin eel, common bully (R. Parrish and K. Hawkins, DOC, pers. comm.). Australasian bittern (Nationally Endangered) (OSNZ surveys 1977-1992). Grey duck (Nationally Endangered) (SSBI O07/H007, 1978, 1992). North Island brown kiwi (Serious Decline) were recorded between Lake Kai Iwi and Lake Taharoa in 2002 (SSBI O07/H007). Red-billed gull (Gradual Decline), New Zealand dabchick (Sparse), black shag (Sparse), pied shag, little shag (Sparse) (SSBI O07/H007, 1978, 1992), little black shag (Sparse) grey teal (Regionally Significant), black-fronted dotterel (Coloniser) (OSNZ surveys 1977-1992). White-faced heron, paradise shelduck, black-backed gull, grey warbler, silvereye, North Island fantail, Australasian harrier, Pacific swallow, Australasian pied stilt, Australasian shoveler (Regionally Significant) (SSBI O07/H007, 1978, 1992). Spur-winged plover, pukeko, New Zealand kingfisher (OSNZ surveys 1977-1992).

Significance

Lake Taharoa is the deepest and second largest (after Lake Omapere in Kaikohe ED) lake in Northland, and one of the two deepest dune lakes in New Zealand (Tanner et al. 1986). Ranked Outstanding by Wells et al. (2007) because it is the best example of its type (clearwater) and has the deepest recorded submerged vegetation in the North Island. Many threatened plant and animal species are present, as well as the pest fish gambusia and rainbow trout. The dammed dune lakes at Kai Iwi (including Lake Taharoa) are Nationally Important Geological Sites (Kenny & Hayward 1996). Contains 30.8 ha of Chronically Threatened A5.2a, and 1.1 ha of At Risk A6.1b and A6.1c. The lake is part of a 538 ha parcel of Crown land administered as Recreation Reserve by the Kaipara District Council. Site. The single ecological unit, (b) Manuka shrubland on hillslope, is representative.

LAKE KAI IWI, WETLAND AND SHRUBLAND

Survey no.	O07/024
Survey date	29 November 2006
Grid reference	O07 699 981
Area	35 ha
Altitude	70-100 m asl

Ecological units

- (a) Oioi-*Baumea arthropphylla*-*B. juncea*-*B. articulata*-*Eleocharis sphacelata* reedland on alluvium (15%)
- (b) Kanuka/manuka shrubland on hillslope (12%)
- (c) Open water in dune lake (73%)

Landform/geology

Lake in depression on early Pleistocene (Awhitu Group) cemented dune sand and associated facies, ponded at landward edge of mid-late Pleistocene (Karioitahi Group) consolidated parabolic dune belt; hillslopes of Awhitu Group and Karioitahi Group sediments bordering Lake Kai Iwi.

Vegetation

The site occupies the basin of Lake Kai Iwi, and comprises very small areas of

- (a) lacustrine reedland dominated by oioi, *Baumea arthropphylla*, *B. juncea*, *B. articulata*, and *Eleocharis sphacelata*, and a much larger area of
- (b) riparian kanuka/manuka shrubland (dominated by manuka) with a wide range of woody and herbaceous native species characteristic of the northern heathlands ('gumland'). There has been significant invasion by weedy trees (e.g., radiata pine) and shrubs (e.g., Sydney golden wattle, prickly hakea). In places, hillslopes support adventive forest dominated by radiata pine and black wattle (western side) or Sydney golden wattle (northern side).
- (c) Open water.

Significant flora

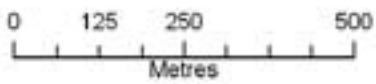
Hydatella inconspicua (Serious Decline) (2001, AK 256186). *Drosera pygmaea* (Gradual Decline) (2003, AK 288711). *Myriophyllum votschii*, *Centrolepis strigosa* (CHR 319045), and ladies tresses (SSBI O07/H007), all Regionally Significant.

Fauna






Dunelake galaxias (Serious Decline) have been recorded in the past (Rowe & Chisnall 1997). Freshwater mussel (Gradual Decline) (Wells et al. 2007). Common bully (NIWA 2007). Australasian bittern (Nationally Endangered) (OSNZ surveys 1977-1992). Grey duck (Nationally Endangered), red-billed gull (Gradual Decline) (SSBI O07/H007, 1978, 1992). Little black shag (Sparse) (OSNZ surveys 1977-1992). New Zealand dabchick (Sparse), little

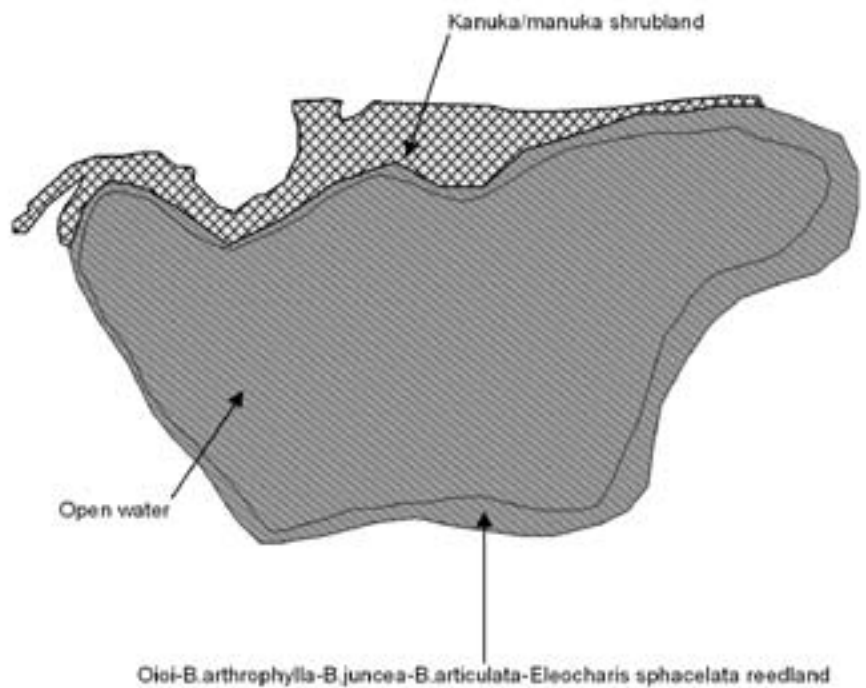


007/024 Lake Kai Iwi, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

shag (Sparse), black shag (Sparse), grey teal (Regionally Significant), white-faced heron, grey warbler, silvereye, North Island fantail, Australasian harrier, pied shag, paradise shelduck, black-backed gull, Pacific swallow Australasian pied stilt, Australasian shoveler (Regionally Significant) (SSBI O07/H007, 1978, 1992). Pukeko, New Zealand kingfisher (OSNZ surveys 1977-1992).

Significance

Lake Kai Iwi was ranked Outstanding by Wells et al. (2007) because it is dominated by native plants and remains free of aquatic weeds. Unfortunately, the acutely threatened dunelake galaxias has not been recorded from this lake for many years, and is threatened by the introduced pest fish species gambusia (B. David, pers. comm.). Although substantially invaded by weedy adventive trees and shrubs, much of the gumland around Lake Kai Iwi remains dominated by native species and, with weed control, is capable of restoration. The dammed dune lakes at Kai Iwi are Nationally Important Geological Sites (Kenny & Hayward 1996). Contains 6.5 ha of Chronically Threatened A5.2a, and 2.5 ha of At Risk A6.1b and A6.1c. The lake is part of a 538-ha parcel of Crown land administered as Recreation Reserve by the Kaipara District Council. Site for one representative ecological unit: (a) Oioi-*Baumea arthrophylla*-*B. juncea*-*B. articulata*-*Eleocharis sphacelata* reedland on alluvium.

TE KAWA STREAM FOREST

Survey no.	P07/121a
Survey date	12 December 2006
Grid reference	P07 761 981
Area	2.9 ha
Altitude	40-100 m asl

Ecological unit

(a) Totara-puriri forest on hillslope (100%)

Landform/geology

Hillslope on weathered Miocene basalt flows (Waipoua Basalt).

Vegetation

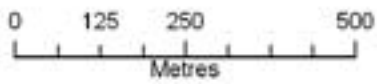
This site comprises a stand of advanced secondary mixed conifer/broadleaved forest on a south-facing hillslope above Te Kawa Stream. Totara and puriri are common, with kahikatea and taraire frequent. A wide range of other tree species is present, including titoki, northern rata, towai, and karaka. It is contiguous with pine plantation on the western side.

Significant flora






Northern rata (Regionally Significant), recorded during this survey.

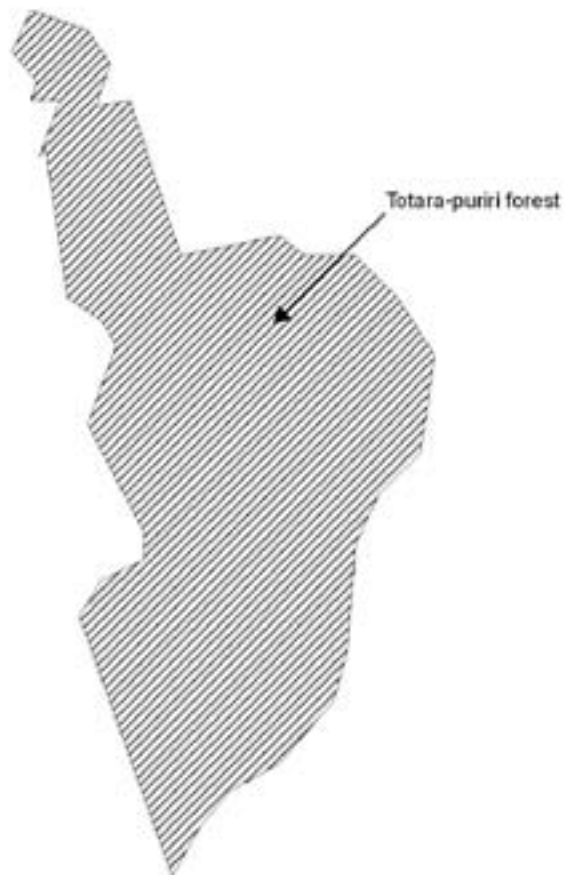


P07/121A Te Kawa Stream Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

Australasian harrier, New Zealand kingfisher.

Significance

A botanically valuable, representative, and aesthetically attractive remnant, currently grazed, with a diverse range of canopy species (including the only northern rata recorded in this survey) that would benefit greatly from fencing. Contains 0.3 ha of Chronically Threatened land environment A5.2a and 0.3 ha of At Risk environment A6.1c. The single ecological unit, (a) Totara-puriri forest on hillslope, is representative.

OMAMARI GOVERNMENT PURPOSE WILDLIFE MANAGEMENT RESERVE AND SURROUNDS

Survey no.	P07/127
Survey date	13 December 2006
Grid reference	P07 718 959
Area	177.5 ha
Altitude	20-100 m asl

Ecological units

- (a) Manuka shrubland on hillslope (52%)
- (b) Harakeke-pampas flaxland on alluvium
- (c) *Baumea arthropphylla* sedgeland on alluvium
- (d) *Eleocharis sphacelata* reedland on alluvium
- (e) Raupo reedland on alluvium (all wetland types together comprise 40%)
- (f) Undescribed wetlands on alluvium (8%)

Landform/geology

Hillslopes eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, and in mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunes, with Holocene alluvial and swamp deposits on valley floor.

Vegetation

This site comprises an extensive tract of wetland in the middle reaches of an unnamed stream (and its tributaries) that enters the sea at Omamari, with extensive tracts of manuka shrubland on adjacent hillslopes of various aspects.

- (a) The shrubland is dominated by manuka, with frequent akepiro and a wide range of other secondary tree and shrub species. It has been widely invaded by prickly hakea and to a lesser extent by brush wattle. North-facing slopes are much weedier than south-facing ones. Wetlands comprise a small area of

- (b) harakeke-pampas swamp at the western edge, with frequent *Baumea articulata*.

The central large area comprises a mosaic of types, dominated variously over large areas by

- (c) *Baumea arthropphylla* sedgeland,
- (d) *Eleocharis sphacelata* reedland, or mixtures of both. Smaller areas are dominated variously by raupo, *Baumea articulata*, or *Isolepis distigmata*, and there are fringes of *Baumea juncea*. Manuka is very locally frequent, e.g., in the upper part of the north-east arm. There is a wide range of other herbaceous wetland species including wire rush in the middle of the wetland.
- (e) The eastern areas support extensive tracts of raupo reedland with occasional patches of *Eleocharis sphacelata*.
- (f) There are also three discrete undescribed wetlands to the north of the main wetland.

Significant flora

Utricularia australis (Nationally Endangered) (2000, AK 248055). Marsh fern (2000, AK 248057) and *Cyclosorus interruptus* (2000, AK 248058), both in Gradual Decline.

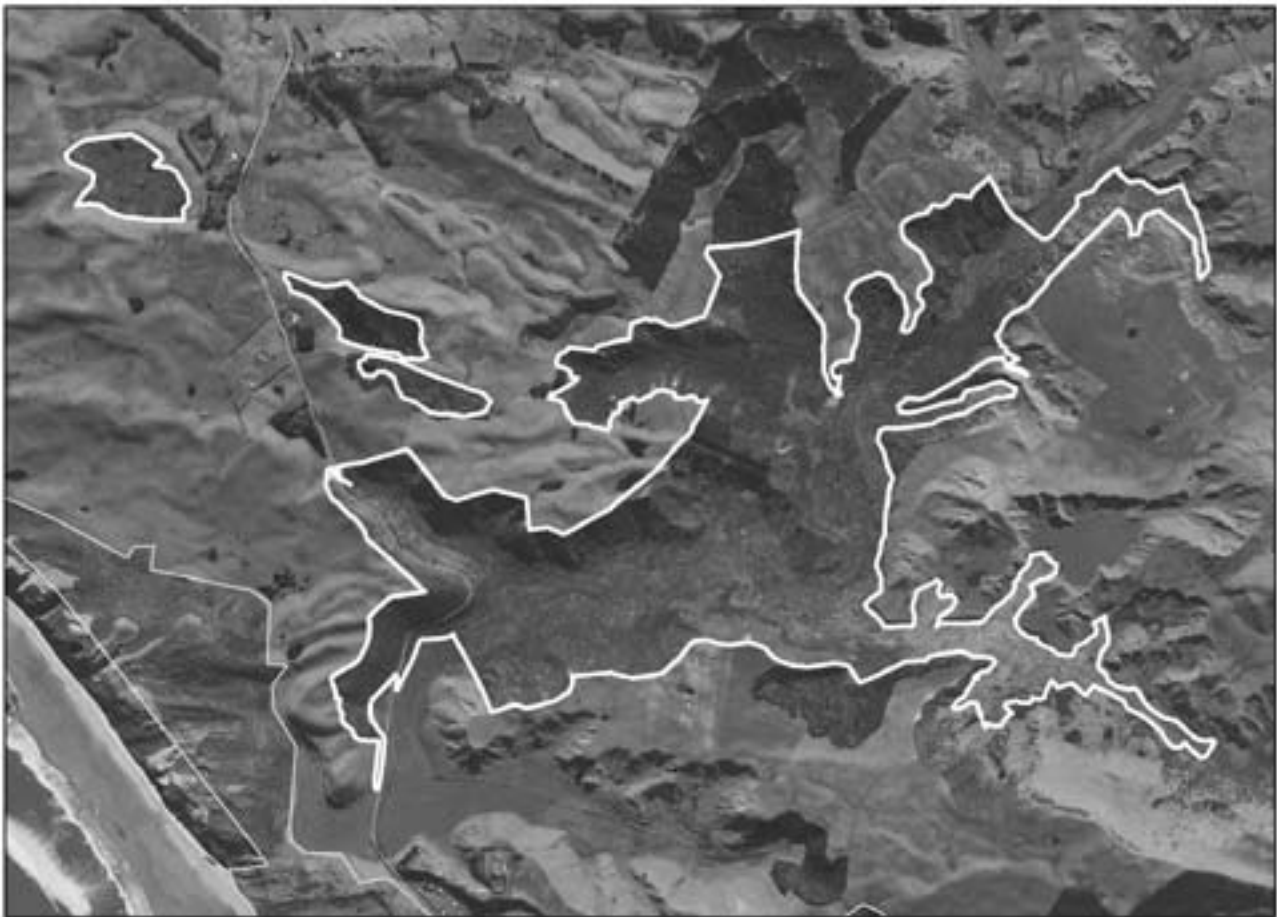
Swamp coprosma, forked sundew, and wire rush, recorded during this survey, are all Regionally Significant.

Fauna

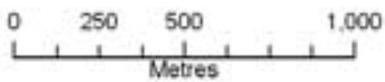
Australasian bittern (Nationally Endangered), North Island fernbird (Sparse), little shag (Sparse), grey warbler, silvereye, North Island fantail, New Zealand kingfisher, Pacific swallow, Australasian harrier, white-faced heron, pukeko, paradise shelduck, black-backed gull, Australasian pied stilt (SSBI P07/H026, 1978, 2000).

Significance

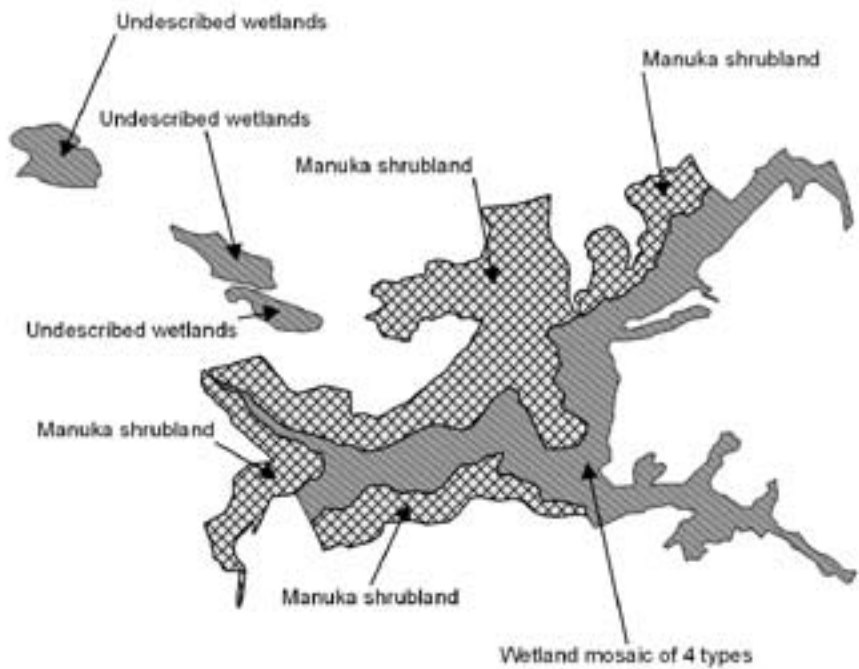
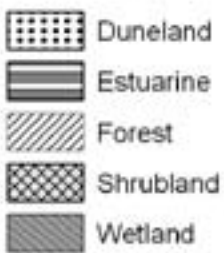
As the largest remaining wetland in the Kaipara ED (Northland), this is an extremely important site, notable for its size, diversity, intactness, and presence of threatened and regionally significant species. Weeds are a feature of the north-facing hillslope shrubland (which has probably been burnt many times in the past) and the western edge of the wetland, but much of it is virtually weed-free. Contains 59.1 ha of Acutely Threatened land environment A5.1b, 21.1 ha of Chronically Threatened environment A5.2a, and 96.7 ha of At Risk environments. A6.1b and A6.1c. Some 41% (67.8 ha) of the site is already protected in Omamari GPWMR, administered by DOC. Site for four representative ecological units: (a) Manuka shrubland on hillslope, (b) Harakeke-pampas flaxland on alluvium, (c) *Baumea arthropphylla* sedgeland on alluvium, and (e) Raupo reedland on alluvium.



P07/127 Omamari Government Purpose Wildlife Management Reserve and Surrounds



Habitat Type



Aerial photography flown 2002

OMAMARI ROAD GRASSLAND AND WETLAND

Survey no.	P07/130
Survey date	14 December 2006
Grid reference	P07 715 920
Area	115.9 ha
Altitude	0-130 m asl

Ecological units

- (a) Mingimingi-pampas shrub tussockland on rear dunes (99%)
- (b) *Eleocharis sphacelata*-*E. acuta* reedland on alluvium (< 1%)
- (c) Open water in dune lake (< 1%)

Landform/geology

Mid-late Pleistocene (Karioitahi Group) consolidated dune sand, cliffed on seaward side. Holocene unconsolidated sand dunes at mouth of Omamari Stream, and locally perched on top of Pleistocene dune units.

Vegetation

The Omamari Road rear dune faces, bounded by Omamari Road, have continuous, dense vegetation cover (no exposed ground) 2-3 m high. Largely unfenced, most of the site is too steep for stock access.

- (a) Shrubland consists of common mingimingi and pampas with frequent bracken, hangehange, knobby clubrush, harakeke, coastal toetoe, and brush wattle, and occasional pohuehue, tree lupin, oioi, coastal karamu, *Baumea juncea*, mamaku, Hebe stricta, berry heath, manuka, giant umbrella sedge, tauhinu, harestalk, pohutukawa, marram, sand coprosma, radiata pine, and *Pimelea urvilleana*.
- (b) Vegetation consists of frequent *Eleocharis sphacelata* and *E. acuta*, occasional oioi, *Baumea juncea*, *Isolepis distigmatosa*, *Centella uniflora*, *Myriophyllum propinquum*, *Baumea arthropphylla*, swamp millet, *Ranunculus* species, lotus, and *Lobelia anceps*.
- (c) A portion at the southern end, fenced and protected by local Maori, contains a small lake (P07 719 911). Aquatic vegetation consists of occasional *Potamogeton cheesemanii*.

Significant flora

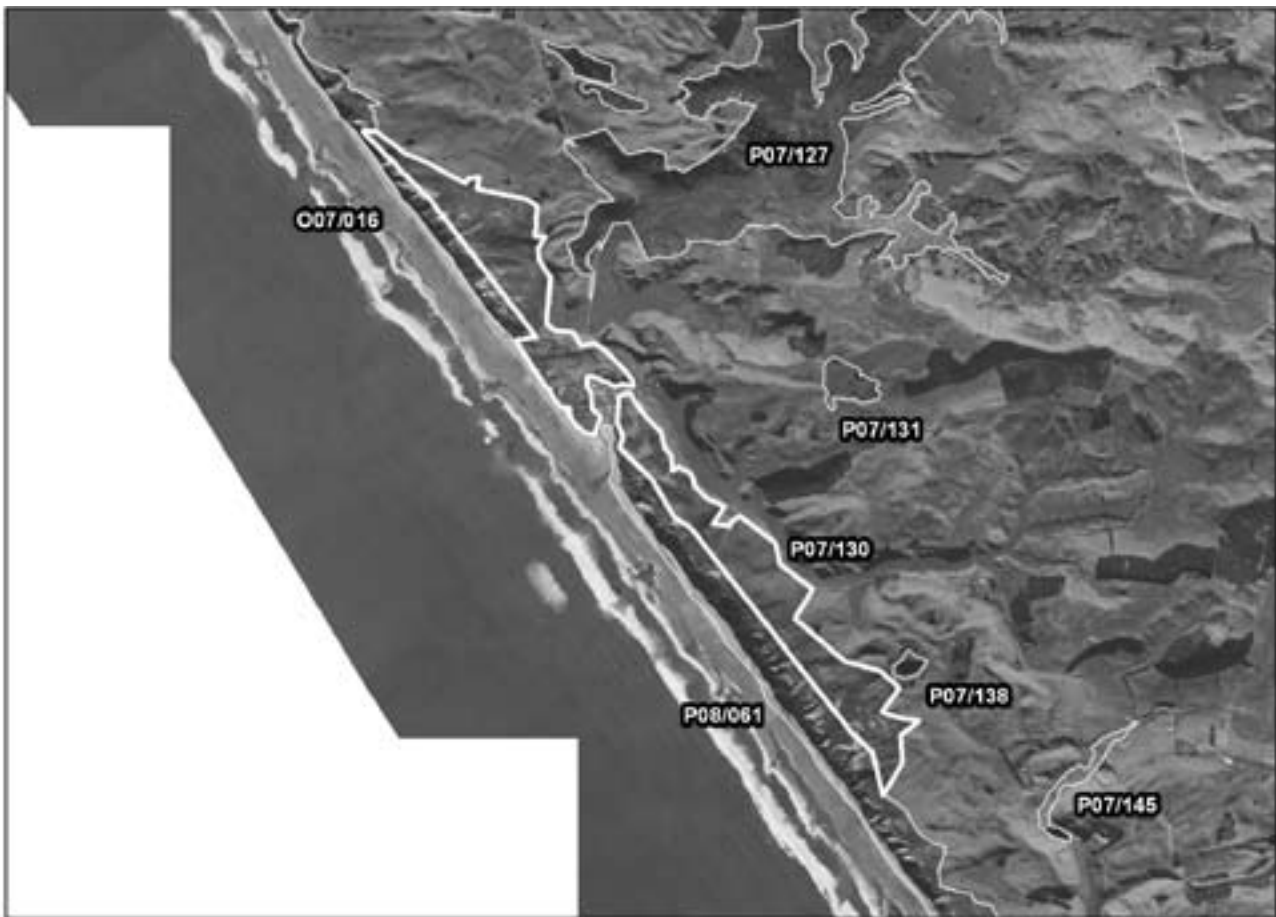
Sand coprosma (Regionally Significant), recorded in this survey.

Fauna

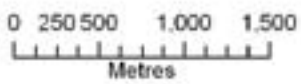
Australasian bittern (Nationally Endangered), recorded in 2008 (A. Booth, DOC, pers. comm.)

Significance

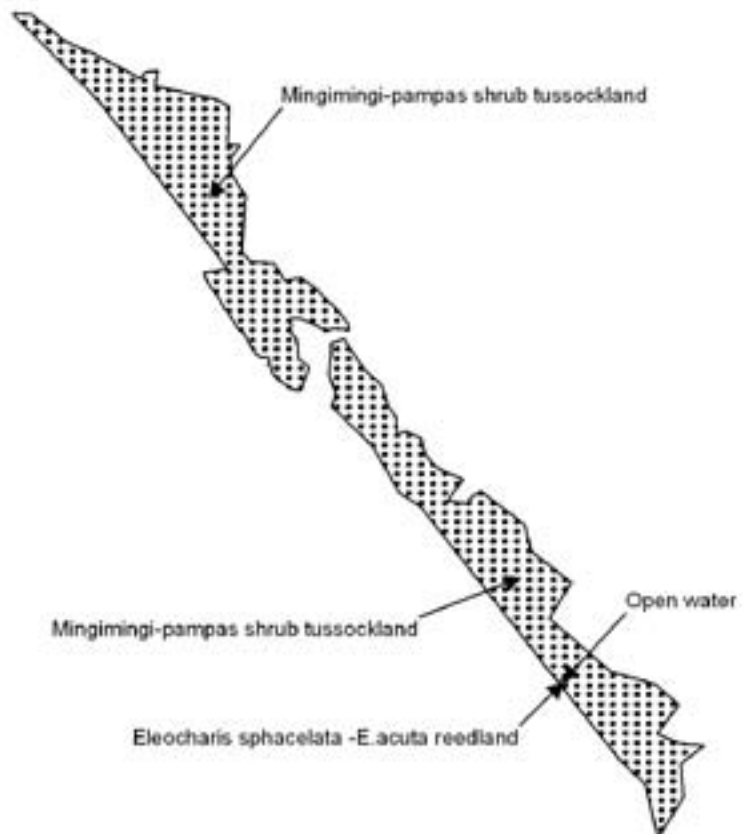
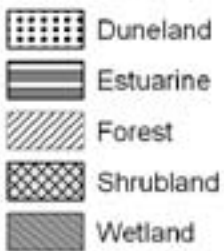
A significant representative tract of rear dune coastal vegetation. A threatened bird species has been recorded. Contains 2.4 ha of Acutely Threatened land environment A5.1b, 2.1 ha of Chronically Threatened environment A7.3a, and 111.3 ha of At Risk environment G1.1c. Site for one representative ecological unit: (b) *Eleocharis sphacelata*-*E. acuta* reedland on alluvium.



P07/130 Omamari Road Grassland and Wetland



Habitat Type



Aerial photography flown 2002

NEW LOVE AIRSTRIP WETLAND

Survey no.	P07/131
Survey date	15 December 2006
rid reference	P07 722 929
Area	5.8 ha
Altitude	70-90 m asl

Ecological units

- (a) Raupo reedland on alluvium
- (b) *Eleocharis sphacelata* reedland on alluvium
- (c) *Baumea articulata* reedland on alluvium
- (d) *Eleocharis sphacelata-Bolboschoenus* sp. reedland on alluvium (all wetland types together comprise 100%)

Landform/geology

Swamp deposits ponded in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield.

Vegetation

This wetland site is fenced and has a ditch running around it on all sides. It is of good quality and is self-contained. The four types were not mapped separately.

- (a) Raupo reedland consists of abundant raupo.
- (b) *Eleocharis sphacelata* reedland consists of abundant *E. sphacelata*, frequent alligator weed and occasional *Potamogeton cheesemanii*, giant umbrella sedge, *Isolepis prolifer*, Mercer grass, and burr-reed.
- (c) *Baumea articulata* reedland consists of abundant *Baumea articulata*.
- (d) *Eleocharis sphacelata-Bolboschoenus* sp. reedland consists of abundant *Eleocharis sphacelata* and common *Bolboschoenus species*.

Significant flora

Burr-reed (Regionally Significant), recorded during this survey.

Fauna

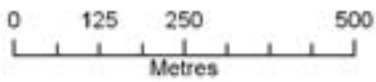
None noted.

Significance






A small but significant fenced wetland with a regionally significant plant species. Potential habitat for threatened wetland bird species such as spotless crane (Sparse). Contains 5.7 ha of Chronically Threatened land environment A5.2a, and 0.2 ha of At Risk environment A6.1b.

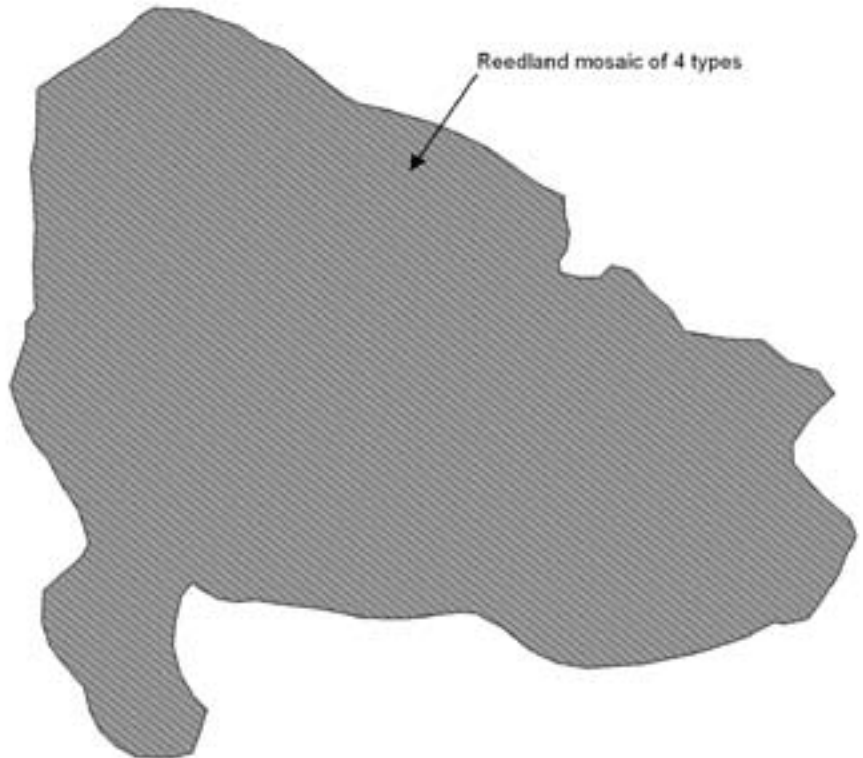


P07/131 Newlove Airstrip Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

MAITAHİ WETLAND SCIENTIFIC RESERVE AND SURROUNDS

Survey no.	P07/133
Survey date	29 November 2006
Grid reference	P07 780 925
Area	323 ha
Altitude	20-90 m asl

Ecological units

- (a) Manuka-prickly hakea shrubland on hillslopes and ridges (69%)
- (b) Raupo reedland on alluvium (7%)
- (c) Manuka-harakeke-tangle fern shrubland on alluvium (12%)
- (d) *Schoenus brevifolius* sedgeland on alluvium (12%)

Landform/geology

Hillslopes eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, and Holocene alluvial and swamp deposits on valley floor.

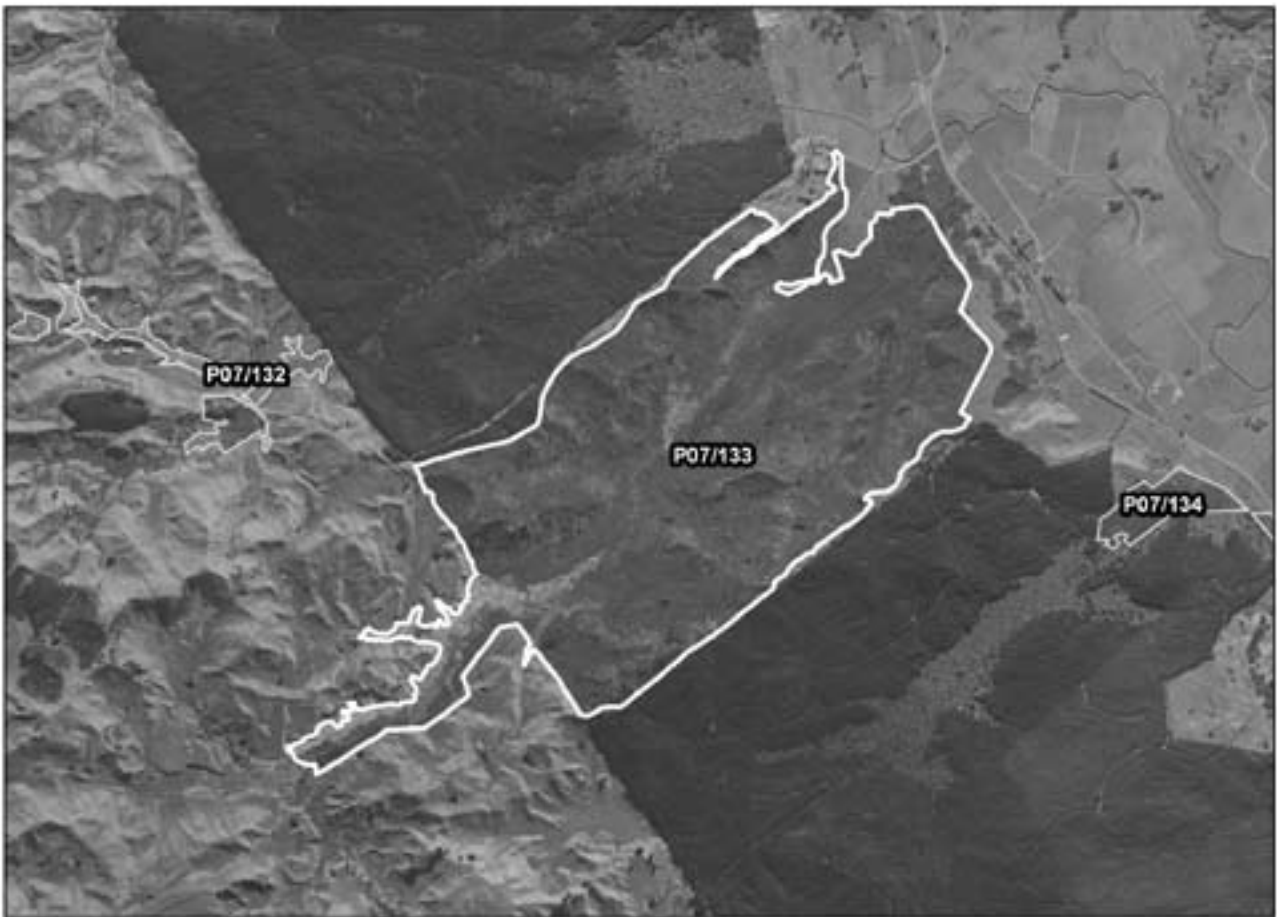
Vegetation

Maitahi Wetland SR and Surrounds encompasses a large part of two valley sides and a valley floor. It is surrounded by pine plantation on the northern and southern sides, farmland to the west, and a subdivision development to the east. Pines have been felled in the reserve and possum control through poisoning has taken place. Near the road edge on the southern side beehives are in use. There has been some damage in the reserve by four-wheel drive vehicles. Pampas has invaded some of the wetland.

- (a) Manuka and prickly hakea are common in the canopy, mingimingi, tangle fern, kumeraho, and Spanish heath are frequent, and akepiro, hangehange, kanuka, mamaku fern, tauhinu, bog rush, and *Pimelea prostrata* are occasional.

The manuka-prickly hakea shrubland is a mosaic of at least four site variations






- (1) On exposed rocky bluffs and ledges, an extremely low canopy of manuka, kanuka, and prickly hakea occurs with clumps of moss and lichen.
 - (2) On flat crests with poor drainage, tangle fern is abundant and *Epacris pauciflora* frequent. Wire rush is locally present.
 - (3) On hillslopes, the main canopy consists of tall prickly hakea, manuka, mingimingi, and akepiro.
 - (4) In gullies, occasional hangehange, mamaku, and manuka comprise the canopy.
- (b) Raupo reedland includes patches of *Baumea arthrophylla*.
 - (c) The manuka shrubland comprises a transition zone between raupo reedland and the *Schoenus*-harakeke wetland. Manuka, harakeke, and

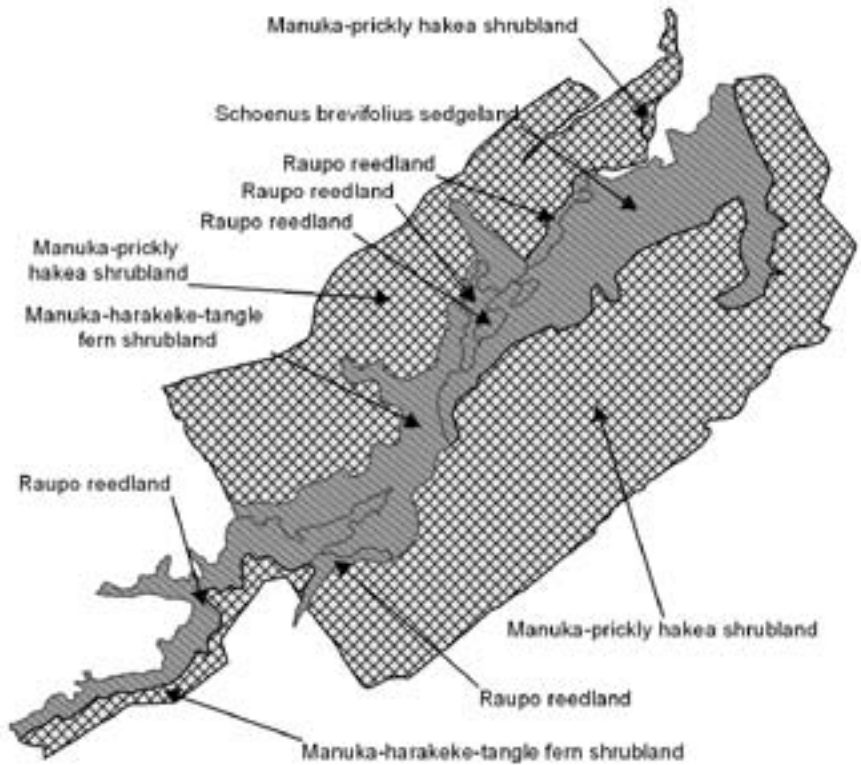


P07/133 Maitahi Wetland Scientific Reserve and Surrounds



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

tangle fern are all common in the canopy with frequent *Dracophyllum lessonianum* and occasional *Schoenus brevifolius* also present.

- (d) The canopy of the sedgeland comprises abundant *Schoenus brevifolius*, frequent *Baumea arthrophylla* and harakeke, and occasional manuka. Patches of *Baumea juncea*, *Baumea rubiginosa*, and *Baumea teretifolia* also occur.

Significant flora

Calochilus aff. herbaceus (Nationally Critical) (1999, AK 241957). Pomaderris phyllicifolia (1999, AK 286661), *Phylloglossum drummondii* (1999, AK 286617), yellow bladderwort (1999, AK 292355), are all Nationally Endangered. *Dianella haemata* (noted during the present survey) is in Serious Decline, and *Utricularia delicatula* (1999, AK 292388), marsh fern (2000, AK 287536) and *Schoenus carsei* (1999, AK 246919), are in Gradual Decline. Domed sun orchid (SSBI P07/H056) is Sparse. *Epacris pauciflora* (SSBI P07/H056), wire rush (2000, AK 248062), *Astelia grandis* (2006, AK 297736), burr-reed (SSBI P07/H056), ladies tresses (SSBI P07/H056), *Ranunculus urvilleanus* (2000, AK 282128), and *Utricularia dichotoma* (SSBI P07/H056), are all Regionally Significant.

Fauna

Auckland green gecko (Gradual Decline) (SSBI P07/H056). Black mudfish (Gradual Decline), shortfin eel (NIWA 2007). Australasian bittern (Nationally Endangered), North Island fernbird (Sparse), pukeko, grey warbler (SSBI P07/H056, 1994). Pacific swallow.

Significance

This is the most significant mesotrophic-oligotrophic wetland remaining in Northland, because of its size, intactness, and the range of wetland types that it supports. It is also of very high importance because it is the largest area of 'gumland' remaining in the ED. Its large size and shape (part of a catchment) mean much of it is effectively self-buffered. It supports an impressive range of threatened and regionally significant plant species, including what appears to be the only extant population of *Schoenus carsei* (Gradual Decline) in Northland. In terms of fauna, it supports the only known viable population of black mudfish (Gradual Decline) in the ED and indeed on the west coast of Northland (M. McGlynn, DOC, pers. comm.). The introduced pest fish gambusia is present (R. Parrish, pers. comm.). Contains 103.1 ha of Acutely Threatened land environment A5.1b, 126.6 ha of Chronically Threatened environment A5.2a, and 92.8 ha of At Risk environment A6.1b. Some 72% (231 ha) of the site is already protected in Maitahi Wetland SR, administered by DOC. Site for two representative ecological units: (c) Manuka-harakeke-tangle fern shrubland on alluvium, and (d) *Schoenus brevifolius* sedgeland on alluvium.

FRITH ROAD NORTHERN DAIRYLANDS FOREST

Survey no.	P07/135
Survey date	29 November 2006
Grid reference	P07 825 925
Area	70 ha
Altitude	20–80 m asl

Ecological units

- (a) Kahikatea-ti kouka-*Coprosma propinqua*-harakeke shrub wetland on alluvium (13%)
- (b) Kanuka forest on hillslope (4%)
- (c) Kahikatea forest on alluvium (32%)
- (d) Undescribed shrubland/forest on hillslope (52%)

Landform/geology

Hillslopes on undifferentiated Mangakahia Complex sediments, and overlying early Pleistocene (Awhitu Group) cemented dune sands and associated facies, with adjoining Holocene alluvial and swamp deposits on the flood plain of the Kaihu River.

Vegetation

This site is bordered to the north by the Kaihu River and to the south by Frith and Opanake Roads. Neither forest nor wetland are fenced, resulting in pugging by cattle in wetter areas.

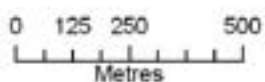
- (a) The shrub wetland canopy consists of harakeke, ti kouka, kahikatea, and *Coprosma propinqua*, with frequent *Baumea arthropphylla* and occasional *Carex virgata* and small-leaved mahoe.
- (b) The hillslope forest comprises abundant kanuka, frequent totara, kowhai, and emergent radiata pine, and occasional mapau, houhere, kaikomako, rewarewa, and towai.
- (c) Most of the alluvial forest is dominated by kahikatea. Ti kouka and kowhai occur occasionally. The understorey contains harakeke, small-leaved mahoe, round-leaved coprosma, *Coprosma rigida*, *C. rhamnoides*, *C. parviflora*, swamp coprosma, pigeonwood, small-leaved milk tree, nikau, and supplejack. Ground cover consists of alligator weed with herb patches containing *Viola lyallii*, water buttercup, *Hydrocotyle* spp and *Centella uniflora*.
- (d) There is an area of undescribed shrubland to the north.

Significant flora

Coprosma parviflora, *C. rigida*, swamp coprosma, round-leaved coprosma, kaikomako, and *Viola lyallii*, all Regionally Significant, recorded during this survey.



P07/135 Frith Road Northern Dairylands Forest



Habitat Type

- Duneland
- Estuarine
- Forest
- Shrubland
- Wetland



Aerial photography flown 2002

Fauna

Australasian harrier, New Zealand kingfisher, grey warbler, tui, shining cuckoo.

Significance

A large and diverse site, containing far and away the largest and best example of kahikatea forest in the ED. Contains 31.1 ha of Chronically Threatened A5.2a and 39.9 ha of At Risk land environment G3.1b. Site for two representative ecological units: (a) Kahikatea-ti kouka-*Coprosma propinqua*-harakeke shrub wetland on alluvium, and (c) Kahikatea forest on alluvium.

MANGAKAHIA FOREST WETLAND

Survey no.	P07/140
Survey date	28 November 2006
Grid reference	P07 816 912
Area	6.6 ha
Altitude	20 m asl

Ecological unit

(a) Manuka-*Baumea rubiginosa*-*B.tenax* shrub sedgeland on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits within valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies.

Vegetation

The site comprises

(a) manuka-*Baumea rubiginosa*-*B. tenax* shrub sedgeland on poorly-drained alluvium in the lower reaches of an un-named tributary of the Kaihu River. Manuka is abundant and *Baumea rubiginosa* and *B. tenax* are common. A range of other native wetland species, such as swamp coprosma and swamp millet, is present.

Significant flora

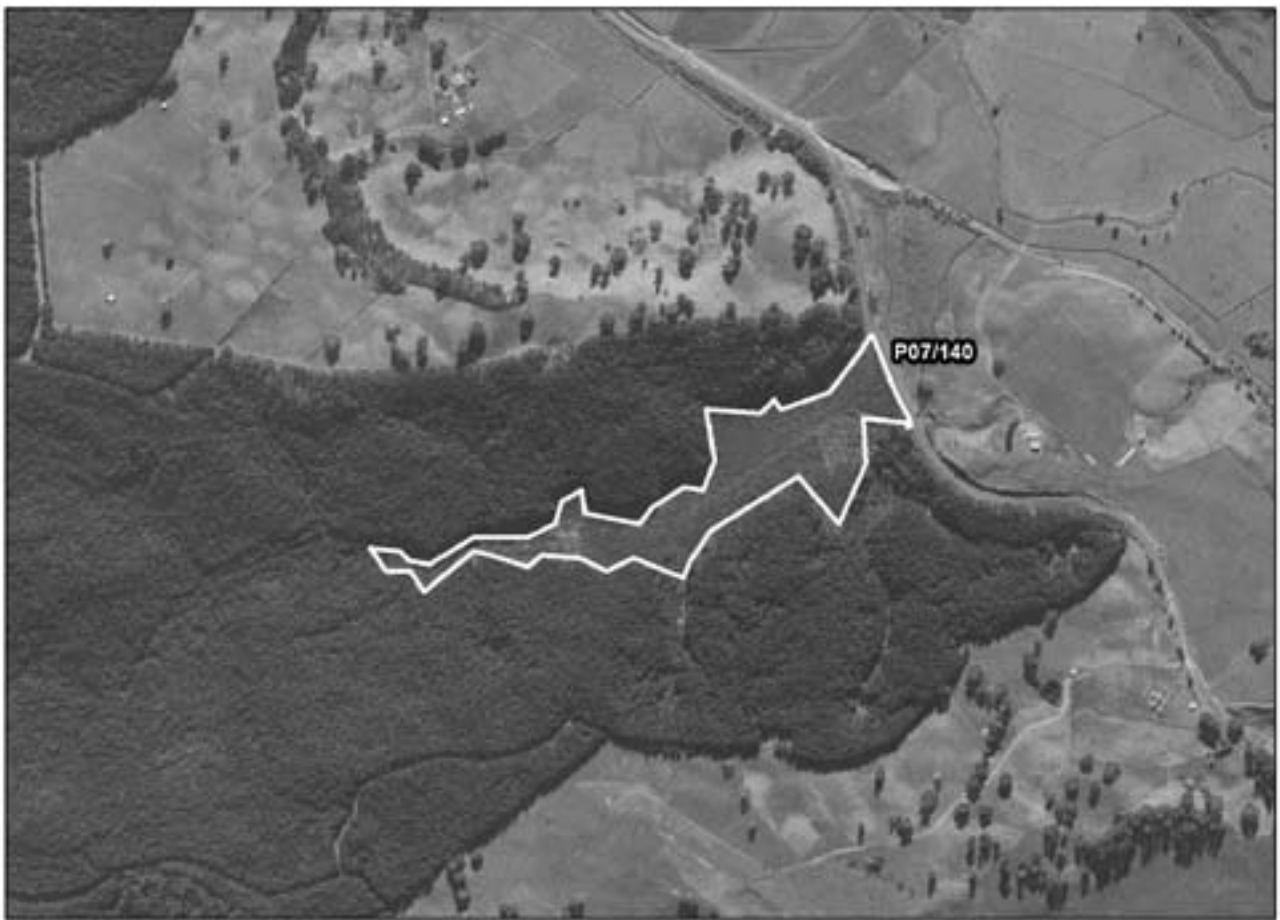
Swamp coprosma (Regionally Significant), recorded during this survey.

Fauna

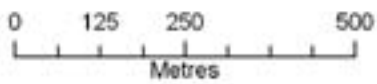
Grey warbler.

Significance






An excellent intact representative wetland, still relatively weed-free because of buffering by exotic plantation on three sides. Contains 0.6 ha of Acutely Threatened land environment A5.1b and 0.8 ha of Chronically Threatened environment A5.2a. The single site, (a) Manuka-*Baumea rubiginosa*-*B. tenax* shrub sedgeland on alluvium, is representative.

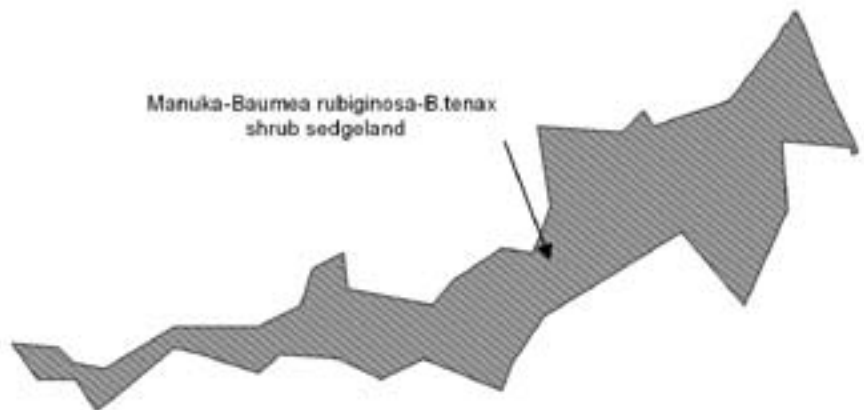


P07/140 Mangakahia Forest Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

ROTU STREAM FOREST

Survey no. P07/141
Survey date 29 November 2006
Grid reference P07 825912
Area 10.1 ha
Altitude 20 m asl

Ecological unit

(a) Kahikatea-houhere-kowhai-ti kouka forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Kaihu River.

Vegetation

This remnant of secondary forest between Rotu Stream and the Kaihu River lies in a highly modified landscape and has three deep drains around its edges. The natural flooding regime is restricted by channelisation of the river. The remnant is fenced but a cattle race runs along its border and it shows evidence of cattle pugging and trampling throughout. The canopy is formed by common kahikatea, kowhai, ti kouka, and houhere, frequent mahoe, small-leaved milk tree, kaikomako, and nikau and occasional tree privet and harakeke. Pampas is scattered around the margins. The understorey comprises small-leaved mahoe, *Coprosma rigida*, round-leaved coprosma, *C. propinqua*, small-leaved milk tree, and poataniwha. Ground cover is dominated by tradescantia and alligator weed, with pockets of native herbs and creeping plants, e.g., *Viola lyallii*, *Hydrocotyle spp.*, *Centella uniflora*, and *Doodia mollis*.

Significant flora

Doodia mollis (Sparse), recorded during this survey. *Coprosma rigida*, round-leaved coprosma, kaikomako, and *Viola lyallii* (all Regionally Significant), recorded during this survey.

Fauna

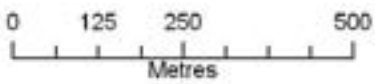
New Zealand pigeon (Gradual Decline), New Zealand kingfisher, silvereye, grey warbler, North Island fantail, shining cuckoo.

Significance






Alluvial forest is relatively rare in this Ecological District and throughout Northland. Contains 10.3 ha of At Risk land environment G3.1b. The single ecological unit, (a) Kahikatea-houhere-kowhai-ti kouka forest on alluvium, is representative.

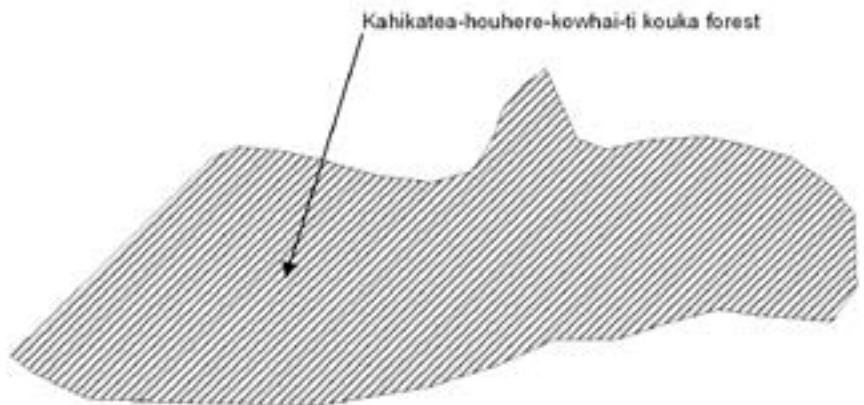


P07/141 Rotu Stream Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

OPANAKE ROAD MORRIS FOREST

Survey no.	P07/142
Survey date	30 November 2006
Grid reference	P07 834 912-Alluvial forest P07 836 904-Hillslope forest
Area	10.3 ha
Altitude	20 m asl

Ecological units

- (a) Kahikatea forest on alluvium (67%)
- (b) Kauri-taraire-tawa forest on hillslope (33%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Kaihu River.

Vegetation

This remnant lies between Opanake Road and the Kaihu River. The forest is unfenced and shows evidence of cattle browsing, trampling, and pugging. Ti kouka and harakeke border the river.

- (a) Alluvial forest forms a fringe around the drier conifer-broadleaved forest. Most of it is dominated exclusively by kahikatea. Ti kouka, totara, pukatea, and kowhai occur occasionally. The subcanopy consists of pigeonwood, houhere, pukatea, and mahoe, the understorey of swamp coprosma, karamu, *Coprosma propinqua*, *C. rhamnoides*, *C. areolata*, *C. rigida*, *C. parviflora*, small-leaved mahoe, small-leaved milk tree, kaikomako, and hangehange. The ground layer is infested with tradescantia but contains occasional swamp kiokio and lady fern.
- (b) The kauri-taraire-tawa forest developed from kanuka forest with some relictual kanuka surviving. The canopy is formed by kauri, tawa, and taraire, with frequent matai, totara, kanuka, and tanekaha, and occasional titoki, rimu, puriri, and kahikatea. Subcanopy and shrub tiers are largely absent except for occasional nikau. Tradescantia has invaded the remnant and covers almost all the ground with occasional water fern and bracken in canopy gaps.

Significant flora

Kaikomako, *Coprosma parviflora*, *C. rigida*, swamp coprosma (all Regionally Significant), recorded during this survey.

Fauna

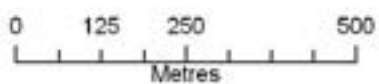
New Zealand kingfisher, grey warbler, shining cuckoo, North Island fantail.

Significance






A representative alluvial forest remnant, a habitat type that is relatively rare in this ED and throughout Northland. Contains 1.3 ha of Acutely Threatened land environment A5.1b and 7.8 ha of At Risk environment

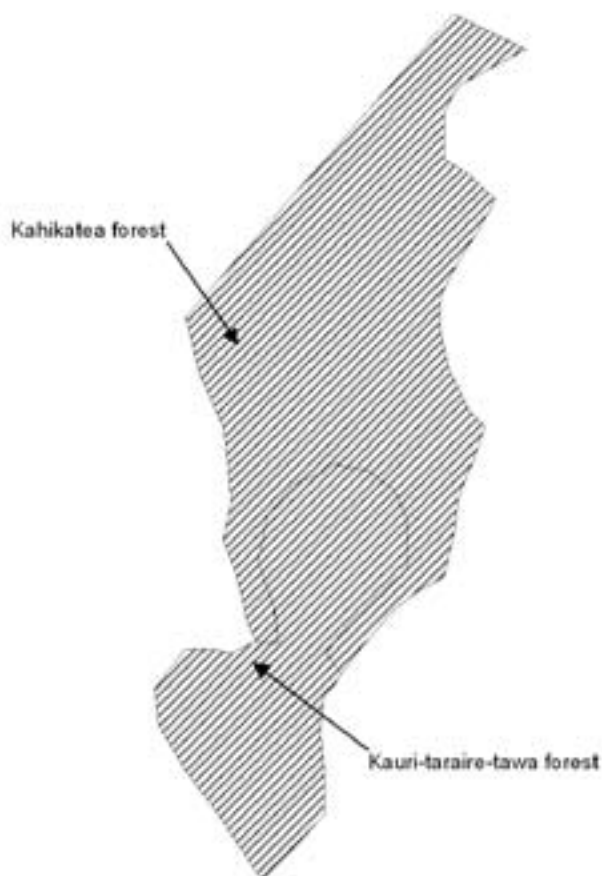


P07/142 Opanake Road Morris Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

G3.1b. A very small proportion of this site (0.05 ha) is already protected under QEII National Trust covenant. Site for one representative ecological unit: (b) Kauri-taraire-tawa forest on hillslope.

BABYLON SMITH WETLAND

Survey no. P07/145
Survey date 14 December 2006
Grid reference P07 737 918
Area 5.5 ha
Altitude 20-60 m asl

Ecological units

- (a) Raupo reedland on alluvium (89%)
- (b) Open water (11%)

Landform/geology

Holocene alluvial and swamp deposits within valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, and mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunes.

Vegetation

This wetland system has been dammed at the western end, creating a lake. The site is unfenced but surrounded by extremely steep hillslopes that prevent stock access. The wetland is of moderate to good quality, and surrounding hillslopes have been recently planted with native trees such as rimu and pohutukawa.

- (a) Wetland vegetation consists of abundant raupo, frequent *Isolepis distigmata*, rushes, and lotus, and occasional pampas, white clover, Yorkshire fog, water purslane, *Hydrocotyle pterocarpa*, burr-reed, swamp millet, *Eleocharis acuta*, duckweed, *Potamogeton ochreatus*, giant umbrella sedge, harakeke, and ti kouka.
- (b) Open water.

Significant flora

Burr-reed (Regionally Significant), recorded during this survey.

Fauna

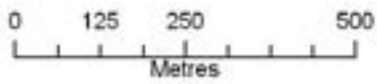
Australasian bittern (Nationally Endangered), spotless crane (Sparse), North Island fantail, Pacific swallow, Australasian harrier, pukeko, Australasian pied stilt (SSBI P07/H029, 1978). Paradise shelduck.

Significance






Wetlands are a threatened habitat type in Northland. This site has effective topographic protection from grazing, and its reasonable size enhances its ecological value. Historical records of threatened species. Contains 3.2 ha of Acutely Threatened land environment A5.1b and 2.3 ha of Chronically Threatened environment A7.3a.

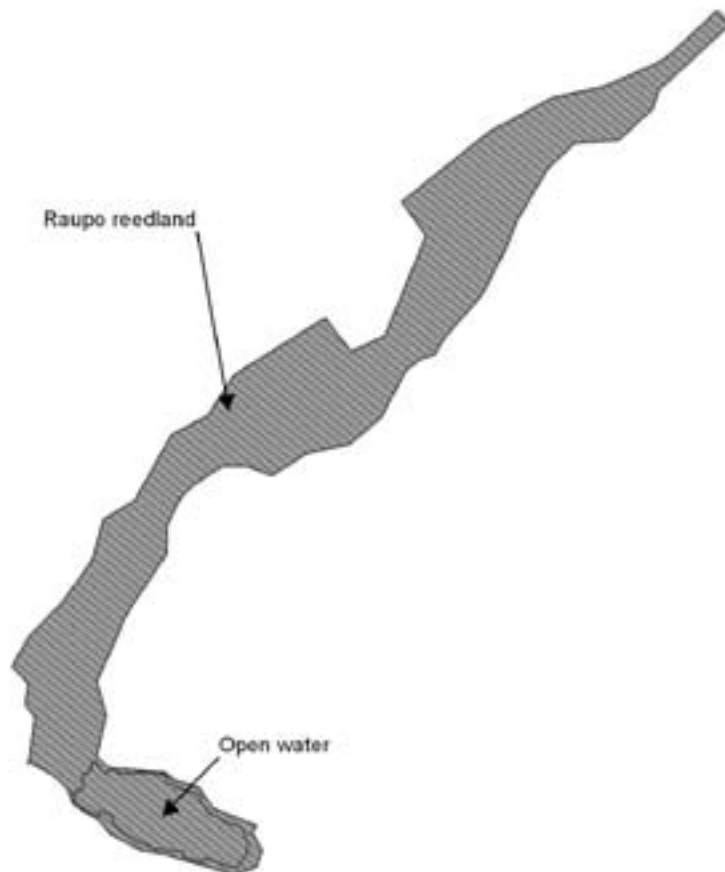


P07/145 Babylon Smith Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

NRC OPANAKE ROAD RESERVE FOREST

Survey no. P07/148
Survey date 30 November 2006
Grid reference P07 842 906
Area 2 ha
Altitude 20 m asl

Ecological unit

(a) Matai forest on hillslope (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Kaihu River.

Vegetation

Comprising young secondary forest, this reserve is situated south of Opanake Road and north of the Kaihu River.

(a) Matai is common throughout the canopy with frequent rimu, white maire, tanekaha, totara, kanuka, and mamangi, and occasional kauri and kowhai. The subcanopy comprises mamangi, tawa, white maire, nikau, ponga, and willow-leaved maire, the understorey nikau and matai. The ground layer consists of pockets of tradescantia, tree seedlings and mixtures of ferns such as *Blechnum fraseri*. A variety of lianes, including supplejack, mangemange, and New Zealand jasmine, is present.

Significant flora

Willow-leaved maire (Gradual Decline), recorded during this survey.

Fauna

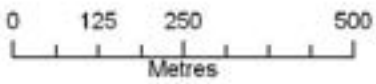
Grey warbler.

Significance






An excellent site, fenced and in very good condition, supporting threatened and regionally significant plant species. The only such stand of a very rare forest type in the ED, Northland, and New Zealand (NZPCN 2008). Contains 2 ha of At Risk land environment G3.1b. Nearly half the site (0.9 ha) is already protected under QEII National Trust covenant. The single ecological unit, (a) Matai forest on hillslope, is representative.

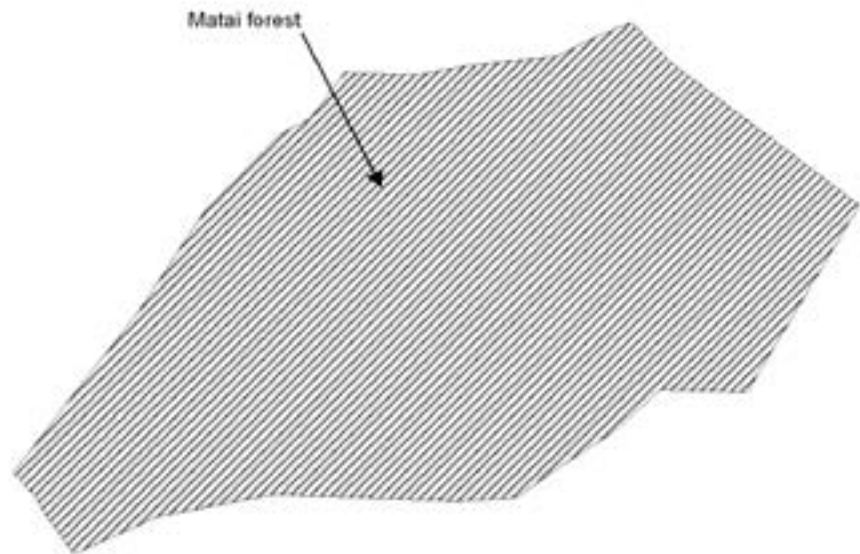


P07/148 NRC Opanake Road Reserve Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

OPANAKE ROAD DAVIDSON FOREST AND SHRUBLAND

Survey no.	P07/150
Survey date	1 December 2006
Grid reference	P07 842 902
Area	5 ha
Altitude	20 m asl

Ecological units

- (a) Manuka shrubland on hillslope (11%)
- (b) Totara-titoki forest on hillslope (75%)
- (c) Kahikatea forest on alluvium (7%)
- (d) Rushland on alluvium (7%)

Landform/geology

Hillslopes on undifferentiated Mangakahia Complex sediments, and overlying early Pleistocene (Awhitu Group) cemented dune sands and associated facies

Vegetation

This indigenous forest and wetland is beside the Opanake Road Morris forest (P07/142). Bordered by Opanake Road and the Kaihu River, the site is partially fenced.

- (a) The shrubland canopy comprises abundant manuka and occasional totara, radiata pine, *Coprosma parviflora*, kanuka, and *C. X cunninghamii*.
- (b) Below the shrubland is totara-titoki forest. The canopy is formed by common totara and titoki, frequent rewarewa, tanekaha and manuka, and occasional kowhai, nikau, kahikatea, kanuka, taraire, puriri, matai, ti kouka and mapau.
- (c) The canopy of the kahikatea forest comprises abundant kahikatea, frequent ti kouka, nikau, pukatea, and swamp maire, and occasional harakeke, and putaputaweta.
- (d) The grazed backswamp has abundant rushes, uncommon alligator weed, umbrella sedge, water pepper, lotus, creeping buttercup, creeping bent, water celery, *Polygonum strigosum*, and cleavers.

Significant flora

Coprosma parviflora (Regionally Significant), recorded during this survey.

Fauna

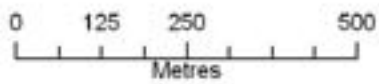
Grey warbler, North Island fantail, tui, New Zealand kingfisher, pukeko (SSBI P07/H036, 1978).

Significance






An excellent site with a range of contiguous plant communities on several landforms, albeit in a relatively small area. Contains 1.6 ha of Acutely

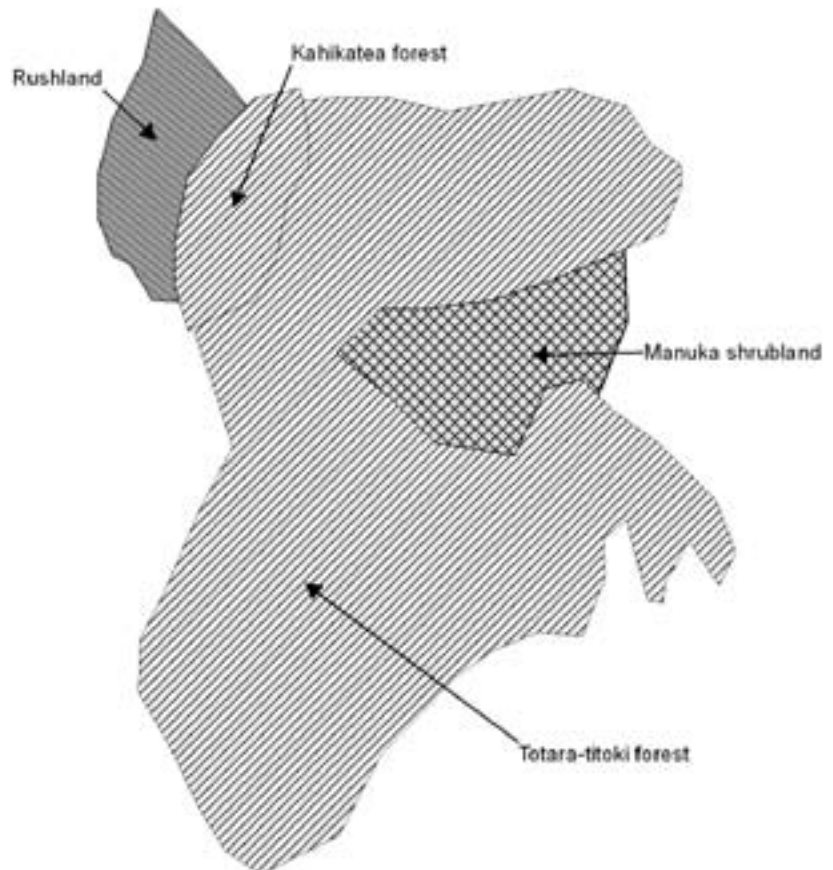


P07/150 Opanake Road Davidson Forest and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Threatened land environments A5.1b and A5.1c, and 2.9 ha of Chronically Threatened environments A6.1b and G3.1b. Site for three representative ecological units: (a) Manuka shrubland on hillslope, (b) Totara-titoki forest on hillslope, and (c) Kahikatea forest on alluvium.

LONG GULLY WETLAND AND SHRUBLAND

Survey no. P07/153
Survey date 15 December 2006
Grid reference P07 751 879 (west), P07 757 884 (east)
Area 38 ha
Altitude 20–70 m asl

Ecological units

- (a) *Baumea arthropphylla*-*B. juncea* sedgeland on alluvium
- (b) Raupo reedland on alluvium
- (c) *Baumea articulata* reedland on alluvium
- (d) *Eleocharis sphacelata* reedland on alluvium
- (e) *Bolboschoenus fluviatilis* reedland on alluvium (all wetland units together comprise 60%)
- (f) Manuka shrubland on hillslopes (40%)

Landform/geology

Holocene alluvial and swamp deposits within valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, and mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunes.

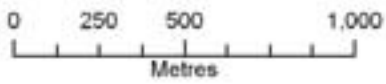
Vegetation

This long valley floor contains a fine mosaic of wetland units, with other units on adjacent lower hillslopes. The valley is surrounded by pasture and radiata pine woodlots. Despite being open to cattle grazing for short periods twice a year at most, the western and central portions of the wetland are in relatively good condition. The eastern end is heavily grazed and divided by Babylon Coast Road. It is in poor condition and heavily infested by weeds.






- (a) *Baumea* sedgeland consists of abundant *B. arthropphylla* and *B. juncea*, and occasional swamp kiokio, lotus, swamp millet, Yorkshire fog, pale rush, *Isolepis distigmata*, *Centella uniflora*, *Pertusaria celata*, and *Lobelia anceps*.
- (b) Raupo reedland consists of abundant raupo, frequent *Eleocharis sphacelata*, and occasional harakeke, oioi, *Carex virgata*, *Baumea arthropphylla*, *B. juncea*, giant umbrella sedge, bracken, harakeke, pampas, manuka, mamaku, Mexican devil, hangehange, tangle fern, karamu, and knobby clubbrush.
- (c) *Baumea articulata* reedland consists of abundant *B. articulata* with occasional pampas, raupo, swamp millet, *B. juncea*, harakeke, Yorkshire fog, Spanish heath, lotus, and swamp kiokio.



P07/153 Long Gully Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

- (d) *Eleocharis sphacelata* reedland consists of abundant *E. sphacelata*, frequent *Baumea juncea*, and occasional harakeke, *Carex virgata*, gorse, and bracken.
- (e) *Bolboschoenus* reedland consists of abundant *B. fluviatilis*, frequent harakeke, raupo and lotus, and occasional tall fescue, Yorkshire fog, and karamu.
- (f) Manuka shrubland on hillslopes consists of abundant manuka, common gorse, frequent brush wattle, and occasional radiata pine, akepiro, berry heath, Spanish heath, mingimingi and karamu.

Significant flora

None noted.

Fauna

Australasian harrier, pukeko.

Significance

The western and central portions of this substantial wetland site contain an impressive array of wetland communities in relatively good condition, well buffered in places by radiata pine woodlots. The value of the eastern end is reduced by stock intrusion and weed invasion. Contains 14.7 ha of Acutely Threatened land environment A5.1b and 22.4 ha of Chronically Threatened environment A5.2a. Site for two representative ecological units: (a) *Baumea arthrophylla*-*B. juncea* sedgeland on alluvium, and (b) Raupo reedland on alluvium.

KAIHU VALLEY WEST SHRUBLAND

Survey no.	P07/157a
Survey date	28 November 2006
Grid reference	P07 827 897
Area	1.5 ha
Altitude	20 m asl

Ecological unit

- (a) Manuka shrubland on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits within valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies.

Vegetation

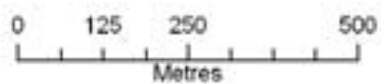
This site occupies poorly drained alluvium in the lower reaches of an unnamed tributary of the Kaihu River. Apart from manuka, other prominent species are harakeke, *Coprosma parviflora*, and pampas.

Significant flora






Coprosma parviflora (Regionally Significant), recorded during this survey.

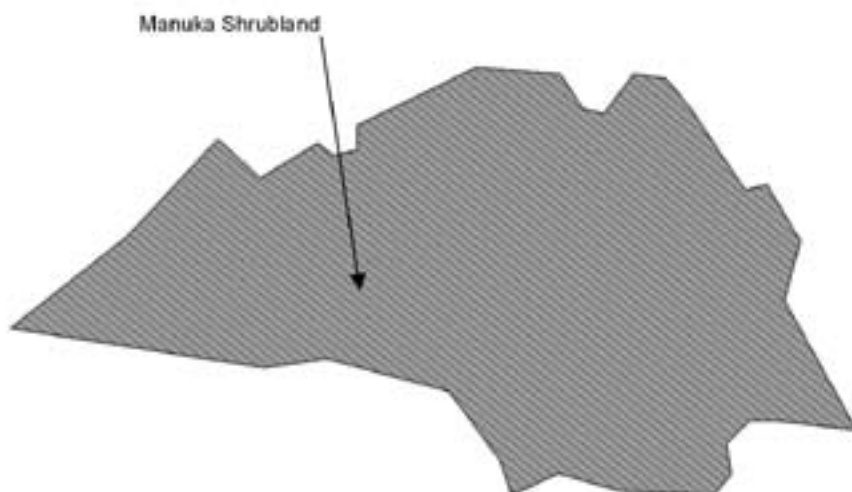


P07/157A Kaihu Valley West Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

Australasian harrier, shining cuckoo, grey warbler, North Island fantail (SSBI P07/H057, 1994)

Significance

A relatively intact wetland, buffered on the western and northern sides by plantation forests. Manuka shrubland on alluvium is a relatively rare ecological unit in this ED. Contains 4.3 ha of Acutely Threatened land environment A5.1b and 0.4 ha of Chronically Threatened environment A5.2a. The single ecological unit, (a) Manuka shrubland on alluvium, is representative.

OPANAKE ROAD SHRUBLAND AND FOREST

Survey no.	P07/158
Survey date	28 November 2006
Grid reference	P07 855 885
Area	9.3 ha
Altitude	20-40 m asl

Ecological units

- (a) Manuka shrubland on hillslope (50%)
- (b) Totara forest on hillslope (10%)
- (c) Kahikatea forest on alluvium (2%)
- (d) Radiata pine treeland on hillslope (38%)

Landform/geology

Hillslopes on undifferentiated Mangakahia Complex sediments, and overlying early Pleistocene (Awhitu Group) cemented dune sands and associated facies

Vegetation

Bordered by Opanake Road on the northern side, these unfenced remnants curve around the hillside towards the Kaihu River.

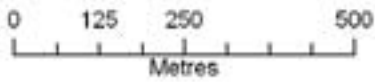
- (a) The canopy of the shrubland is formed by abundant manuka, frequent tangle fern and bracken, and occasional hangehange.
- (b) Totara forest canopy contains abundant totara and occasional mahoe.
- (c) Kahikatea forest contains occasional matai and kowhai in the canopy.
- (d) Radiata pine treeland lies between Opanake Road and the manuka shrubland. Its canopy contains frequent mapau and hangehange and occasional karamu, pigeonwood, and gorse.

Significant flora






None recorded.

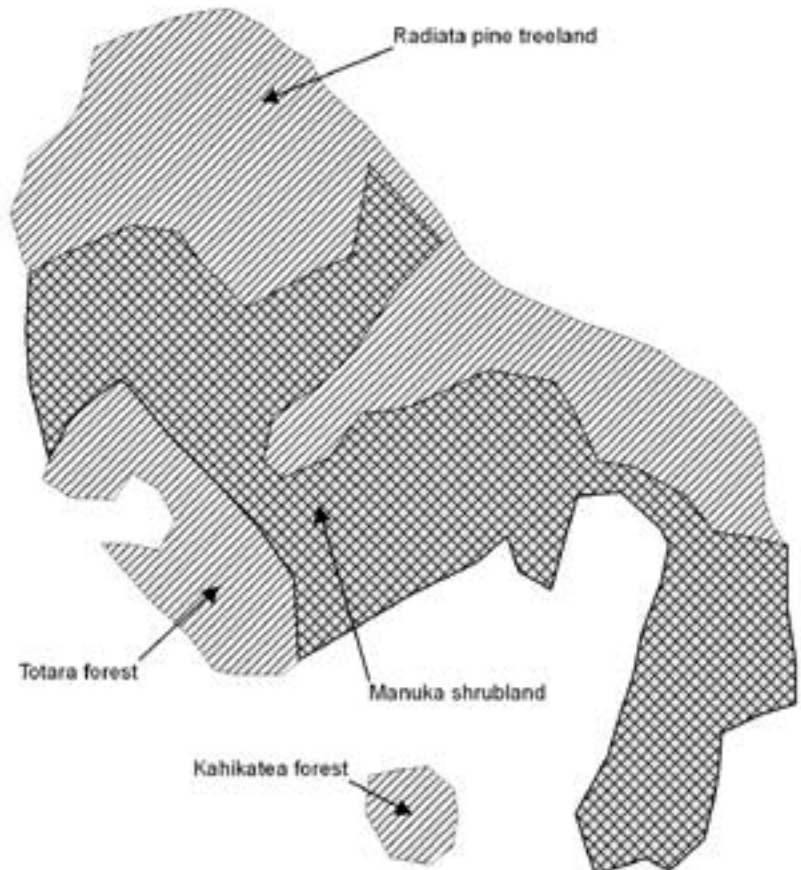


P07/158 Opanake Road Shrubland and Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

New Zealand kingfisher.

Significance

The value of this reasonably large site is enhanced by the presence of several different contiguous lowland plant communities. Contains 3.9 ha of Acutely Threatened land environment A5.1b and 5.4 ha of At Risk environment A6.1b. Site for two representative ecological units: (a) Manuka shrubland on hillslope, and (b) Totara forest on hillslope.

HOANGA ALLUVIAL FOREST FRAGMENT

Survey no. P07/162
Survey date 12 December 2006
Grid reference P07 916 910
Area 5.3 ha
Altitude 10-15 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This site comprises a stand of secondary kahikatea forest in which fencing several decades ago has allowed impressive recovery of understorey and ground layers. Subcanopy species include pukatea, titoki, nikau, ti kouka, and mahoe. The understorey is dominated by *Coprosma areolata*. A road bisects the fragment; the eastern portion has been fenced for longer than the western one, and has denser and better developed lower tiers. There has been some invasion by tree privet along the margins.

Significant flora

None noted.

Fauna

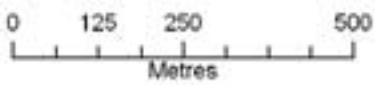
None noted.

Significance






A valuable remnant, one of the best of its kind in the ED, and one of very few in the intensively farmed part of the ED east of the Northern Wairoa River. Contains 5.3 ha of Acutely Threatened land environment A5.1b. The single ecological unit, (a) Kahikatea forest on alluvium, is representative.

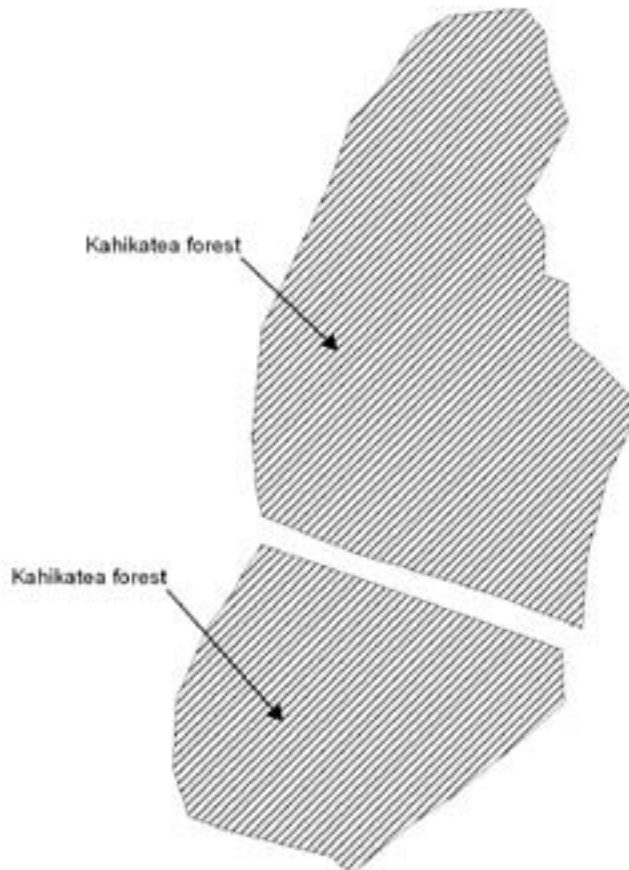


P07/162 Hoanga Alluvial Forest Fragment



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

LOWER KAIHU RIVER FOREST FRAGMENTS

Survey no. P07/169
Survey date 1 December 2006
Grid reference P07 867853 (a), 872 848 (b), 873 845 (c)
Area 5 ha
Altitude 15 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Kaihu River.

Vegetation

The site comprises three patches of secondary kahikatea forest with occasional ti kouka. Patch (a) is currently grazed and has little or no lower tiers. Patches (b) and (c) have recently been fenced and have very sparse subcanopy and understorey tiers with a small range of characteristic large (pukatea), small tree (e.g., small-leaved milk tree, kowhai), and shrub (e.g., small-leaved mahoe, *Coprosma rigida*) species. A variety of woody (e.g., Chinese privet) and herbaceous (e.g., alligator weed) weeds are present. Manchurian rice grass fringes (b) and (c) in places.

Significant flora

Coprosma rigida (Regionally Significant), recorded during this survey.

Fauna

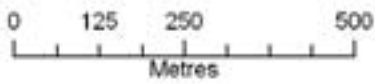
Australasian harrier.

Significance






Alluvial forest is a rare habitat type in the ED and throughout Northland. Despite their small size and fragmented nature, with some weed control, fenced patches (b) and (c) have good potential for restoration; patch (a) would also benefit from fencing. Contains 5.8 ha of Acutely Threatened land environment A5.1b.

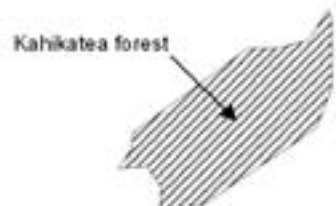


P07/169 Lower Kaihu River Forest Fragments



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

HOKIANGA ROAD RAILWAY TREELAND

Survey no.	P07/169a
Survey date	28 November 2006
Grid reference	P07 875 867 (a), 881 869 (b)
Area	9 ha
Altitude	20 m asl

Ecological units

- (a) Ti kouka-Coprosma propinqua-C. parviflora-pampas treeland on alluvium (78%)
- (b) Ti kouka forest on alluvium (22%)

Landform/geology

Holocene swamp and alluvial deposits within valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies.

Vegetation

The site comprises several tracts of freshwater wetland on poorly drained alluvium, bisected by the Dargaville Branch Railway. The wetland area has been fragmented by subsequent drainage.

- (a) The larger surviving tract, on both sides of the railway line at the western end south of the line, supports ti kouka treeland with frequent *Coprosma propinqua*, *C. parviflora*, and pampas over a range of native (e.g., raupo) and adventive herbs.
- (b) The smaller tract, at the eastern end north of the line, supports denser ti kouka forest over pampas with occasional kahikatea. Stock has access to both areas.

Significant flora

Coprosma parviflora (Regionally Significant), recorded during this survey.

Fauna

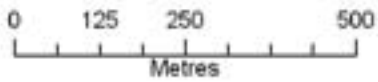
Australasian bittern (Nationally Endangered), North Island fernbird (Sparse), black shag (Sparse), Australasian harrier, grey warbler, silvereye, North Island fantail, Pacific swallow.

Significance






Although there has been substantial weed invasion, the western tract evidently still has a high water table and supports two rare ecological units and some native wetland plant and bird species, including threatened species. Contains 8.5 ha of Acutely Threatened land environment A5.1b and 0.9 ha of At Risk environment A6.1b.

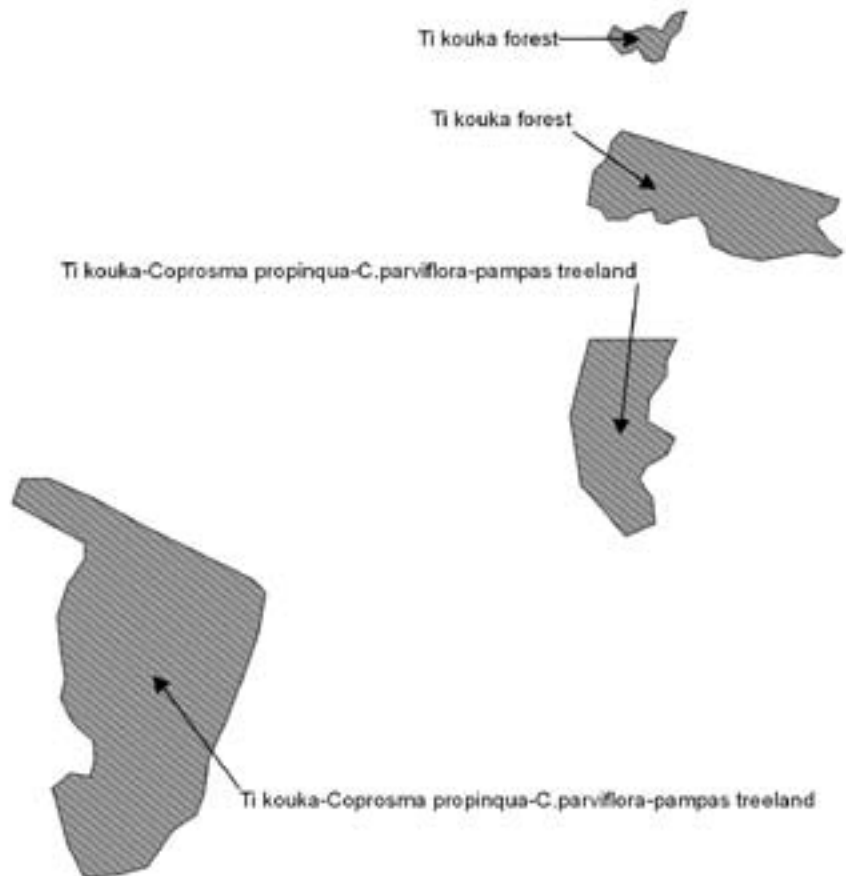


P07/169A Hokianga Road Railway Treeland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

FREIDRICH'S LAKE AND WETLAND

Survey no.	P07/171
Survey date	15 December 2006
Grid reference	P07 792 843
Area	7 ha
Altitude	85-95 m asl

Ecological units

- (a) *Baumea articulata* reedland on alluvium
- (b) *Eleocharis sphacelata* reedland on alluvium
- (c) Open water in dune lake (all units together comprise 100%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield.

Vegetation

This site comprises wetland communities, not mapped separately, dominated either by

- (a) *Baumea articulata* or
- (b) *Eleocharis sphacelata*, around a small lake. The margins are weedy with alligator weed abundant at the western end.
- (c) A small dune lake, fenced in part (Wells et al. 2007).

Significant flora

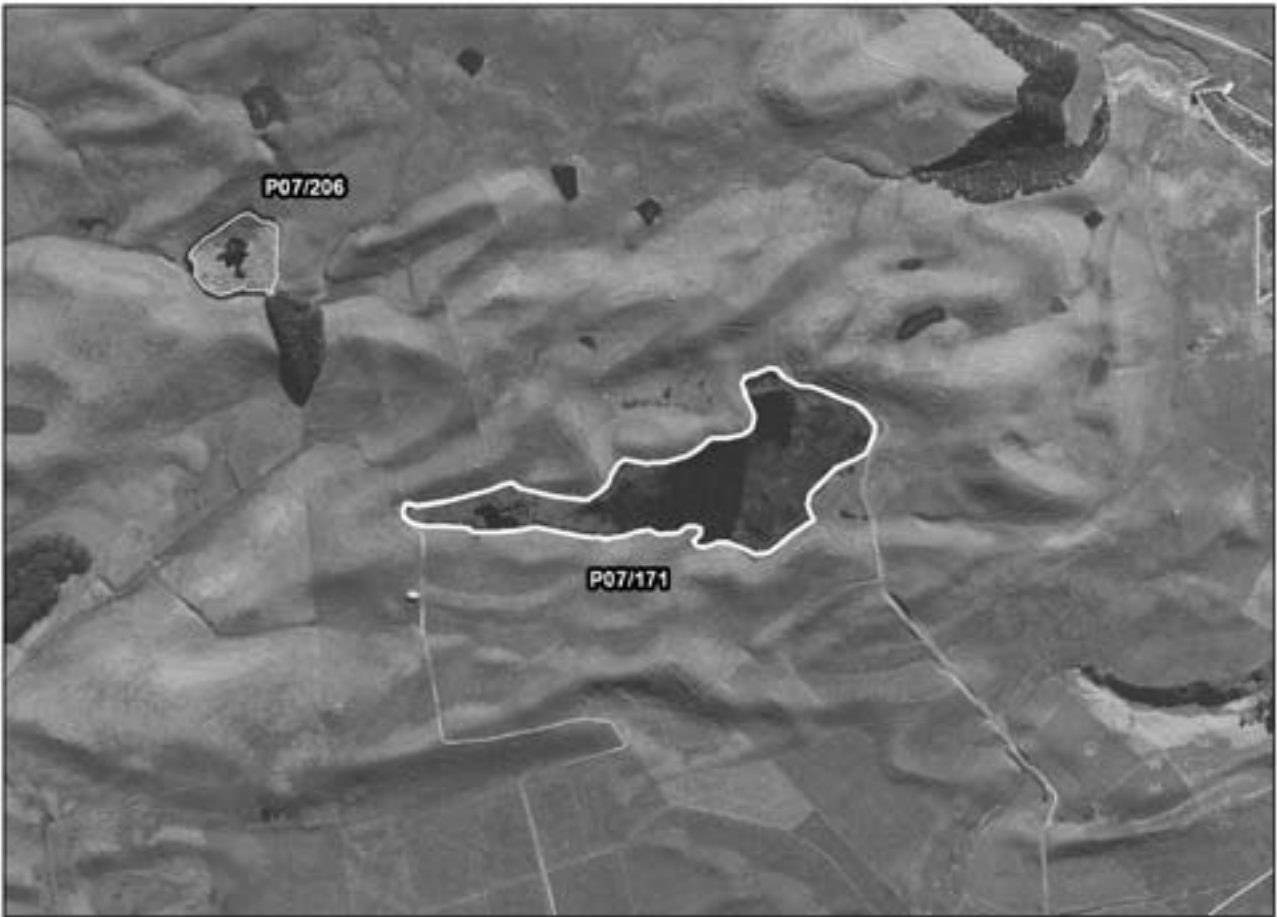
Utricularia australis (Nationally Endangered) was recorded in 2005 (Wells et al. 2007).

Fauna

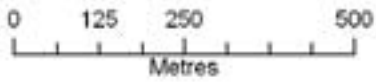
Australasian bittern (Nationally Endangered) (SSBI P07/H033). Grey duck (Nationally Endangered), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse), grey teal (Regionally Significant) (OSNZ surveys 1979-1991). Pacific swallow, pukeko, paradise shelduck, Australasian pied stilt, (SSBI P07/H033). White-faced heron, Australasian shoveler (Regionally Significant), Australasian harrier (OSNZ surveys 1979-1991).

Significance






Although ranked Low by Wells et al. (2007), the site has notable birdlife, including threatened and regionally significant species. The invasive adventive weed *Utricularia gibba* was recorded in 2005. Although its presence was described as minimal, it has the potential to increase in future and eliminate the nationally threatened *U. australis* (Wells et al. 2007). Contains 4.8 ha of Chronically Threatened land environment A7.3a.

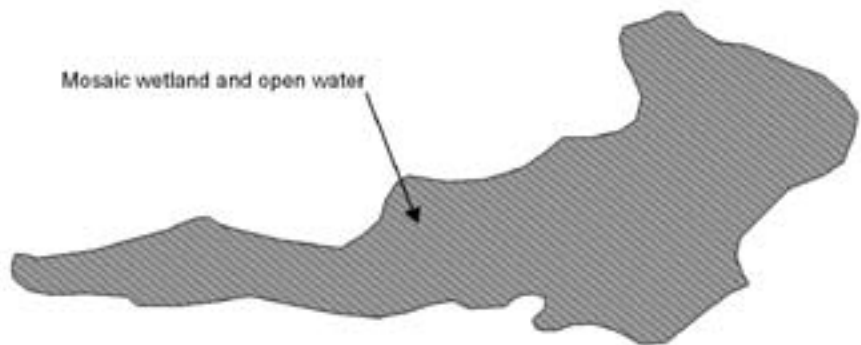


P07/171 Freidrich's Lake and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

DARGAVILLE BRIDGE FOREST

Survey no. P07/173
Survey date 1 December 2006
Grid reference P07 904837
Area 1.8 ha
Altitude 10 m asl

Ecological unit

(a) Kahikatea forest on an alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

On the eastern side of the Northern Wairoa bridge at Dargaville is a small isolated pocket of secondary indigenous forest. The canopy is formed of abundant medium-sized kahikatea with occasional ti kouka, kohekohe, puriri, titoki, and nikau. Drainage of the area has led to a subcanopy dominated by karaka. There is a sparse understorey of small-leaved mahoe. Half the forest had been fenced off for 11 years at time of survey; the other half remains unfenced and has pasture grasses as the ground cover.

Significant flora

None noted.

Fauna

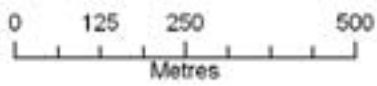
Shining cuckoo.

Significance






Alluvial forest is a threatened habitat type in Northland, and this small remnant is the best example in the Turiwiri district. Contains 1.8 ha of Acutely Threatened land environment A5.1b. This site possibly meets the criteria for Level 1 but further information may result in reclassification at Level 2.

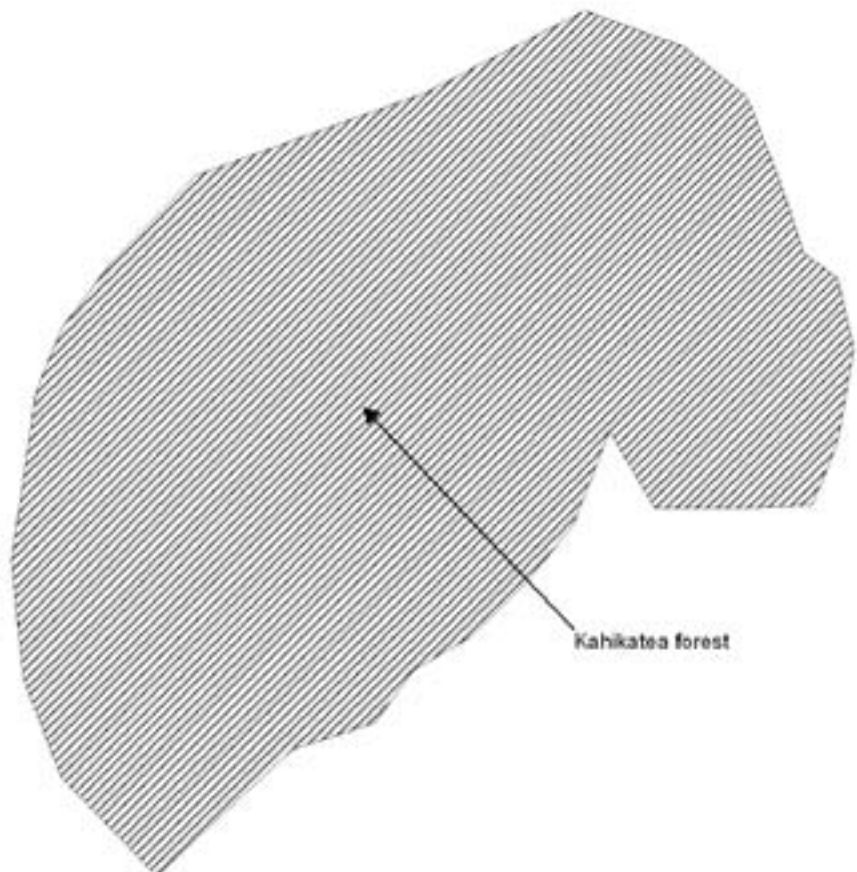


P07/173 Dargaville Bridge Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

LAKE REHUTAI AND WETLAND

Survey no.	P07/174a
Survey date	15 December 2006
Grid reference	P07 800 806
Area	5.2 ha
Altitude	60-70 m asl

Ecological units

- (a) *Eleocharis sphacelata* reedland on alluvium (75%)
- (b) Open water in dune lake (25%)

Landform/geology

Lake and swamp deposits in depression on early Pleistocene (Awhitu Group) cemented dune sand, ponded at landward edge of mid-late Pleistocene (Karioitahi Group) consolidated parabolic dune belt.

Vegetation

This site comprises

- (a) a natural wetland, dominated variously by *Eleocharis sphacelata*, raupo, and *Baumea articulata*, around
- (b) a small dune lake.

Significant flora

None noted.

Fauna

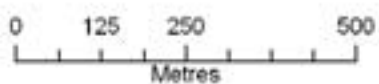
Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), New Zealand dabchick (Sparse), black shag (Sparse), little black shag (Sparse), little shag (Sparse), spotless crane (Sparse), Australasian little grebe (Regionally Significant), grey teal (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, black-backed gull, New Zealand kingfisher, Pacific swallow (OSNZ surveys 1977-1994). Grey warbler (SSBI P07/H034, 1977, 1979).

Significance






This is an excellent site, completely fenced from stock, relatively weed-free, and supporting threatened and regionally significant wetland bird species. Known colloquially as 'Bird Lake', it has been used for bird photography in the past. Contains 3.1 ha of Acutely Threatened land environment A5.1b and 1.8 ha of At Risk environment G1.1c. The site is largely protected within Rehuta Conservation Area (3.5 ha), administered by DOC. Site for one representative ecological unit: (a) *Eleocharis sphacelata* reedland on alluvium.

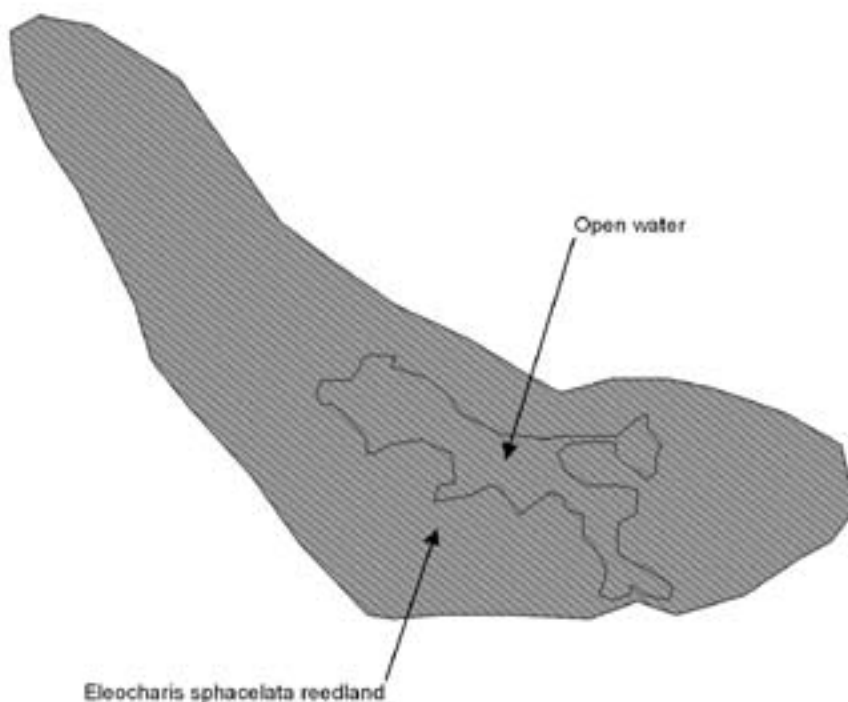


P07/174A Lake Rehutai and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

AORO A ROAD FOREST

Survey no. P08/056
Survey date 30 November 2006
Grid reference P08 904 796
Area 2.2 ha
Altitude 10 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This secondary forest remnant is situated beside the Northern Wairoa River. Nearby are a couple of small fenced kahikatea forest patches.

(a) Kahikatea dominates the canopy with frequent puriri, and occasional nikau, taraire, pukatea, and ti kouka. Other species include karaka, pukatea, and nikau. The understory consists of nikau, hangehange, and karo. Ground cover consists of toikiwi, mamangi, nikau, small-leaved milk tree, pigeonwood, small-leaved mahoe, kohekohe, *Asplenium oblongifolium*, *Lastreopsis microsora*, *Blechnum filiforme*, and kiekie.

Significant flora

None noted.

Fauna

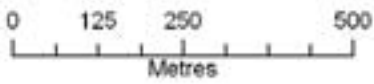
None noted.

Significance






Alluvial forest is an uncommon habitat type in this ED and Northland, and most of this site (1.4 ha) is a fenced QEII National Trust covenant. Edges are weedy but the interior is in excellent condition. Contains 2.2 ha of Acutely Threatened land environment A5.1b. This site evidently meets the criteria for Level 1, but further information may result in re-classification at Level 2.

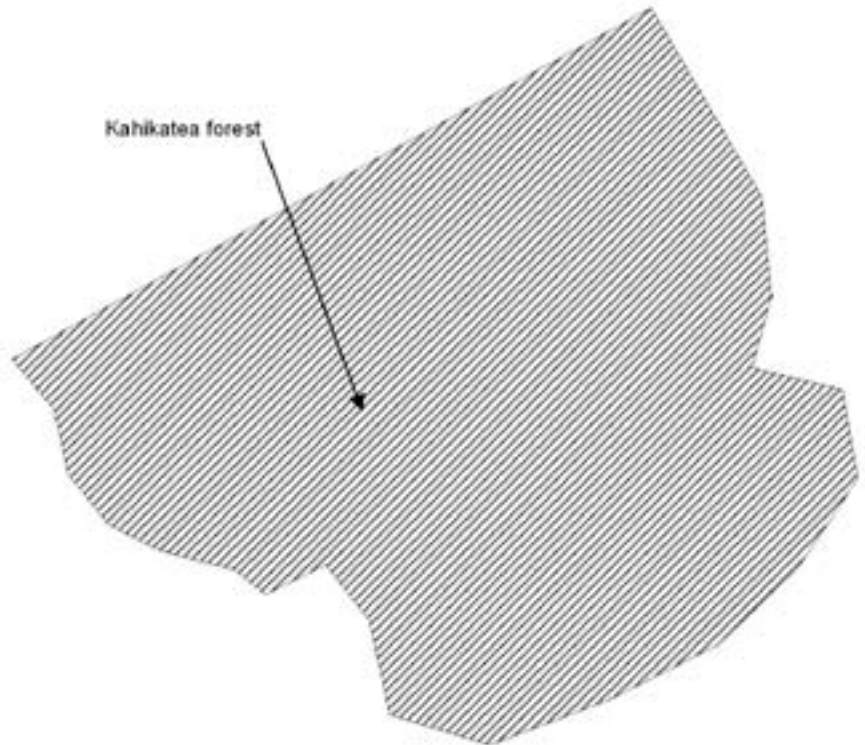


P08/056 Aoroa Road Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

WESTERN COAST C: GLINKS GULLY NORTH GRASSLAND, FLAXLAND AND FOREST

Survey no.	P08/061
Survey dates	28 November, 15 December, 18 December 2006
Grid reference	P08 various, including 872 692
Area	833 ha
Altitude	0-110 m asl

Ecological units

- (a) Spinifex sandfield on foredunes (17%)
- (b) Marram grassland on rear dunes (2%)
- (c) Coastal toetoe-harakeke tussock flaxland on coastal faces (68%)
- (d) Pohutukawa-coastal toetoe forest on rear dunes (P08 869 697) (1%)
- (e) Pohuehue vineland on rear of coastal faces (12%)

Landform/geology

Coastal cliffs and canyons eroded in early Pleistocene (Awhitu Group) cemented dune sands and associated facies, and overlying mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunes, capped by Holocene dunes; on seaward side coastal cliffs locally bounded by Holocene unconsolidated transverse dunes.

Vegetation

This extensive site comprises the long stretch of coastline between Aranga Beach South (O07/016) and Glinks Gully, and forms the northern part of what is known locally as Ripiro Beach. Most of the coastal vegetation north of Glinks Gully is in good condition with little farming encroachment and hence less weed invasion than coastal vegetation south of Glinks Gully.

- (a) Foredune vegetation consists of common spinifex, frequent knobby clubbrush and adventive iceplant and occasional pingao, tree lupin, and sand wind grass.
- (b) Rear duneland vegetation consists of common marram, frequent mingimingi and pohuehue and occasional knobby clubbrush, harakeke, adventive iceplant, sand coprosma, hangehange, spinifex, and kikuyu.
- (c) Cliff face vegetation consists of common harakeke and coastal toetoe, frequent pohuehue and mingimingi and occasional sand coprosma, hangehange, knobby clubbrush, oioi, tree lupin, tauhinu, and bracken. Karo, kawakawa, and kikuyu are locally present. The mapped area includes some patches of (e).
- (d) Occasional tiny pockets of pohutukawa forest consist of common pohutukawa and coastal toetoe.
- (e) Pohuehue vineland occurs in places on the back faces of the coastal cliffs. Other species such as knobby clubbrush, kikuyu, tauhinu, tree lupin, coastal toetoe, pampas, sand wind grass, and quaking grass occur occasionally.

Significant flora

Pingao (Gradual Decline) and sand coprosma (Regionally Significant), recorded during this survey.

Fauna

Wrybill (Nationally Vulnerable) (OSNZ CSN 1978), Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), white-fronted tern (Gradual Decline), variable oystercatcher (Regionally Significant), Antarctic prion, fairy prion (R. Parrish, pers. comm.). Mottled petrel (OSNZ CSN 1942), white-capped mollymawk (OSNZ CSN 1959), blue petrel (OSNZ CSN 1953), Antarctic petrel (OSNZ CSN 1979), Cape pigeon (OSNZ CSN 1986), sooty tern (OSNZ CSN 1996), spine-tailed swift (Taylor 1996), New Zealand pipit (OSNZ CSN 1999, 2000). Black-backed gull, Australasian pied stilt (R. Parrish, pers. comm.). Australasian gannet (Robertson et al. 2007). Pacific swallow, silvereye. *Notoreas* sp. 'northern' (Nationally Endangered) and black katipo (Serious Decline), both recorded in 2008 (A. Booth, DOC, pers. comm.). Green turtle (Regionally Significant) recorded live in 1978 (DOC Bioweb). Leatherback turtle (Migrant) recorded dead in 1989 (DOC Bioweb). Banded sea snake (Vagrant) recorded live in 1989 (DOC Bioweb), and yellow-bellied sea snake (Vagrant) live and dead between 1989 and 1996 (DOC Bioweb). New Zealand fur seals (Regionally Significant) regularly haul out at this site (R. Parrish, pers. comm.).

Significance

Coastal habitats such as this have been greatly reduced from their former extent in Northland and in much of New Zealand. Most of the vegetation of this extensive site is in relatively good condition and appears to be free from stock trespass. All pohutukawa between Aranga Beach and Glinks Gully have reputedly been planted (B. Searle, pers. comm.) and the stands certainly give that impression. In places (e.g., at Bayly's Beach P07 775 831), there are layers of buried forest with excellent kauri macrofossils. Bayly's Beach is a Nationally Important Geological Site for lignites and dune sands (Kenny & Hayward 1996). Contains 248.3 ha of At Risk land environment G1.1c. Some 4% of the site is already protected in Mahuta Gap Marginal Strip (3.8 ha), Rehutai Marginal Strip (28.3 ha), and Rehutai Conservation Area (3.9 ha), administered by DOC. Site for two representative ecological units: (a) Spinifex sandfield on foredunes, and (c) Coastal toetoe-harakeke tussock flaxland on coastal faces.

NEWSHAM ROAD NORTH FOREST

Survey no. P08/067a
Survey date 30 November 2006
Grid reference P08 963 699
Area 1.4 ha
Altitude 15 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This small remnant of secondary forest is near a QEII covenant and a council reserve and has recently been fenced. The canopy consists of abundant kahikatea with nikau and ti kouka common and occasional karaka, pukatea, puriri and titoki.

Significant flora

None noted.

Fauna

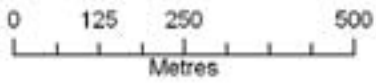
Australasian harrier.

Significance






Alluvial forest is rare in this ED and throughout Northland. Although there are substantially larger examples of the same vegetation type on the same landform nearby, this is a fenced reserve with no weed problems and its value is enhanced by proximity to other larger fragments. Contains 1.4 ha of Acutely Threatened land environment A5.1b.

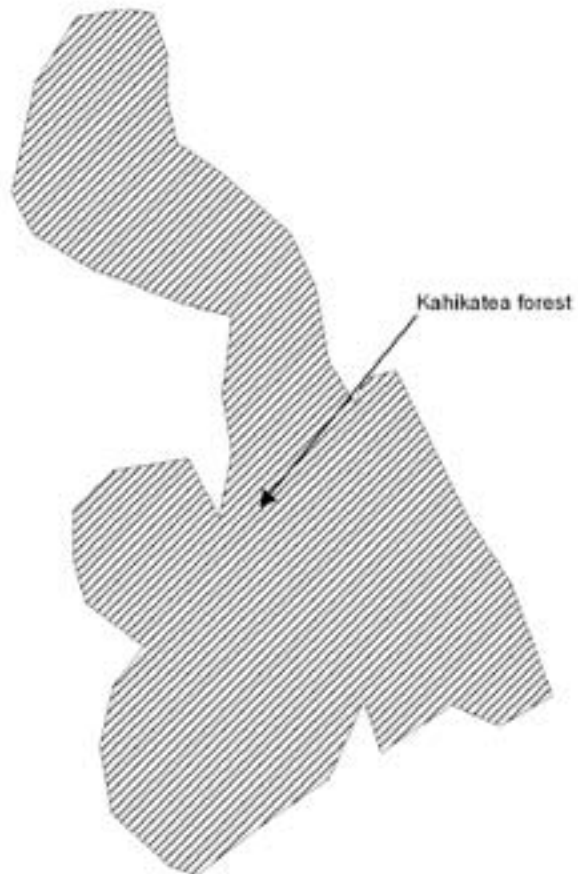


P08/067A Newsham Road North Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

NEWSHAM ROAD SOUTH FOREST

Survey no. P08/067b
Survey date 30 November 2006
Grid reference P08 965 692
Area 1.6 ha
Altitude 15 m asl

Ecological units

- (a) Kahikatea forest on alluvium (64%)
- (b) Puriri forest on alluvium (36%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This forest is near the Kidd's QEII covenant and the NRC Creamery Road Reserve. Eastern and western ends of the forest are fenced, leaving only a small intervening part unfenced. Both fenced areas are less than 1 ha and comprise young secondary forest.

- (a) Kahikatea dominates the canopy with frequent ti kouka.
- (b) Puriri is abundant in the canopy with kahikatea, nikau, and ti kouka common and occasional karaka and pukatea.

Significant flora

None noted.

Fauna

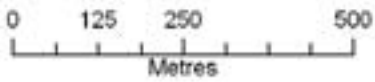
Australasian harrier.

Significance






Alluvial forest is an uncommon forest type throughout Northland and the value of the site is enhanced by the presence within it of two different forest associations and its proximity to other fenced fragments. Contains 2.8 ha of Acutely Threatened land environment A5.1b. Nearly one-third (0.5 ha) of the site is already protected under QEII National Trust covenant.

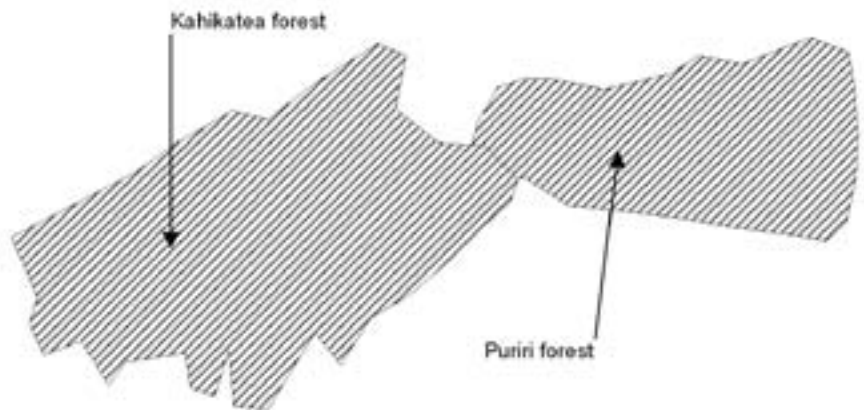


P08/067B Newsham Road South Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

KIDD'S CREAMERY ROAD CORNER FOREST

Survey no. P08/068a
Survey date 30 November 2006
Grid reference P08 955 712
Area 0.9 ha
Altitude 15 m asl

Ecological unit

- (a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This fragment has a closed canopy, well developed subcanopy and understorey with prolific tree seedlings, and a ground layer mainly of leaf litter.

- (a) The canopy is dominated by kahikatea. Kauri, matai, taraire, puriri, and ti kouka occur occasionally. The subcanopy is dominated by nikau and karaka, with frequent puriri and pigeonwood, and some mahoe and mamangi, while the understorey consists of abundant toikiwi, and common kiekie and small-leaved shrubs such as small-leaved milk tree, small-leaved mahoe, and *Coprosma areolata*.

Significant flora

None recorded.

Fauna

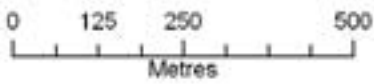
New Zealand pigeon (Gradual Decline), white-faced heron, shining cuckoo, New Zealand kingfisher, grey warbler, North Island fantail, silvereye (SSBI P08/H028, 1992, 1993).

Significance






This QEII National Trust covenant is in very good condition and relatively weed-free. Proximity to the other fenced fragments at Tatarariki enhances its value. This is a Nationally Important site for Kaipara Soils (Kenny & Hayward 1996). Contains 2.8 ha of Acutely Threatened land environment A5.1b.

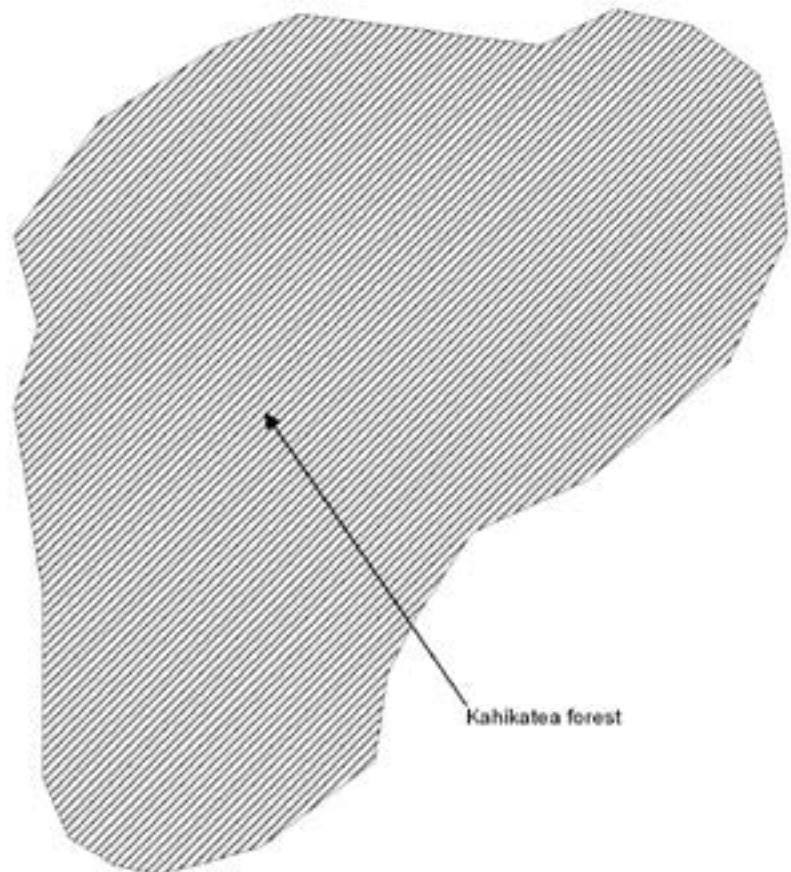


P08/068A Kidds Creamery Road Corner Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

NRC CREAMERY ROAD RESERVE FOREST

Survey no.	P08/068b
Survey date	30 November 2006
Grid reference	P08 957 707
Area	5.9 ha
Altitude	15 m asl

Ecological units

- (a) Kahikatea-ti kouka forest on alluvium (30%)
- (b) Kahikatea-kowhai-ti kouka forest on alluvium (32%)
- (c) Puriri-kohekohe-karaka forest on hillslope (24%)
- (d) Kahikatea forest on hillslope (14%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This reserve is in two parts, with the smaller northern end cut off from the rest by a cattle race. Both have recently been fenced.

- (a) The small part contains kahikatea-ti kouka forest with many epiphytes and climbers such as *Metrosideros perforata*. In open areas, pasture grasses occur. Some restoration planting has been undertaken, though some inappropriate species, e.g., rimu, have been planted.
- (b) The canopy consists of common kahikatea, ti kouka, and kowhai with frequent *Coprosma areolata*. The understorey contains tokiwi, small-leaved milk tree, coastal karamu, *Coprosma rigida*, *C. areolata*, harakeke, pigeonwood, mapau, mahoe, and small-leaved mahoe.
- (c) On the northern side of the large part of the reserve, the canopy is formed by common puriri, karaka, and kohekohe and occasional rewarewa. The understorey contains nikau and mamangi.
- (d) The understorey of the kahikatea forest contains frequent nikau while the ground layer is dominated by the native grass *Oplismenus imbecillis*.

Significant flora

Doodia mollis (Sparse) (1998 AK 235015). *Coprosma rigida* (Regionally Significant), recorded during this survey.

Fauna

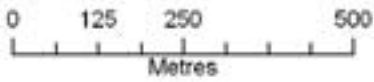
None noted.

Significance






The largest of the forest fragments at Tatarariki. Alluvial forest is a rare vegetation type in this ED and Northland, and its value is enhanced by the presence within it of several different forest associations on different landforms, threatened and regionally significant plant species, and its

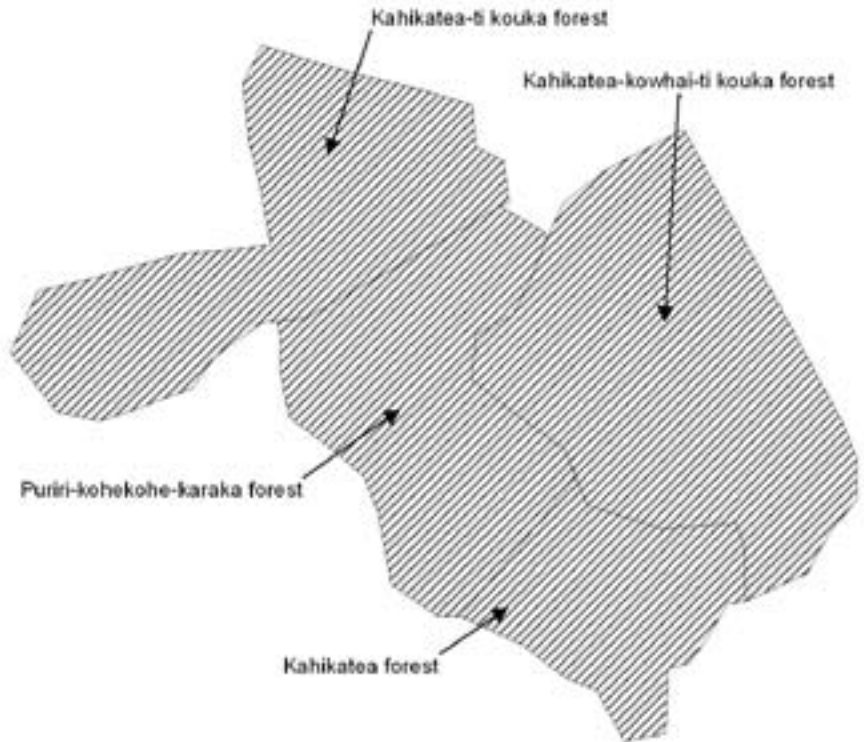


P08/068B NRC Creamery Road Reserve Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

proximity to other fenced fragments. Contains 6.1 ha of Acutely Threatened land environment A5.1b. Most of the site (3.7 ha) is already protected by QEII National Trust covenant. Site for three representative ecological units: (a) Kahikatea-ti kouka forest on alluvium, (b) Kahikatea-kowhai-ti kouka forest on alluvium, and (c) Puriri-kohekohe-karaka forest on hillslope.

KIDDS CREAMERY ROAD MIDDLE FOREST

Survey no. P08/068c
Survey date 30 November 2006
Grid reference P08 957 710
Area 0.9 ha
Altitude 15 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

This QEII covenant comprises young secondary kahikatea forest. It has only recently been fenced but is starting to show signs of recovery, such as an increasing abundance of nikau.

(a) Kahikatea is abundant in the forest canopy with occasional pukatea, taraire, and karaka. The subcanopy contains frequent nikau and occasional mamangi; ti kouka is frequent around the margins. The understorey contains frequent toikiwi and tree privet. In parts of the forest, areas of kahikatea treeland occur with pasture beneath.

Significant flora

None noted.

Fauna

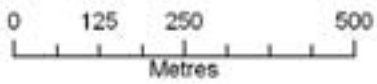
New Zealand pigeon (Gradual Decline), white-faced heron, shining cuckoo, New Zealand kingfisher, grey warbler, North Island fantail, silvereye (SSBI P08/H028, 1992, 1993).

Significance






Alluvial forest is an uncommon habitat type in Northland, and the presence of a substantially larger example of the same vegetation type on the same property enhances the value of this small site. This site is a Nationally Important site for Kaipara Soils (Kenny & Hayward 1996). Contains 0.9 ha of Acutely Threatened land environment A5.1b. A small proportion of the site (0.2 ha) is already protected under QEII National Trust covenant.

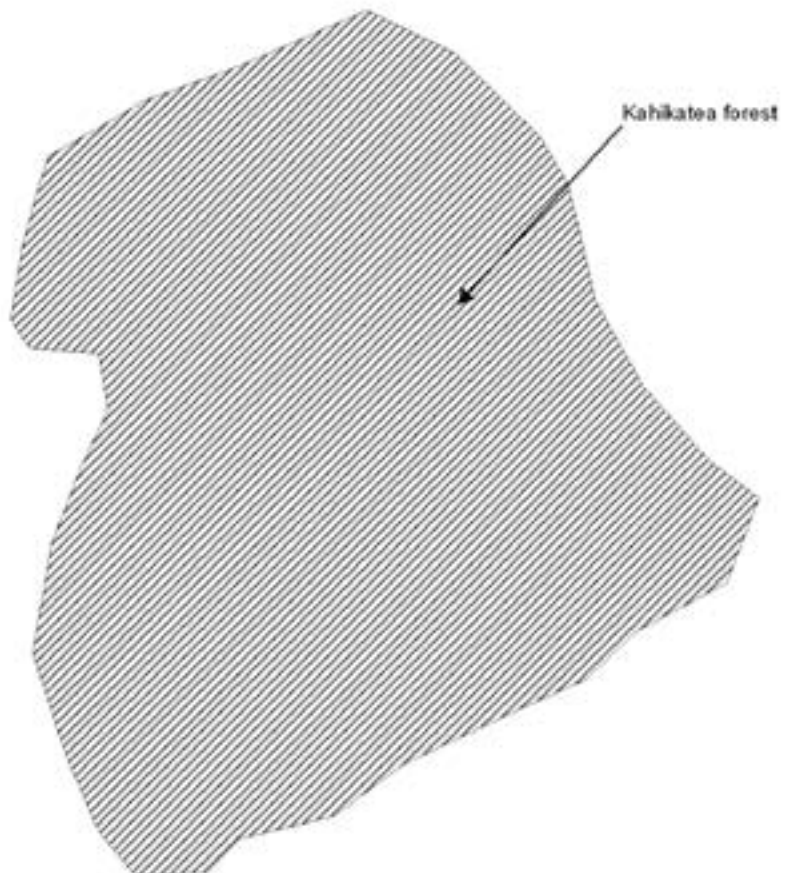


P08/068C Kidds Creamery Road Middle Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

WESTERN COAST D: GLINKS GULLY SOUTH GRASSLAND, WETLAND AND SHRUBLAND

Survey no.	P08/072
Survey date	18 December 2006
Grid reference	P08 various, including PO8 992 506
Area	1000 ha
Altitude	0-140 m asl

Ecological units

- (a) Sandfield on unconsolidated foredunes (20%)
- (b) Pohuehue vineland on semi-consolidated rear dunes (52%)
- (c) Raupo reedland in dune slacks (6%)
- (d) Manuka shrubland and shrub grassland on coastal faces (22%)

Landform/geology

Coastal cliffs and canyons eroded in mid-late Pleistocene (Karioitahi Group) consolidated dune sand, with overlying unconsolidated Holocene parabolic dunes; on seaward side coastal cliffs bounded by Holocene unconsolidated transverse and parabolic dunes, and associated interdune wetlands, and beach sand.

Vegetation

This extensive site comprises the long stretch of coastline between Glinks Gully and the Pouto dune system, and forms the southern part of what is known locally as Ripiro Beach. There is a narrow, fragmentary band of unconsolidated dunes on the seaward side, a broad band of semi-consolidated dunes behind them, and occasional freshwater wetlands where streams reach the coast and in the south. The site appears to be largely accessible to grazing by stock from farms behind and has been widely degraded by weed invasion.

- (a) Unconsolidated dunes support frequent spinifex and occasional tauhinu.
- (b) Pohuehue vineland covers an extensive band of semi-consolidated rear dunes. Knobby clubrush is common; adventive iceplant and kikuyu are frequent, while tauhinu, tree lupin, coastal toetoe, pampas, sand wind grass, and quaking grass occur occasionally. Where pohuehue is locally absent, knobby clubrush and tauhinu are dominant.
- (c) Freshwater wetlands are dominated by raupo, with frequent giant umbrella sedge, *Baumea articulata*, swamp millet, native willow weed, harakeke, kuta, *Eleocharis sphacelata*, and pampas, and occasional oioi, ti kouka, *Centella uniflora*, *Eleocharis acuta*, *Carex maorica*, and water primrose.
- (d) In places on coastal cliff faces occur patches of abundant manuka with common open pockets of pasture, frequent pampas, pohuehue and harakeke, and occasional giant umbrella sedge, and knobby clubrush.

Significant flora

None noted.

Fauna

Australasian bittern (Nationally Endangered) (SSBI P08/H029, 1993). Wrybill (Nationally Vulnerable) (Robertson et al. 2007). Caspian tern (Nationally Vulnerable) (this survey). Northern little blue penguin (Gradual Decline), red-billed gull (Gradual Decline), white-fronted tern (Gradual Decline) (SSBI P08/H029, 1993). New Zealand dabchick (Sparse), black shag (Sparse), little black shag (Sparse) (this survey). Variable oystercatcher (Regionally Significant), Australasian pied stilt, black-backed gull, New Zealand kingfisher, paradise shelduck (SSBI P08/H029, 1993). Australasian gannet (Robertson et al. 2007). New Zealand pipit, Australasian harrier. *Notoreas* sp. 'northern' (Nationally Endangered), recorded in 2000 (B. Patrick, pers. comm.), black katipo (Serious Decline) (A. Booth, DOC, pers. comm.). New Zealand fur seals (Regionally Significant) regularly haul out at this site (R. Parrish, pers. comm.).

Significance

Although widely degraded by grazing and weed invasion, this huge site with its diverse array of contiguous plant communities represents part of the only semi-consolidated dune system in the ED still predominantly under native vegetation (the other is the contiguous northern portion of the Pouto dune system P09/001). It supports a range of threatened and regionally significant species. Contains 758.4 ha of At Risk G1.1c. About one-quarter of the site is already protected in Wainui Lake Conservation Area (15.1 ha), Tikinui Conservation Area (104.2 ha), Pouto North Marginal Strip (16.5 ha), and Pouto North Conservation Area (118.1 ha), administered by DOC. Site for two representative ecological units: (a) Sandfield on unconsolidated foredunes, and (b) Pohuehue vineland on semi-consolidated rear dunes.

MAPAU BUSH

Survey no. P08/094a
Survey date 1 December 2006
Grid reference P08 052 608
Area 6.3 ha
Altitude 10-15 m asl

Ecological unit

(a) Kahikatea forest on alluvium (100%)

Landform/geology

Holocene alluvial and swamp deposits on the flood plain of the Northern Wairoa River.

Vegetation

An isolated, fully fenced pocket of kahikatea forest on the eastern side of the Northern Wairoa River. Some older kahikatea trees are present in the canopy.

(a) Kahikatea is the dominant canopy species with occasional totara, mahoe, karaka, and ti kouka. A well-developed subcanopy contains abundant kohekohe with frequent nikau, karaka, ti kouka, and karo. *Muehlenbeckia australis* covers short trees on the forest edge. Some pampas and Chinese privet occur around the edges.

Significant flora

None noted.

Fauna

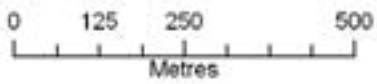
None noted.

Significance






Although isolated, this fragment is as large as any of its kind in the ED and one of the few remaining stands of kahikatea forest on the Ruawai Plains. Contains 6.3 ha of Acutely Threatened land environment A5.1b. The single ecological unit, (a) Kahikatea forest on alluvium, is representative.

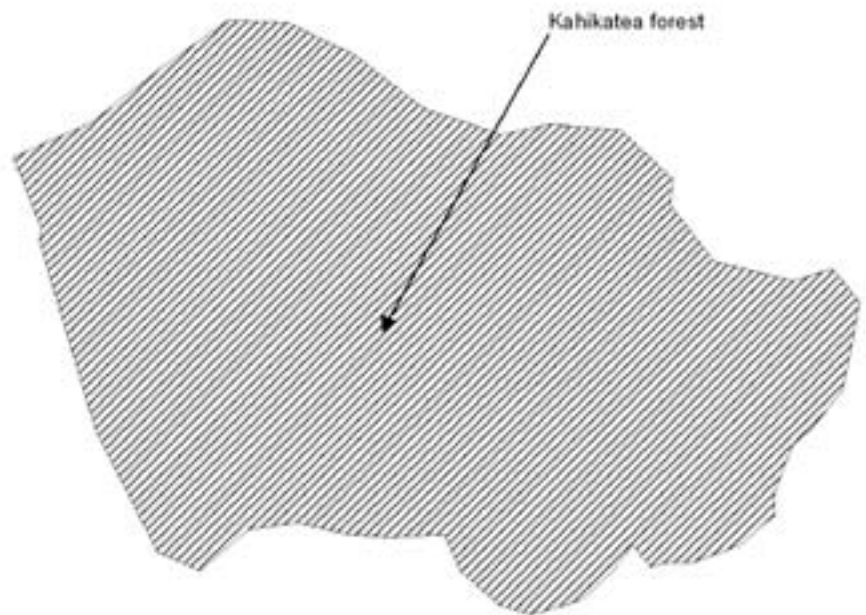


P08/094a Mapau Bush



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

RUSSELL WETLAND

Survey no. P08/096
Survey date 17 December 2006
Grid reference P08 017 539
Area 8 ha
Altitude 55-60 m asl

Ecological unit

(a) Manuka-pampas shrub grassland on peat (100%)

Landform/geology

Gully head eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, with Holocene swamp and alluvial deposits on valley floor.

Vegetation

This site comprises a side valley wetland that has been deeply drained but still has a significant peat layer (over 2 m deep) remaining. Manuka was recently sprayed in one section of the wetland. The site would be easy to restore by blocking drains and fencing to prevent stock grazing. Current botanical value is low but has the potential for restoration (also possible fernbird habitat). The owner is a keen conservationist and may be interested in protection.

(a) Wetland vegetation consists of abundant sweet vernal, frequent pampas and manuka, and occasional ti kouka, tarweed, soft rush, *Isolepis distigmata*, tangle fern, *Juncus planifolius*, *Microtis unifolia*, *Lobelia anceps*, raupo, Yorkshire fog, forked sundew, *Thelymitra* species and sphagnum.

Significant flora

Forked sundew (Regionally Significant), recorded during this survey.

Fauna

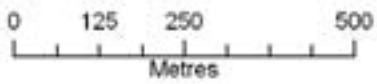
None noted.

Significance






Lowland peat wetlands are a threatened habitat type in Northland and elsewhere in New Zealand, and this is the only example encountered in the ED. Although this substantial site been drained and extensively invaded by weeds, it has potential for restoration. Potential habitat for the threatened North Island fernbird. Contains 7.2 ha of Acutely Threatened land environment A5.1b and 1 ha of At Risk environment A6.1b.

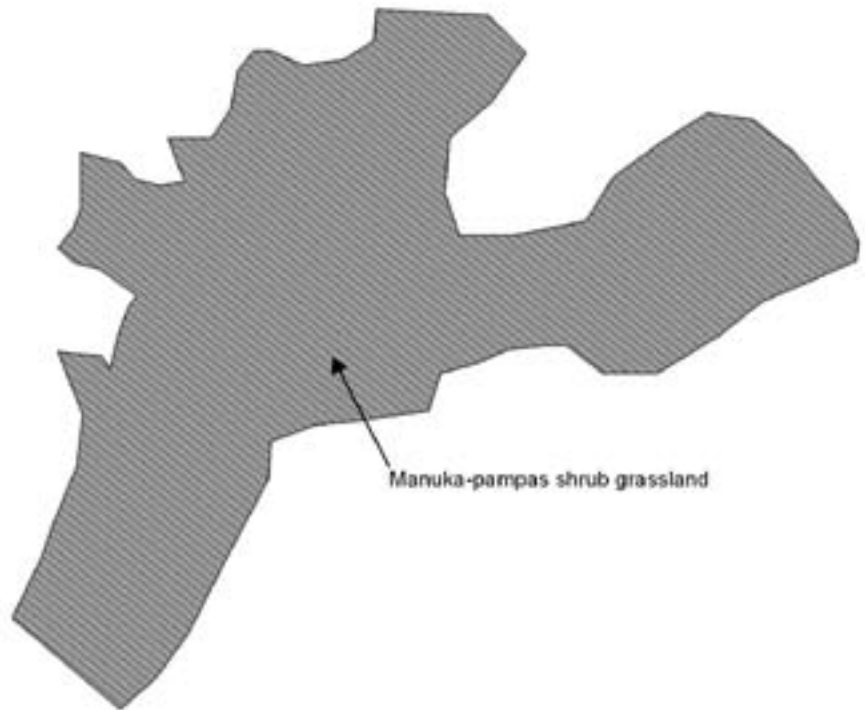


P08/096 Russell Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

TANGITIKI ESTUARY, WETLAND AND SHRUBLAND

Survey no.	P08/101
Survey date	17 December 2006
Grid reference	P08 074 511
Area	166 ha
Altitude	0-40 m asl

Ecological units

- (a) Mangrove shrubland on estuarine alluvium (53%)
- (b) Manuka shrubland on alluvium (11%)
- (c) Oioi rushland on estuarine alluvium (4%)
- (d) Open water in estuary (32%)

Landform/geology

Holocene estuarine and swamp deposits, and intertidal flats.

Vegetation

Tangitiki Estuary contains a complete sequence from mangrove saltmarsh to oioi sedgeland to a freshwater wetland dominated by manuka with occasional pockets of raupo. The site is fenced.

- (a) Mangrove shrubland consists of abundant mangrove (up to 2 m tall) and open mudflat, with occasional sea rush, sea primrose, shore tussock, glasswort, remuremu, *Isolepis cernua* and saltmarsh ribbonwood.
- (b) Manuka wetland consists of abundant manuka (up to 3 m tall), frequent *Baumea rubiginosa*, pampas and raupo and occasional harakeke.
- (c) Oioi rushland consists of abundant oioi.
- (d) Open water in estuary.

Significant flora

None noted.

Fauna

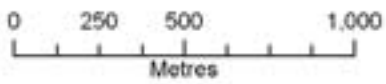
Black mudfish (Gradual Decline) (DOC survey 2001). Australasian bittern (Nationally Endangered), red-billed gull (Gradual Decline), North Island fernbird (Sparse), banded rail (Sparse), little shag (Sparse), grey warbler, silveryeye, North Island fantail, New Zealand kingfisher, Australasian harrier, white-faced heron, black-backed gull, Australasian pied stilt, bar-tailed godwit (SSBI P08/H020, 1989). Pied shag (OSNZ CSN 1961).

Significance






Despite former partial drainage of the upper reaches, this large site is still in moderately good condition. One of only two records of black mudfish in the ED. Contains 25.1 ha of Acutely Threatened land environ-

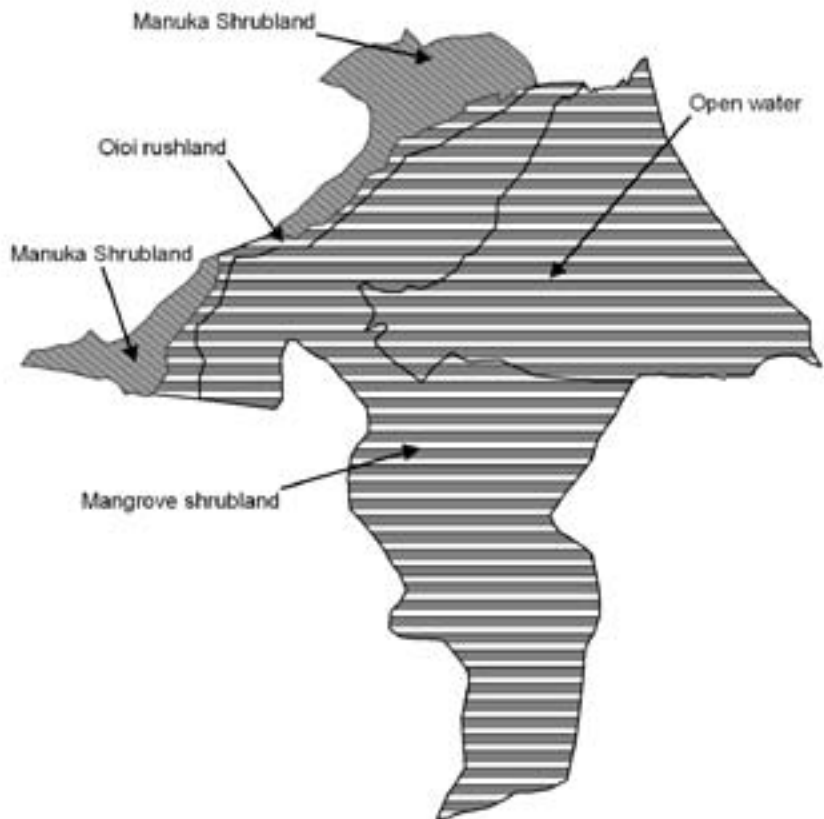


P08/101 Tangitiki Estuary, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

ment A5.1b and 6 ha of At Risk environment A6.1b. Nearly one-third of the site is already protected in Tangitiki Bay Marginal Strip No 1 (2.8 ha), Tangitiki Bay Marginal Strip No 2 (0.05 ha), and Tangitiki Conservation Area (47.3 ha), administered by DOC. Site for two representative ecological units: (a) Mangrove shrubland on estuarine alluvium, and (b) Manuka shrubland on alluvium

KAIPARA HARBOUR, SHRUBLAND AND RUSHLAND

Survey no. P08/200
Survey dates 30 November 2006, 17 December 2006
Grid references P08 082 594 (Montgomery Reserve),
P08 985 636 (Tikinui), P08 030 578 (Otara Point),
P08 063 552 (Clarks Bay)
Area 11 480 ha
Altitude 0-20 m asl

Ecological units

- (a) Mangrove shrubland on estuarine alluvium (4%)
- (b) Oioi rushland on estuarine alluvium (1%)
- (c) Open water (95%)

Landform/geology

Holocene estuarine deposits, muddy and sandy intertidal sediments, and harbour channels.

Vegetation

The site comprises several extensive tracts of

- (a) mangrove shrubland up to 5 m high in places. The largest by far is Montgomery Reserve, south of the Ruawai Plains on the true left of the Northern Wairoa River. Smaller tracts occur on the true right of the Northern Wairoa River at Tikinui and Otara Point. A variety of native and adventive saltmarsh plants including oioi, sea primrose, and saltwater paspalum, and locally alligator weed, are present in the ground layer.
- (b) Saltmarshes mostly dominated by oioi occur locally on the inland side. A range of characteristic saltmarsh species, including saltmarsh ribbonwood, sea rush and sea primrose, is present.
- (c) Open water.

Significant flora

None noted.

Fauna

Tikinui: White heron (Nationally Critical) (OSNZ CSN 1973). Australasian bittern (Nationally Endangered: OSNZ CSN 1986). Yellow-bellied sea snake (Vagrant) recorded live in 1991 (DOC Bioweb).

Otara Point: White-fronted tern (Gradual Decline), North Island fernbird (Sparse) (this survey). Australasian harrier, white-faced heron, Australasian pied stilt (SSBI Q08/H047*6, 1989). New Zealand kingfisher, grey warbler, black-backed gull.

Clarks Bay: Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), New Zealand kingfisher, Australasian harrier, white-faced heron, black-backed gull, Australasian pied stilt, South Island pied oystercatcher (SSBI Q08/H047*8, 1989).

General: Banded dotterel (Gradual Decline), banded rail (Sparse), bar-tailed godwit, lesser knot, Pacific golden plover, and cattle egret have recently been recorded at this site (Robertson et al. 2007).

Significance

This site comprises part of the largest harbour in New Zealand and the Southern Hemisphere, a site of national and international importance for birdlife, especially migratory birds that arrive each year to feed and roost. It also contains far and away the largest tracts of mangrove shrubland in the ED. Contains 66.8 ha of Acutely Threatened land environment A5.1b, 3.6 ha of Chronically Threatened environments A5.2a and A6.1d, and 87 ha of At Risk environments A4.1a and A6.1b. Some 170 ha of the site is already protected: Ruawai Conservation Area (7 ha), Wairoa River Marginal Strip No 6 (< 0.1 ha), Wairoa River Marginal Strip No 7 (10.1 ha), Wairoa River Marginal Strip No 8 (12.9 ha), Wairoa River Marginal Strip No 9 (2.6 ha), Wairoa River Marginal Strip No 10 (0.4 ha), Koremoa Marginal Strip (0.1 ha), Tangitiki Bay Marginal Strip No 1 (0.05 ha), Tauhara Creek Marginal Strip (0.7 ha), Kohatutahi Marginal Strip (2.6 ha), Matanginui Conservation Area (3.6 ha), and Whakatu Conservation Area (130.3 ha), all administered by DOC. Site for two representative ecological units: (a) Mangrove shrubland on estuarine alluvium, and (b) Oioi rushland on estuarine alluvium.

CLARKE'S LAKE AND WETLAND

Survey no.	P08/208
Survey date	Not visited during this survey. Information from SSBI P08/H016.
Grid reference	P08 917 649
Area	2.4 ha
Altitude	100 m asl

Ecological units

- (a) Open water in dune lake
- (b) *Eleocharis sphacelata* reedland on alluvium (both wetland units together comprise 100%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene parabolic dunefield.

Vegetation

This old dune lake comprises:

- (a) Open water in dune lake
- (b) *Eleocharis sphacelata* reedland with occasional ti kouka on alluvium.

Significant flora

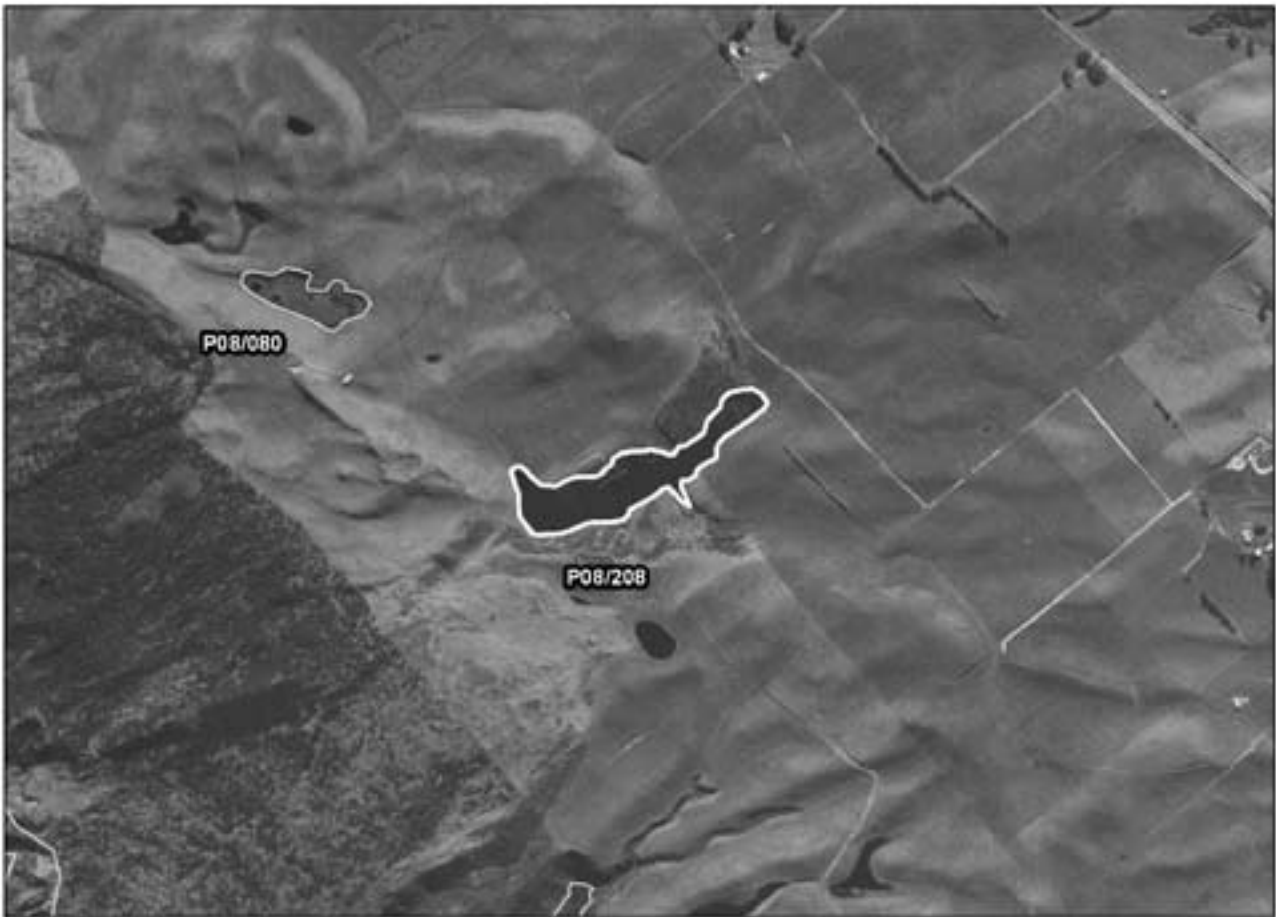
None noted.

Fauna

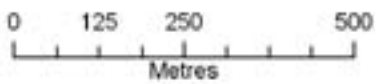
Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), black shag (Sparse), little shag (Sparse), New Zealand dabchick (Sparse), Australasian little grebe (Regionally Significant), paradise shelduck, Australasian harrier, pukeko, Australasian shoveler (Regionally Significant), New Zealand kingfisher, Pacific swallow (SSBI P08/H016, 1989).

Significance






Although completely grazed by domestic stock, this site was described in 1989 (SSBI P08/H016) as having good potential for restoration by riparian planting, and threatened and regionally significant birds have been recorded in a past survey. A small proportion of it (0.1 ha) is already protected in Lucich Road Marginal Strip, administered by DOC.

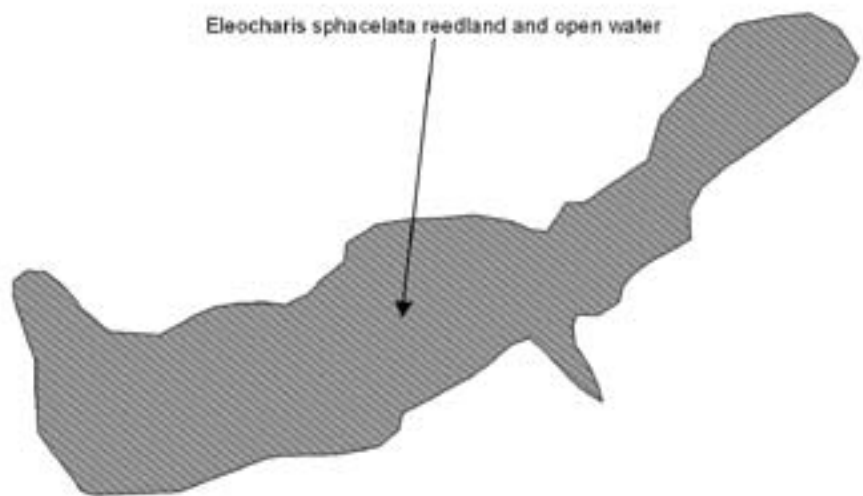


P08/208 Clarke's Lake and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

GREVILLE'S LAGOON AND WETLAND

Survey no.	P08/209
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	P08 847 736
Area	2.5 ha
Altitude	40 m asl

Ecological units

- (a) Raupo reedland on alluvium (22%)
- (b) Open water in dune lake (78%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene parabolic dunefield.

Vegetation

- (a) A lacustrine fringe of raupo reedland with occasional kuta completely encircles the lake. Alligator weed forms a floating mat amongst the raupo at the western end.
- (b) Open water in dune lake.

Significant flora

None noted.

Fauna

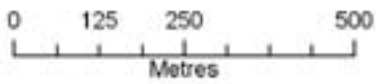
Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), New Zealand dabchick (Sparse) (SSBI P08/H006, 1989). Black shag (Sparse), little black shag (Sparse), little shag (Sparse) (OSNZ surveys 1977-1994). Australasian harrier, black-backed gull, Australasian shoveler (Regionally Significant), New Zealand kingfisher, Pacific swallow (SSBI P08/H006, 1989). Pied shag, white-faced heron, paradise shelduck, pukeko, New Zealand kingfisher (OSNZ surveys 1977-1994).

Significance






Ranked Moderate by Wells et al. (2007) because it is fully fenced and its submerged vegetation is native. The emergent zone, however, is affected by the pest plant, alligator weed. Restoration planting has been undertaken on the seaward side. Threatened species have been recorded in past surveys. Contains 1.1 ha of At Risk land environment G1.1c.

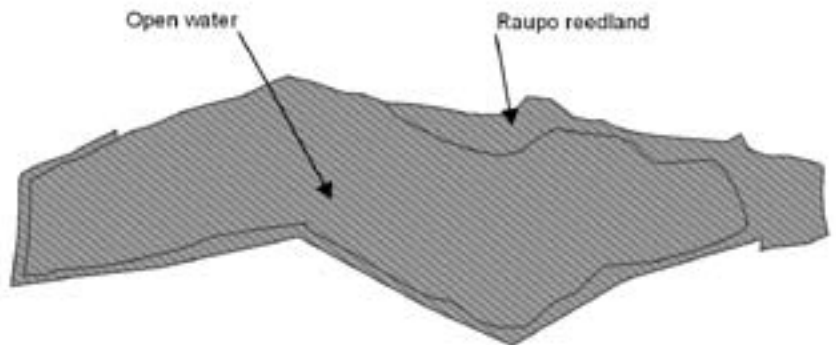


P08/209 Greville's Lagoon and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

LAKE KAPOAI AND WETLAND

Survey no.	P08/210
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	P08 856 726
Area	3.6 ha
Altitude	40 m asl

Ecological units

- (a) Kuta-*Eleocharis sphacelata* reedland on alluvium
- (b) Open water in dune lake (both units together comprise 100%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene parabolic dunefield.

Vegetation

- (a) A lacustrine fringe of kuta and *Eleocharis sphacelata* is re-establishing.
- (b) Open water in dune lake.

Significant flora

Fimbristylis velata (Sparse), *Centipeda aotearoana*, *Callitriche petrei* ssp. *petrei*, *Alternanthera* aff. *sessilis*, all Regionally Significant (Wells et al. 2007).

Fauna

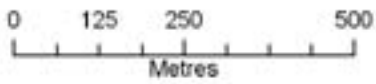
Shortfin eel, common bully (NIWA 2007). Grey duck (Nationally Endangered) (OSNZ surveys 1977-1994). New Zealand dabchick (Sparse) (SSBI P08/H07, 1989). Black shag (Sparse), little black shag (Sparse), little shag (Sparse), New Zealand scaup (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian harrier, pukeko, New Zealand kingfisher, Pacific swallow (OSNZ surveys 1977-1994). Black shag were also recorded in 2005 and grey duck in 2007 (Wells et al. 2007).

Significance






Ranked Low-Moderate by Wells et al. (2007) because of the absence of submerged and sparse marginal vegetation. Threatened and regionally significant species are present, as well as pest fish species (rudd: Wells et al. 2007). Re-establishment of lacustrine vegetation is occurring after recent almost complete riparian fencing. Contains 2.4 ha of At Risk land environment G1.1c.

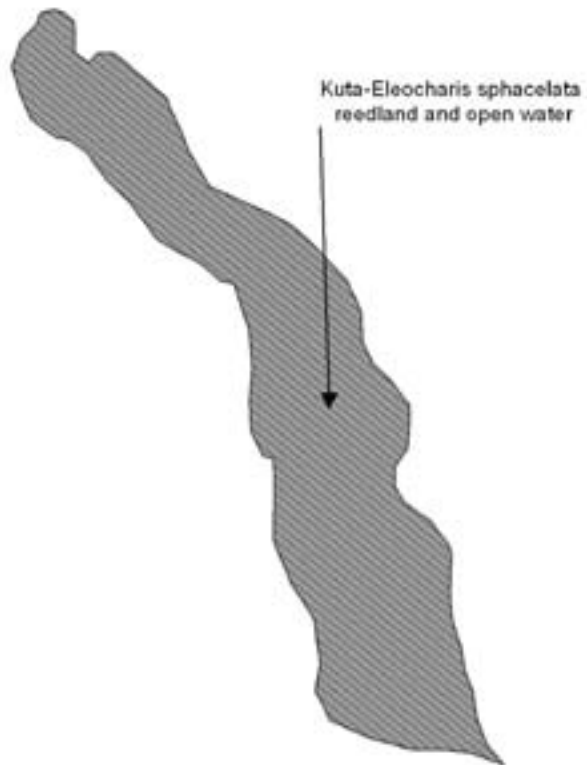


P08/210 Lake Kapoai and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

LAKE WAINUI AND WETLAND

Survey no.	P08/211
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	P08 892 682
Area	4.8 ha
Altitude	95 m asl

Ecological units

- (a) Kuta reedland on alluvium
- (b) Open water in dune lake (both units together comprise 100%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at the landward edge of Holocene parabolic dunefield.

Vegetation

There is

- (a) a narrow lacustrine fringe on about three-quarters of the shoreline dominated by kuta, with some *Baumea articulata*, *Eleocharis sphacelata*, and *E. acuta*.
- (b) Open water.

Significant flora

Fimbristylis velata (Sparse) was recorded in 2007 in lakeside turf (Wells et al. 2007).

Fauna

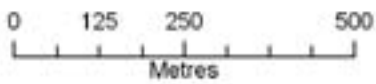
Grey duck (Nationally Endangered) (SSBI P08/H015, 1989). Australasian bittern (Nationally Endangered), New Zealand dabchick (Sparse) (Wells et al. 2007). Little shag (Sparse) (SSBI P08/H015, 1989). Little black shag (Sparse), Australasian little grebe (Regionally Significant) (OSNZ surveys 1977-1994). New Zealand scaup (Regionally Significant), paradise shelduck (Wells et al. 2007). Grey warbler, silvereye, Pacific swallow, pied shag, black-backed gull (SSBI P08/H015, 1989). White-faced heron, Australasian harrier, pukeko, New Zealand kingfisher (OSNZ surveys 1977-1994).

Significance






Ranked Moderate-High by Wells et al. (2007), this site supports threatened and regionally significant species. Degraded by domestic stock grazing, and an aggressive weed, water primrose, has recently been reported (Wells et al. 2007). Contains 1.6 ha of At Risk G1.1c. The site is already protected as Wainui Lake Conservation Area (15.1 ha), administered by DOC.

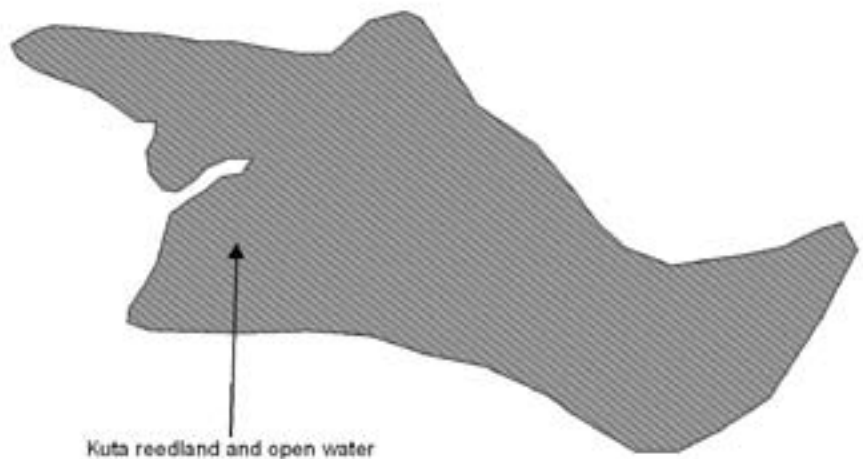


P08/211 Lake Wainui and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

WAIMAMAKU ESTUARY, SHRUBLAND AND RUSHLAND

Survey no.	P08/213
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	P08 064 534
Area	102 ha
Altitude	0-30 m asl

Ecological units

- (a) Mangrove shrubland on estuarine alluvium (67%)
- (b) Sea rush rushland on estuarine alluvium (8%)
- (c) Manuka shrubland on alluvium (25%)

Landform/geology

Holocene alluvial, swamp and estuarine deposits in valley eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies. Also Holocene estuarine and beach sand deposits.

Vegetation

This site supports estuarine vegetation typical of the Pouto Peninsula:

- (a) Mangrove shrubland with some glasswort grading in places into
- (b) Sea rush rushland with some oioi, which in turn grades into
- (c) Manuka shrubland containing frequent *Baumea juncea* and *B. rubiginosa*, and occasional *B. articulata* and raupo; a variant degraded by weed (pampas) invasion occurs further inland.

Significant flora

None noted.

Fauna

Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), black shag (Sparse), spotless crane (Sparse), banded rail (Sparse), North Island fernbird (Sparse) grey warbler, silvereye, North Island fantail, New Zealand kingfisher, Pacific swallow, white-faced heron, pukeko, pied shag (rookery present in 1989), little shag, paradise shelduck, black-backed gull, Australasian pied stilt, South Island pied oystercatcher, bar-tailed godwit (SSBI Q08/H047*9, 1989).

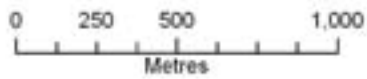
Significance

This substantial site which supports threatened species is mostly Crown land administered by Landcorp. The northernmost of the Kaipara Harbour estuaries in the ED, it comprises the lower reaches of Mosquito Gully Wetland (P08/099), from which it has now been separated by drainage and land development. It has been degraded by stock grazing and weed invasion. Contains 24.7 ha of Acutely Threatened land environments A5.1b and 7.5 ha of At Risk environment A6.1b. A very small proportion






of it is already protected in Tomb Point Marginal Strip (4.2 ha), Tomb Point Conservation Area (2.4 ha), and Tangitiki Bay Marginal Strip No 1 (1 ha), administered by DOC.



P08/213 Waimamaku Estuary, Shrubland and Rushland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

WESTERN COAST E: POUTO DUNE SYSTEM

Survey no. P09/001
Survey dates 27-29 January 2007
Grid references P09 various
Area 5798 ha
Altitude 5-150 m asl

Ecological units

Summary:

- (a) Sandfield on foredunes (41%)
- (b) Kanuka shrub duneland, including
- (c) Oioi rushland in dune slacks, on rear dunes (both units together comprise 31%)
- (d) Kanuka shrubland on rear dunes (13%)
- (e) Mixed freshwater wetland (including raupo reedland) on alluvium (8%)
- (f) Pohuehue vineland on rear dunes (1%)
- (g) Kanuka forest on inland hillslope (3%)
- (h) Open water in dune lakes (3%)

By site visit:

Northern end vineland (P09 985 516)

- (a) Pohuehue vineland on rear dunes

Roundhill wetlands (P09 019 461)

- (a) Raupo reedland on alluvium

Lake Oteone wetland and shrubland (P09 027 450)

- (a) Raupo reedland on alluvium
- (b) *Baumea*-raupo sedge-reedland on alluvium
- (c) Kanuka shrubland on hillslope

Lake Karaka North shrubland and forest (P09 034 441)

- (a) Kanuka forest on hillslope
- (b) Kanuka shrubland on rear dunes

Lake Karaka wetland and shrubland (P09 043 422)

- (a) *Baumea articulata*-*Carex secta*-raupo reedland in dune slack
- (b) Manuka-*Baumea juncea* shrub-sedgeland (P09 039 420) in dune slack
- (c) Raupo reedland on alluvium
- (d) Oioi rushland in dune slack
- (e) Kanuka shrubland in dune slack

Lakes and wetland between Lakes Karaka and Mokeno (P09 046 417)

- (a) *Baumea juncea* sedgeland in dune slack
- (b) Raupo reedland on alluvium

Lake Mokeno wetland and shrubland (P09 051 390, P09 049 407)

- (a) Raupo reedland on alluvium
- (b) Kanuka shrubland on hillslope (extension of P09/016)
- (c) Pampas grassland on dunes

Lake Whakaneke wetland and shrubland (P09 058 366)

- (a) Kanuka forest/shrubland on hillslope
- (b) Raupo reedland on alluvium

Southwest Pouto shrubland (P09 050 367)

- (a) Kanuka-*Baumea* shrub sedgeland in dune slack

Lake Matthews (Stick Lake) wetland (P09 074 346)

- (a) Raupo reedland on alluvium

Lighthouse Road duneland and shrubland (Q09 087 354)

- (a) Tree lupin shrubland on dunes
- (b) Kanuka shrubland/forest on dunes

Pouto Lighthouse Bush (Q09 106 345)

- (a) Kanuka shrubland/forest on dunes and coastal faces.

Landform/geology

Holocene beach sands, transverse and parabolic sand dunes, and interdune wetlands; coastal cliffs eroded in mid-late Pleistocene (Karioitahi Group) consolidated dune sand at Kaipara North Head.

Vegetation

This vast dune system stretches from the small un-named lakes in the north to Pouto Lighthouse at North Kaipara Head in the south. It is bordered by plantation and pasture in the east and by the Tasman Sea in the west. Between the semi-consolidated rear dunes to the west and the largely afforested older consolidated dunes to the east lies a string of substantial lakes and associated wetlands, the largest of which is Lake Mokeno. In places, vegetation types are contiguous with remnants on the older, more consolidated dunes to the east.

There are seven major plant communities.

- (a) Sandfield. Frontal dune vegetation consists of occasional pingao, spinifex, coastal toetoe, tauhinu, and sand sedge. Rear dune vegetation consists of occasional coastal toetoe, pampas, kanuka, tree lupin, spinifex, marram, knobby clubrush, sand coprosma, and tauhinu. Frontal dune vegetation is scattered throughout dunes, whereas vegetation on rear dunes is concentrated in sheltered pockets.
- (b) Kanuka shrub duneland comprises extensive areas of open shrubland

on rear dunes, dominated by kanuka. The characteristic species of rear dunes are also present in varying amounts.

- (c) Oioi rushland in dune slacks of the semi-consolidated rear dunes consists of abundant to common oioi, frequent manuka and pampas, frequent to occasional *Baumea juncea*, and occasional manuka, tauhinu, knobby clubbrush, coastal toetoe, *Eleocharis sphacelata*, arching clubmoss, *B. rubiginosa*, raupo, swamp millet, *E. acuta*, and tree lupin. It was not possible to map oioi rushland separately and is mapped together with the more extensive (b) shrub duneland.
- (d) Kanuka shrubland on semi-consolidated rear dunes consists of abundant to common kanuka, common to frequent *Baumea juncea* and pampas, frequent to occasional oioi, manuka, and pohuehue, and occasional thick-leaved coprosma, *Lepidosperma laterale*, hangehange, mingimingi, prickly heath, *Coprosma rhamnoides*, mapau, tree lupin, sand coprosma, korokio, coastal toetoe, and mapau. On damper sites, kanuka is replaced by manuka, with common to occasional *B. juncea* and pampas and occasional oioi, hangehange, mamaku, ponga, and wheki.
- (e) Mixed freshwater wetlands, including some seasonally inundated ones, on alluvium. *Lacustrine* fringes are dominated by raupo, with *Baumea articulata*, kuta, and *Eleocharis acuta* common to frequent. The composition of wetlands varies considerably but widespread dominants are raupo, *B. juncea*, *B. articulata*, *B. rubiginosa*, and kuta. A wide range of native (oioi, *E. sphacelata*, *Carex secta*, pale rush, ti kouka, manuka, *Isolepis prolifer*, *C. geminata*, giant umbrella sedge, native willow weed, *C. virgata*, *E. acuta*, harakeke, marsh fern, *Hypolepis distans*, swamp kiokio, *Carex maorica*, swamp millet, water fern, bracken, ti kouka, *B. arthrophylla*, karamu, mapau, *Thelymitra pulchella*, *Isolepis cernua*, and *Myriophyllum propinquum*) and adventive (pampas, purple umbrella sedge, oval sedge, *Juncus sonderianus*, Mercer grass, Mexican devil, *Polygonum strigosum*, and water purslane) species are present occasionally.
- (f) Pohuehue vineland on rear dunes. Common species are knobby clubbrush; while tauhinu, tree lupin, coastal toetoe, pampas, sand wind grass, and quaking grass occur occasionally.
- (g) Kanuka forest on hillslopes on the inland side consists of abundant kanuka, frequent to occasional *Baumea juncea*, and occasional thick-leaved coprosma, *Lepidosperma laterale*, hangehange, common broom, knobby clubbrush, korokio, mingimingi, prickly heath, *Coprosma rhamnoides*, *C. parviflora*, mapau, manuka, fivefinger, harakeke, pampas, karamu, kohuhu, ti kouka, mahoe, pale rush, bracken, and oioi.
- (h) Lake Oteone (3 ha of open water)
Lake Karaka (11 ha of open water)
Lake Mokeno (148 ha of open water)
Lake Whakaneke (21 ha of open water)
Lake Matthews (Stick Lake) (40 ha of open water)

Significant flora

Sebaea ovata (Nationally Critical) has recently been translocated to the dunes (Forester & Townsend 2004) but did not survive; the site appears too unstable. The Pouto dune system is the Northland stronghold of marsh fern (Gradual Decline) (including AK 252344) and sand spike-sedge (Gradual Decline) (including 2003, AK 284635). Pingao, recorded during this survey, also in Gradual Decline. *Gunnera dentata* (Cameron et al. 2001), *G. prorepens* (2000, AK 248035), *Myriophyllum votschii* (including AK 252641), *Glossostigma elatinooides* (Lake Mokeno: Wells et al. 2007). Ladies' tresses (2001, AK 252671), *Psilotum nudum* (1996, AK 228957), rohutu (1987, AK 180267), *Hebe diosmifolia* (1987, AK 180253), thick-leaved coprosma, and sand coprosma, both recorded during this survey, are all Regionally Significant.

Fauna

Northern dunes P09 015 467: Northern New Zealand dotterel (Nationally Vulnerable), Caspian tern (Nationally Vulnerable), banded dotterel (Gradual Decline), variable oystercatcher (Regionally Significant), South Island pied oystercatcher, pied shag, black-backed gull.

Roundhill P09 019 461: Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered) (SSBI P09/H001*4, 1977). Wrybill (Nationally Vulnerable: OSNZ CSN 1978). Northern New Zealand dotterel (Nationally Vulnerable) (this survey). New Zealand dabchick (Sparse), black shag (Sparse), little black shag (Sparse) (SSBI P09/H001*4, 1977), North Island fernbird (Sparse) (this survey). Australasian little grebe (Regionally Significant) (OSNZ CSN 1989). New Zealand scaup (Regionally Significant), pied shag, white-faced heron, Australasian harrier, Australasian shoveler (Regionally Significant), Pacific swallow (SSBI P09/H001*4, 1977). Australasian pied stilt (OSNZ survey 1995). Hawksbill sea turtle (Regionally Significant) recorded in 1972 and shore skink in 1991 (DOC Bioweb).

Lake Oteone P09 027 450: New Zealand dabchick (Sparse), black shag (Sparse), North Island fernbird (Sparse), pied shag, New Zealand kingfisher.

North of Lake Karaka P09 034 441: North Island fernbird (Sparse), Australasian harrier, New Zealand kingfisher, North Island fantail. Shore skink found dead in 1985 (DOC Bioweb).

Lake Karaka P09 143 422: Giant kokopu (Gradual Decline), longfin eel (Gradual Decline), shortfin eel, common bully (NIWA 2007). Grey duck (Nationally Endangered), New Zealand dabchick (Sparse), little shag (Sparse), little black shag (Sparse) (SSBI P09/H001*2, 1977). North Island fernbird (Sparse), black shag (Sparse) grey teal (Regionally Significant), New Zealand scaup (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, black-backed gull, (OSNZ surveys 1973-1995). Pacific swallow (SSBI P09/H001*2, 1977). This is the only record in Northland of giant kokopu.

Between Lakes Karaka and Mokeno P09 046 417: Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), New Zealand

dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse), North Island fernbird (Sparse), spotless crane (Sparse), New Zealand scaup (Regionally Significant), grey teal (Regionally Significant), paradise shelduck, Australasian shoveler (Regionally Significant), pied shag, Australasian harrier, pukeko, spur-winged plover, Pacific swallow, New Zealand kingfisher (OSNZ surveys 1979-1994).

Lake Mokeno P09 051 390, P09 049 407: Freshwater mussel (Gradual Decline) (Wells et al. 2007). Shortfin eel, common bully, inanga (NIWA 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered) (SSBI P09/H003*3, 1977). Caspian tern (Nationally Vulnerable), white-fronted tern (Gradual Decline) (OSNZ surveys 1973-1994). New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse) (SSBI P09/H003*3, 1977). Spotless crane (Sparse) (OSNZ CSN 2000). North Island fernbird (Sparse), little black shag (Sparse) (OSNZ surveys 1973-1994). New Zealand scaup (Regionally Significant), grey teal (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, black-backed gull, Pacific swallow (SSBI P09/H003*3, 1977). New Zealand kingfisher, silvereye, Australasian pied stilt, (OSNZ surveys 1973-1994).

Lake Whakaneke P09 058 366: Australasian bittern (Nationally Endangered) (OSNZ CSN 2000). Grey duck (Nationally Endangered), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse), spotless crane (Sparse), New Zealand scaup (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, Australasian pied stilt, Pacific swallow, New Zealand kingfisher (P09/H001*3, 1977) (OSNZ surveys 1981-1994).

Lake Matthews (Stick Lake) P09 074 346: Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), Caspian tern (Nationally Vulnerable), North Island fernbird (Sparse), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse), grey teal (Regionally Significant), New Zealand scaup (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, Australasian pied stilt, spur-winged plover, black-backed gull, Pacific swallow (OSNZ surveys 1973-1995). Pukeko, Australian bell frog. A feral pig wallow was also noted.

General: Brown teal (Nationally Endangered) were recorded on the Pouto dune system in 1977/1978 and there is one record of marsh crane (Sparse) by Cromarty & Scott (1996). Northern little blue penguin (Gradual Decline), Australasian gannet, Arctic skua, and fluttering shearwater have been recorded recently from the adjacent coastal waters, and black-billed gull (Serious Decline), New Zealand pigeon (Gradual Decline), banded rail (Sparse), tui, and shining cuckoo within the site (Robertson et al. 2007). Black katipo (Serious Decline) have also recently been recorded within the site (A. Booth, DOC, pers. comm.), and *Notoreas* sp. "Northern" in coastal herbfield in 2000 (B. Patrick, pers. comm.). New Zealand fur seals (Regionally Significant) regularly haul out at this site.

Significance

The Pouto dune system is a very large site of extremely high national and international importance, representing the best remaining example of a large, relatively unmodified sand dune system in the Kaipara ED (Northland). In the wider context, it is the best example in New Zealand of the particular suite of ecosystems that it contains (Cromarty & Scott 1996). It supports an impressive range of threatened plant and animal species, including a nationally and regionally important populations of northern New Zealand dotterel and significant populations of grey duck (R. Parrish, pers. comm.) It is also a geological site of National Importance (Kenny & Hayward 1996). Most of the lakes are currently free of pest fish species and invasive aquatic weeds, a reflection of their relative isolation and effective buffering by wetlands. Karaka was ranked High, Lake Mokeno Outstanding, and Lake Whakaneke High by Wells et al. (2007). However, royal fern has recently established at Lake Mokeno (currently being controlled by DOC), and alligator weed is now locally present (see Q09/054) near Lake Humuhumu (see Q09/054) (Wells et al. 2007).

Although the dune system as a whole is in good condition (the widespread invasion of rear dunes by pampas excepted), two significant threats exist. From Lake Oteone north, domestic stock has access in places from the east, and plant communities on the inland side locally show signs of light to moderate grazing. Open sandfield at the southern end is regularly accessed from Pouto by four-wheel motorcycles. Contains 5265.1 ha of At Risk land environment G1.1c. Just over two-thirds of the site is already protected in Pouto Conservation Area (2985.3 ha), Pouto North Conservation Area (943.7 ha), Pouto North Marginal Strip (18.8 ha), Pukekura Historic Area (1.4 ha), and Kaipara North Head Lighthouse Historic Reserve (7.8 ha), all administered by DOC. All ecological units are representative.

KELLY'S BAY/PUNAHAERE CREEK ESTUARY, SHRUBLAND AND FOREST

Survey no. P09/003
Survey date 23 January 2007
Grid reference P09 502 090
Area 500 ha
Altitude 0-90 m asl

Ecological units

- (a) Kanuka forest on hillslope and ridge crest (52%)
- (b) Oioi-*Baumea juncea* rushland on estuarine alluvium (16%)
- (c) Mangrove shrubland on estuarine alluvium (11%)
- (d) Manuka shrubland on colluvium (4%)
- (e) Manuka shrubland on alluvium (8%)
- (f) Open water (9%)

Landform/geology

Hillslopes eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, with Holocene intertidal, estuarine, alluvial and swamp deposits in valleys.

Vegetation

This site comprises

- (a) substantial tracts of secondary kanuka forest occupy hillslopes on the northern, western, and southern sides of Kelly's Bay and the northern and western sides of Punahaere Creek estuary. The only presence of towai on the peninsula was noted on seaward faces at the southern end of Kelly's Bay. There has been some woody weed invasion (pines, prickly hakea, pampas) on the fringes of kanuka forest tracts, but much of it is remarkably intact.
- (b) Small areas of oioi-*Baumea juncea* rush sedgeland occur at Kelly's Bay and in Punahaere Creek estuary.
- (c) There is a substantial tract of mangrove shrubland in Punahaere Creek estuary, now partly bisected by Kelly's Bay Road.
- (d) Narrow fringing strips of manuka shrubland occur on footslopes at Punahaere Creek estuary.
- (e) The upper reaches and heads of valleys at Punahaere Creek estuary are occupied by fingers of freshwater manuka shrub wetlands of very variable composition, reflecting wetness and degree of salinity.
- (f) Open water.

Significant flora

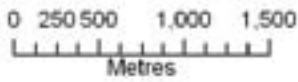
Marsh fern (Gradual Decline) was recorded (SSBI Q08/H047*4) in 1985.

Fauna






Kelly's Bay: Australasian bittern (Nationally Endangered), northern

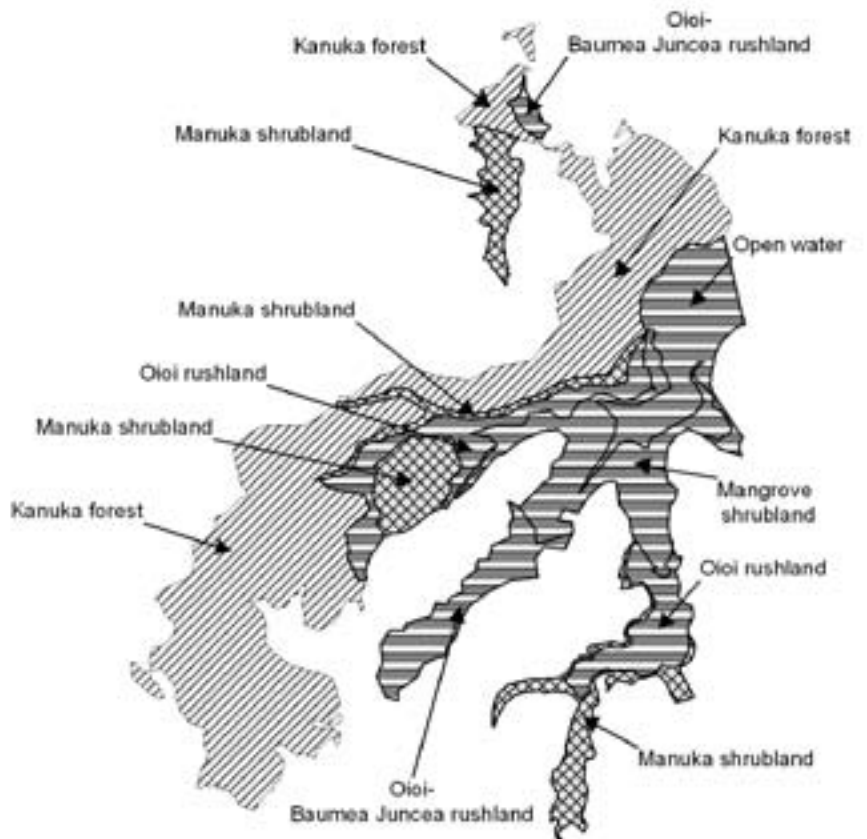


P09/003 Kelly's Bay/Punahaere Creek Estuary, Shrubland and Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

New Zealand dotterel (Nationally Vulnerable), Caspian tern (Nationally Vulnerable), banded dotterel (Gradual Decline), white-fronted tern (Gradual Decline), red-billed gull (Gradual Decline), North Island fernbird (Sparse) (SSBI Q08/H047*5 1977, 1989). Variable oystercatcher (Regionally Significant). Australasian harrier, Australasian pied stilt, South Island pied oystercatcher, black-backed gull, bar-tailed godwit, lesser knot, New Zealand kingfisher, silvereye, grey warbler (SSBI Q08/H047*5 1977, 1989). Pacific swallow, shining cuckoo, tui, North Island fantail.

Punahaere Creek: Australasian bittern (Nationally Endangered), Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), North Island fernbird (Sparse), banded rail (Sparse). Grey warbler, silvereye, North Island fantail, Australasian harrier, New Zealand kingfisher, Pacific swallow, New Zealand pipit, white-faced heron, pukeko, pied shag, black-backed gull, Australasian pied stilt, South Island pied oystercatcher, bar-tailed godwit (SSBIs P09/H005, Q08/H047*4, 1985). Auckland green gecko (Gradual Decline) (recorded by NZWS in 1980).

Significance

This large and important site supports threatened and regionally significant species and some intact sequences of plant communities, including substantial tracts of secondary kanuka forest embracing a range of saline and freshwater wetland communities in the intervening estuary and valleys. Despite some weed invasion of the kanuka forest, some of it is remarkably intact and supports the only occurrence of towai on the peninsula encountered in this survey. There has been attempted drainage in the past of the southernmost valley of Punahaere Creek estuary. Kelly's Bay is an important roosting site for migratory waders. Contains 64.3 ha of Acutely Threatened land environment A5.1b, 1.9 ha of Chronically Threatened environment A7.3a, and 296.1 ha of At Risk environment A6.1b. Nearly half the site is already protected in Punahaere Creek Conservation Area (229.9 ha), Punahaere Creek Government Purpose Wildlife Management Refuge (12.2 ha), and Tangitiki Bay Marginal Strip No 2 (0.4 ha), administered by DOC. Site for four representative ecological units: (a) Kanuka forest on hillslope and ridge crest, (b) Oioi-*Baumea juncea* rushland on estuarine alluvium, (c) Mangrove shrubland on alluvium, and (e) Manuka shrubland on alluvium.

UPPER OKARO BUSH

Survey no. P09/008
Survey date 23 January 2007
Grid reference P08 085 455
Area 34 ha
Altitude 40-130 m asl

Ecological units

- (a) Kauri-puriri-taraire forest on hillslope and alluvium (34%)
- (b) Kanuka forest on hillslope (66%)

Landform/geology

Hillslopes at landward edge of mid-late Pleistocene (Karioitahi Group) parabolic dunefield.

Vegetation

The kauri forest/broadleaved forest at this remarkable site provides an all-too rare glimpse of the pre-human forests of the Pouto Peninsula. The forest occupies both sides of a small north-south valley and comprises

- (a) a stand of ricker and submature kauri on the upper eastern slopes with taraire and puriri dominating the canopy on the lower slopes. A wide range of common lowland forest species is present, including some typical kauri associates like kauri grass. It is buffered to the west and south by
- (b) secondary kanuka forest of indifferent quality.

A pine stand on the eastern boundary has been felled recently.

Significant flora

Coprosma parviflora (Regionally Significant), recorded during this survey.

Fauna

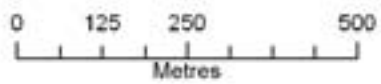
New Zealand pigeon (Gradual Decline), North Island fantail, shining cuckoo, grey warbler (R.J. Pierce, EcoOceania Ltd, pers. comm.). New Zealand kingfisher, tui, Australasian harrier.

Significance






Despite an imminent weed problem with woolly nightshade, the site is of outstanding importance as evidently the only one with kauri surviving on the southern Pouto Peninsula. It shows the range of species that more fertile sands have supported in the past, and represents a vital seed source for recolonisation of the extensive secondary stands of the ED by later successional species like taraire. The forest interior is in excellent condition. Contains 2.9 ha of Acutely Threatened land environment A5.1a, 1.6 ha of Chronically Threatened environment A7.3a, and 29.4 ha of At Risk environment A6.1b. Site for one representative ecological unit: (a) Kauri-puriri-taraire forest on hillslope and alluvium.

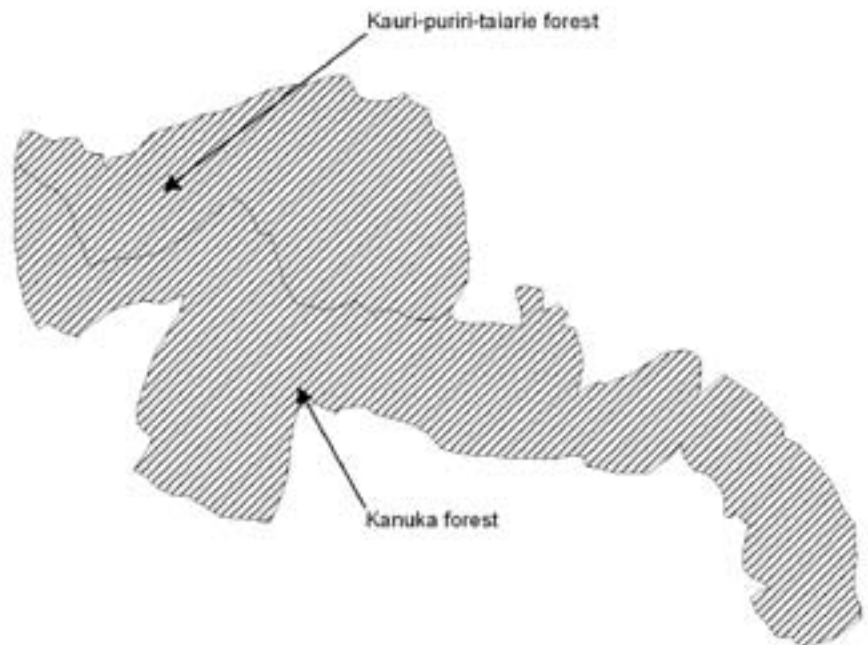


P09/008 Upper Okaro Bush



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

TAPU BUSH

Survey no.	P09/011
Survey date	24 January 2007
Grid reference	P09 071 426
Area	210 ha
Altitude	80-170 m asl

Ecological units

- (a) Kanuka forest on rear dunes
- (b) Totara-narrow-leaved maire-rewarewa forest on rear dunes
- (c) Karaka-puriri-totara forest on rear dunes (all forest units together comprise 93%)
- (d) Sandfield on rear dunes (7%)

Landform/geology

Holocene unconsolidated transverse sand dunes.

Vegetation

This large tract of forest on rear dunes has been described in detail by Reid (1977). It comprises a core of old-growth mixed conifer-broadleaved forest, mostly surrounded by a more extensive tract of secondary kanuka forest, and is buffered on all sides by exotic conifer plantation. They are not mapped separately.

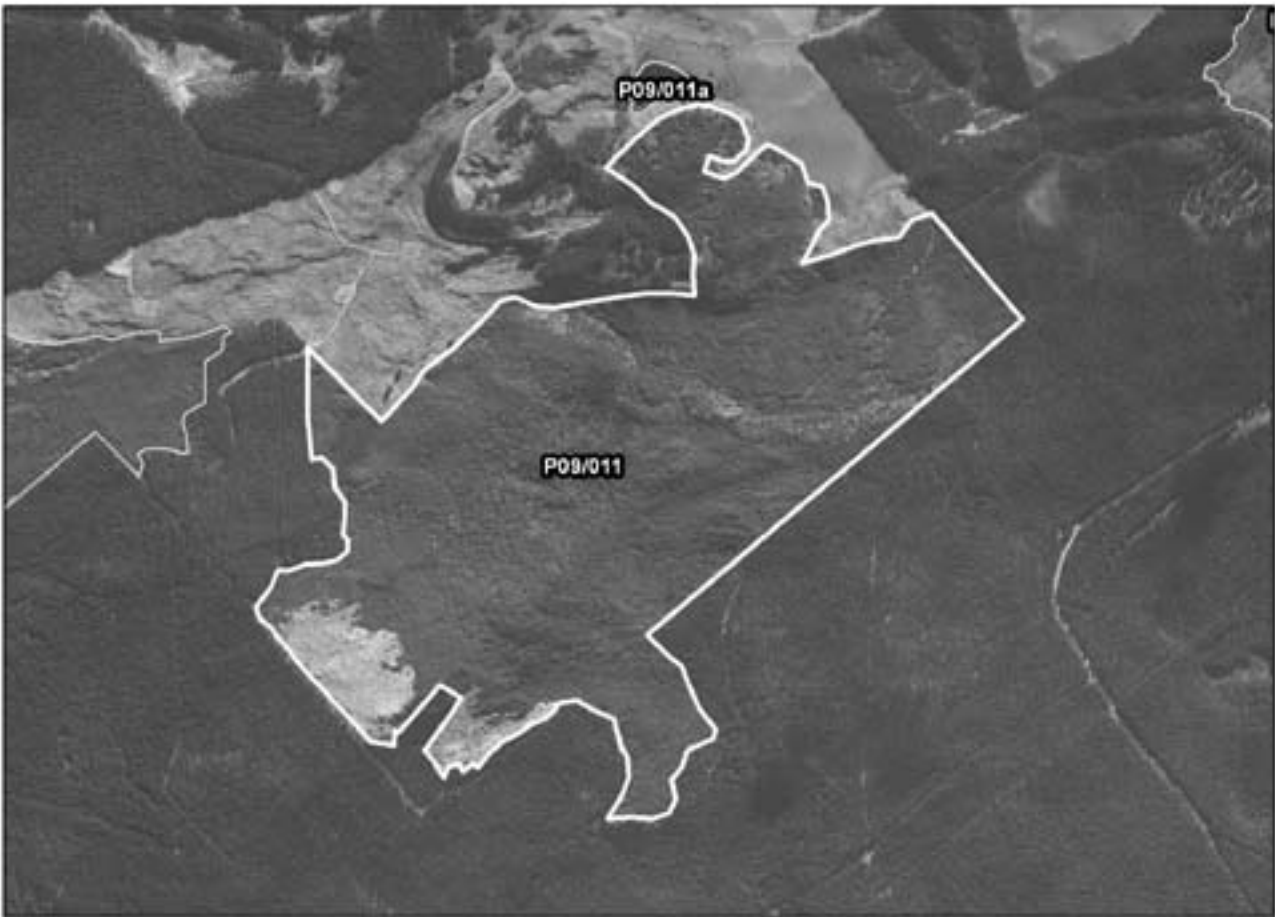
- (a) The subcanopy of the secondary kanuka forest consists of rewarewa and mapau, and there is a dense and varied understorey.
- (b) The canopy of the old-growth forest is dominated on dune crests and midslopes by totara, narrow-leaved maire, and rewarewa. Kohekohe locally reaches the canopy on midslopes.
- (c) In hollows, karaka, puriri, and totara are the canopy dominants.

Well-developed diverse subcanopies and understories are present throughout the old-growth units, including totara, rewarewa, narrow-leaved maire, kohekohe, lancewood, fierce lancewood, mahoe, small-leaved mahoe, tawa, titoki, puriri, karaka, mangeao, mapau, kohuhu, pate, kawakawa, rangiora, and *Coprosma* species.

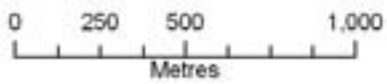
- (d) There are two areas of open dunes at the southwest edge with frequent coastal toetoe and pampas and occasional tauhinu and sand coprosma.

Significant flora






Hebe diosmifolia (1991, AK 205265), *Corokia cotoneaster* (1991, AK 205262), *Asplenium bookerianum* (1991, AK 205258), *Olearia albida* (Wright & Young 1991), and sand coprosma, recorded in this survey, are Regionally Significant. Historic records (Reid 1977) of fierce lancewood (Sparse), weeping matipo, true maidenhair, and northern rata, all Regionally Significant, none of which has been recorded in subsequent surveys.

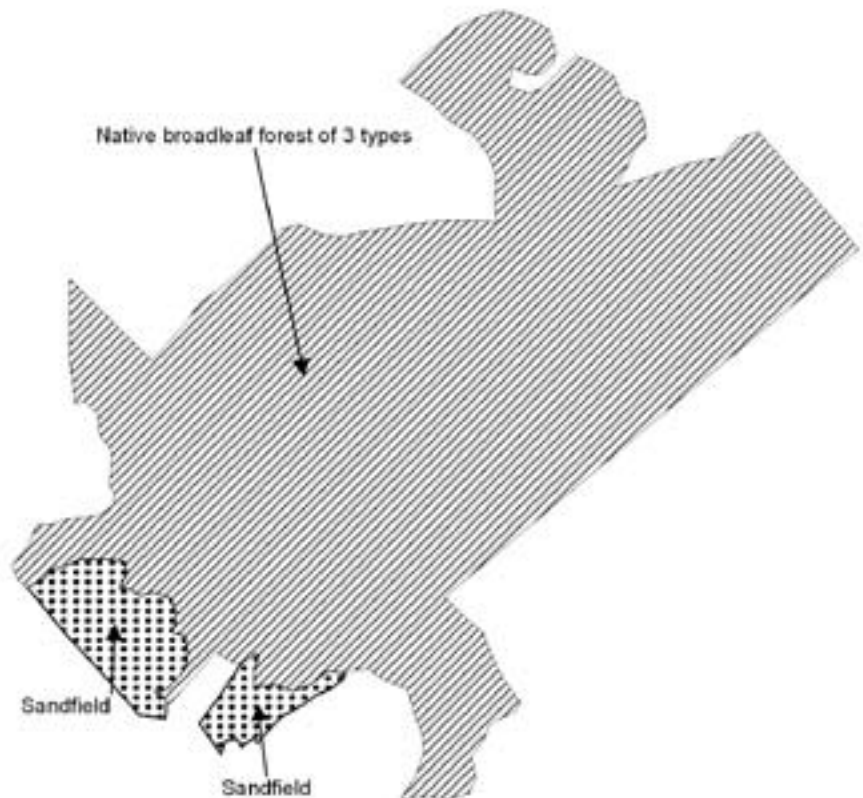


P09/011 Tapu Bush



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Fauna

North Island brown kiwi (Serious Decline), New Zealand kingfisher, morepork, grey warbler, North Island fantail, silvereye (SSBI P09/H007, 1989, 1992). Australasian harrier. A snail survey was conducted in 1998; only common species were found (SSBI P09/H007).

Significance

Tapu Bush is the largest and most significant old-growth forest remnant surviving on the Pouto Peninsula and one of the few examples of this forest type left in New Zealand. This site is of very high ecological significance and is justifiably well-known to the botanical community. Wright and Young (1991) commented on several unusual features, including the local dominance of very large, mature trees of narrow-leaved maire (a feature shared with Pretty Bush), the prevalence of normally epiphytic tank lilies (kahakaha, kowharawhara) on the forest floor, and the prevalence of filmy ferns on sandy soil. Ring counts of canopy trees suggest an age of at least 300 years for the old-growth forest. Comprehensive species lists were compiled by the Auckland Botanical Society on their visits (Wright & Young, 1991; Cameron et al. 2001). The moss flora has been documented by Beever (1991) and lichens by Hayward and Hayward (1991). Contains 1.1 ha of Chronically Threatened land environment A7.3a and 208.1 ha of At Risk environment G1.1c. Site for three representative ecological units: (a) Kanuka forest on rear dunes, and (b) Totara-narrow-leaved maire-rewarewa forest on rear dunes, and (c) Karaka-puriri-totara forest on rear dunes.

LAKE ROTOPOUUA, WETLAND AND FOREST

Survey no.	P09/014
Survey date	25 January 2007
Grid reference	P09 099 417
Area	49.5 ha
Altitude	55-100 m asl

Ecological units

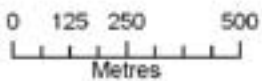
- (a) Kanuka forest on hillslopes (44%)
- (b) Raupo reedland on alluvium (3%)
- (c) Manuka-*Baumea arthropphylla*-raupo-*Carex secta* shrub reed-sedgeland on alluvium (44%)
- (d) Open water in dune lake (9%)

Landform/geology





Holocene transverse dunes, and lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene dunefield.

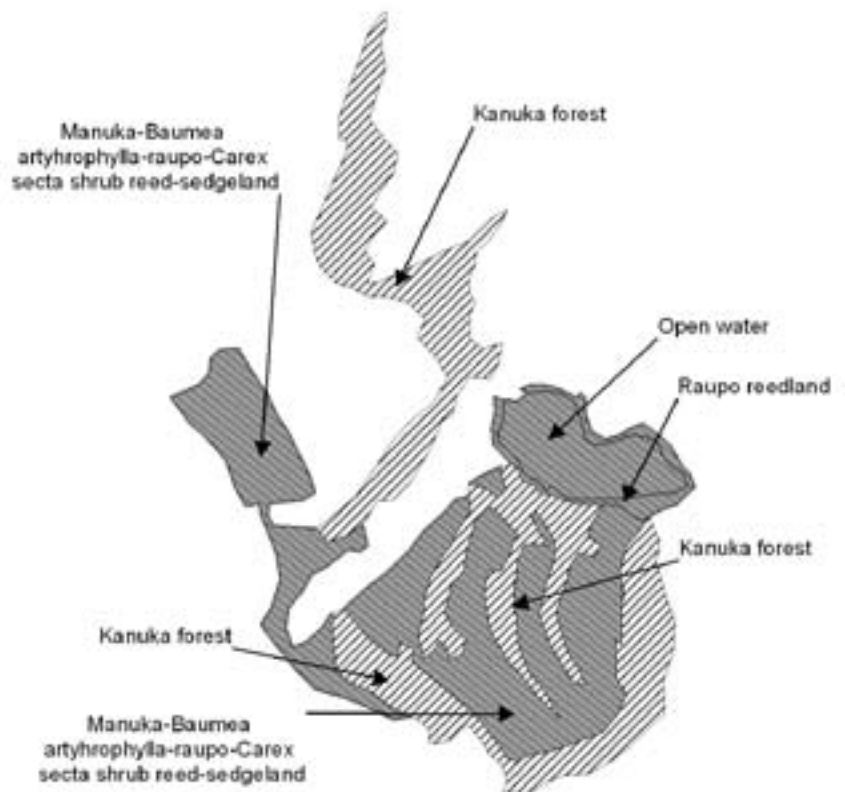


P09/014 Lake Rotopouua, Wetland and Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Vegetation

This site comprises a substantial wetland on the west of and contiguous with Lake Rotopouua, smaller discontinuous lacustrine fringes around the lake itself, and a finger of riparian forest along a feeder stream.

- (a) Kanuka forest is fenced and has occasional puriri, rewarewa, karaka, mahoe, and ti kouka.
- (b) Lacustrine fringes are dominated by raupo, with frequent kuta and *Carex secta*.
- (c) The main wetland is dominated variously by manuka, *Baumea arthropphylla*, raupo, and *C. secta*. Marsh fern is locally common.
- (d) Open water of Lake Rotopouua.

Significant flora

Marsh fern (Gradual Decline), burr-reed and *Corokia cotoneaster* (both Regionally Significant), all recorded during this survey.

Fauna

Dwarf inanga (Serious Decline), common bully (NIWA 2007). Australasian bittern (Nationally Endangered) (R. Parrish, pers. comm.). Grey duck (Nationally Endangered), black shag (Sparse), little shag (Sparse), spotless crane (Sparse) (OSNZ surveys 1977-1994). North Island fernbird (Sparse), New Zealand dabchick (Sparse) (SSBI Q09/H003, 1989). New Zealand scaup (Regionally Significant) (OSNZ surveys 1977-1994). Australasian little grebe (Regionally Significant) (OSNZ CSN 2001). Grey teal (Regionally Significant) (R. Parrish, pers. comm.). Australasian harrier, white-faced heron, New Zealand kingfisher, Pacific swallow (OSNZ surveys 1977-1994). Grey warbler, silvereye, North Island fantail, pukeko, (SSBI Q09/H003, 1989). Paradise shelduck, morepork (R. Parrish, pers. comm.). Tui.

Significance

An important site, in very good condition, supporting a range of threatened and regionally significant species and apparently largely weed-free. The wetland is well buffered by plantation forestry on its western and northern sides. Contains 4.5 ha of Chronically Threatened A7.3a and 40.1 ha of At Risk G1.1c. Over half the site is already protected Rotopouua Creek Conservation Area (28.4 ha), administered by DOC. Site for three representative ecological units: (a) Kanuka forest on hillslopes, (b) Raupo reedland on alluvium, and (c) Manuka-*Baumea arthropphylla*-raupo-*Carex secta* shrub reed-sedgeland on alluvium.

LAKE ROTOTUNA AND WETLAND

Survey no.	P09/205
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	P09 040 495
Area	8.7 ha
Altitude	120 m asl

Ecological units

- (a) Raupo-*Eleocharis sphacelata*-*E. acuta*-kuta reedland on alluvium.
- (b) *Glossostigma elatinoides*-*Lilaeopsis novae-zealandiae* herbfield on alluvium (both units together comprise (17%))
- (c) Open water in dune lake (83%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene parabolic dunefield.

Vegetation

There is

- (a) a lacustrine fringe of Raupo-*Eleocharis sphacelata*-*E. acuta*-kuta reedland around about half the lake. The invasive adventive sweet grass is locally present.
- (b) Littoral herbfield comprises *Glossostigma elatinoides* and *Lilaeopsis novae-zealandiae*.
- (c) Open water in dune lake.

Significant flora

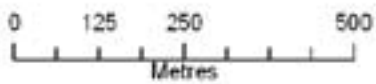
Glossostigma elatinoides (Regionally Significant) (Wells et al. 2007). Historical record of *Dicksonia fibrosa* (P. Anderson, pers. comm.). *Stuckeria pectinata* (Sparse) was recorded by NIWA in 2005 but was not seen in a subsequent survey in 2007 (Wells et al. 2007).

Fauna






Dwarf inanga (Serious Decline), common bully (NIWA 2007). Australasian bittern (Nationally Endangered), brown teal (Nationally Endangered), grey duck (Nationally Endangered) (OSNZ surveys 1972-1994). Reef heron (Nationally Vulnerable) (SSBI P09/H002), 1977, 1989). Caspian tern (Nationally Vulnerable) (OSNZ surveys 1972-1994). New Zealand dabchick (Sparse), black shag (Sparse), little black shag (Sparse), little shag (Sparse), New Zealand scaup (Regionally Significant) (SSBI P09/H002), 1977, 1989). Grey teal (Regionally Significant) (OSNZ surveys 1972-1994). Paradise shelduck, Australasian harrier, pukeko, Australasian pied stilt, spur-winged plover (SSBI P09/H002), 1977, 1989). Pied shag, white-faced heron, Australasian shoveler (Regionally Significant), Australasian harrier, black-backed gull, New Zealand kingfisher, Pacific swallow (OSNZ surveys 1972-1994).

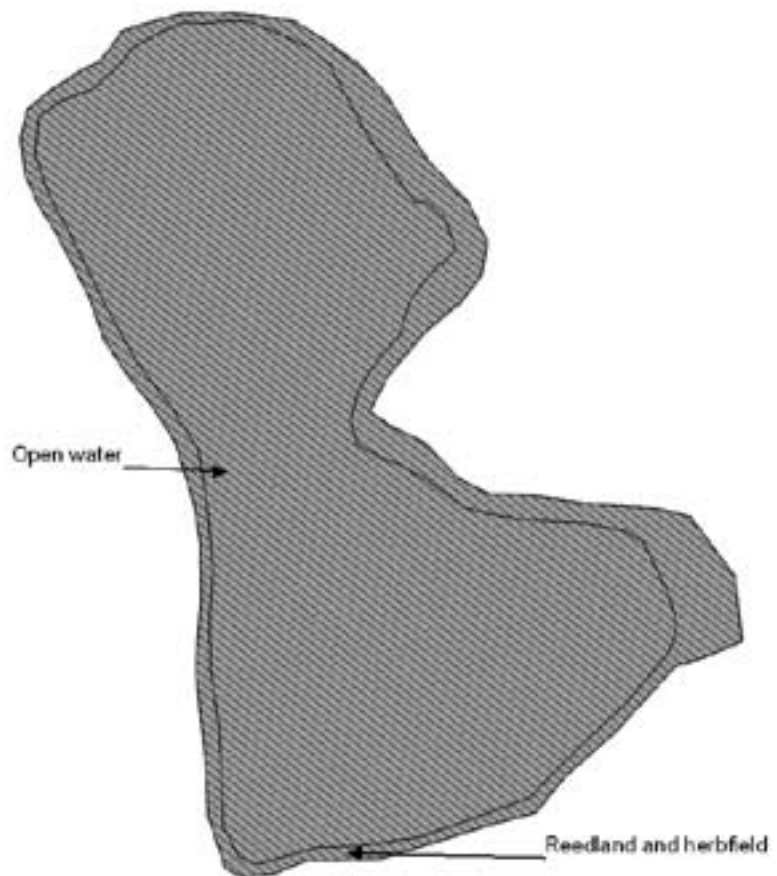


P09/205 Lake Rototuna and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Significance

Ranked High by Wells et al. (2007) because of the presence of threatened species and retired margins. Despite recent fencing and riparian restoration planting, pest fish (gambusia: Wells et al. 2007; rudd: NIWA 2007) and plant (sweet grass, found for the first time in 2007) species compromise its value somewhat. Contains 1.3 ha of Chronically Threatened land environment A7.3a. A small proportion of the site is already protected in Rototuna Lake Conservation Area (0.4 ha), administered by DOC.

OKARO CREEK/WAIKERE CREEK DUNELAND, WETLAND AND SHRUBLAND

Survey no.	Q09/051
Survey date	24-25 January 2007
Grid reference	Q09 136 448, Q09 142 426
Area	555 ha
Altitude	0-85 m asl

Ecological units

- (a) Kanuka shrubland/forest on hillslope (37%)
- (b) Kanuka shrubland on colluvium (3%)
- (c) Manuka shrubland on alluvium (8%)
- (d) Raupo reedland on alluvium (4%)
- (e) Mixed wetland on alluvium (3%)
- (f) Oioi-sea rush rushland on estuarine alluvium (<1%)
- (g) Mangrove shrubland on estuarine alluvium (16%)
- (h) Kanuka shrubland and forest on sand dunes (3%)
- (i) Spinifex sandfield on dunes (<1%)
- (j) Open water in estuary (25%)

Landform/geology

Hillslopes eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, with Holocene intertidal, estuarine, alluvial and swamp deposits in valleys.

Vegetation

This large site comprises a range of plant communities in and around the extensive Okaro Estuary and the much smaller Waikere Estuary to the south.

- (a) Secondary kanuka shrubland/forest with occasional radiata pine on hillslopes grades into
- (b) kanuka shrubland on footslopes, which in turn grades into
- (c) manuka shrubland with *Baumea juncea* (nearer the sea) or *B. rubiginosa* (further inland) ground layers on alluvium,
- (d) raupo reedland with frequent to occasional *Baumea articulata* and

occasional pampas, manuka, harakeke, and swamp millet on alluvium and

- (e) mixed wetlands of variable composition with common *Baumea teretifolia* and frequent manuka, raupo, and oioi. Towards the inlet, this grades into mosaics of
- (f) oioi and sea rush rush-reedland. Shore tussock and *Baumea juncea* occur frequently with occasional sharp rush, knobby clubrush, saltmarsh ribbonwood, manuka, and pampas. This grades into
- (g) mangrove shrubland with occasional sea primrose, glasswort, and *Baumea juncea*. There are small areas of
- (h) kanuka forest and shrubland with occasional to frequent radiata pine on sand dunes; knobby clubrush, kanuka, and pampas are also frequent in the canopy with occasional black wattle, harakeke, buffalo grass, marram, spinifex, sea primrose, gorse, mingimingi, shore bindweed, shore tussock, manuka, paspalum, and sand wind grass.
- (i) Very small areas of foredune are dominated by spinifex.
- (j) Open water in estuary.

Significant flora

Pimelea tomentosa (Serious Decline), recorded from kanuka shrubland on colluvium during this survey, and pingao (Gradual Decline) (SSBI Q08/H047*1).

Fauna

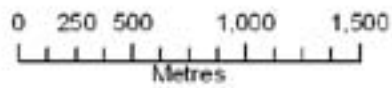
Banded kokopu (Regionally Significant) (DOC survey 2001). Australasian bittern (Nationally Endangered) (R.J. Pierce, EcoOceania Ltd, pers. comm.). Grey duck (Nationally Endangered), northern New Zealand dotterel (Nationally Vulnerable) (SSBI Q08/H047*1, 1977, 1989; SSBI Q08/H047*3, 1977). Caspian tern (Nationally Vulnerable), this survey. Northern little blue penguin (Gradual Decline) nest on the coast south of Waikere Estuary (L. Forrest, pers. comm.). Little shag (Sparse), banded rail (Sparse), spotless crake (Sparse), North Island fernbird (Sparse), variable oystercatcher (Regionally Significant), pied shag, white-faced heron, black-backed gull, Australasian harrier, pukeko, South Island pied oystercatcher, Australasian pied stilt, spur-winged plover, bar-tailed godwit, New Zealand kingfisher, Pacific swallow, North Island fantail, grey warbler, silvereye (SSBI Q08/H047*1, 1977, 1989; SSBI Q08/H047*3, 1977). North Island fernbird were common in saltmarsh and shrubland-reedland at Okaro Creek in 2007, and banded rail in mangroves and adjacent saltmarsh at Okaro Creek in 2007 (R.J. Pierce, EcoOceania Ltd, pers. comm.).

Significance

Okaro Creek is the largest of the Kaipara Harbour estuaries in the ED, and contains excellent sequences of plant communities, largely buffered by exotic conifer plantation. Kanuka forest on hillslopes and sand dunes on the southern side of the estuary has been degraded by woody weed (mostly black wattle and radiata pine) invasion. In common with some other Kaipara estuaries, the upper reaches of Waikere Creek have been

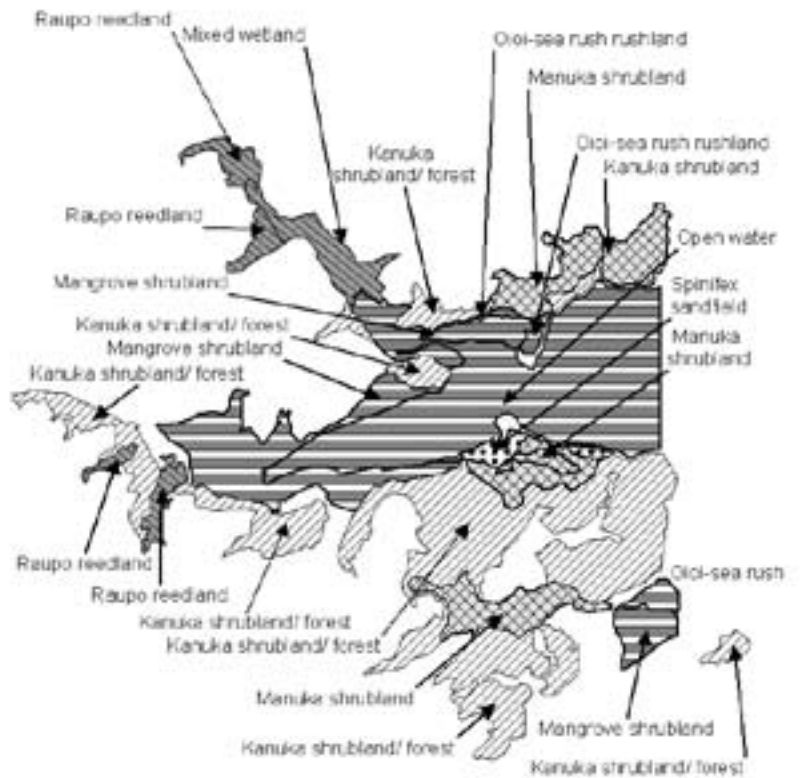


Q09/051 Okaro Creek/Waikere Creek Duneland, Wetland and Shrubland



Habitat Type

- Duneland
- Estuarine
- Forest
- Shrubland
- Wetland



Aerial photography from 2002

drained. Okaro Creek estuary is one of the most important roosting site for migratory waders in the Northland portion of the ED, 2000 bar-tailed godwits having been recorded in 2000 (R. Parrish, pers. comm.). Northern New Zealand dotterel were recorded breeding here in 1989 (R. Parrish, pers. comm.) and may still do so. Contains 47.6 ha of Acutely Threatened environment A5.1b, 7.2 ha of Chronically Threatened land environment A7.3a, and 97.3 ha of At Risk environments A4.1a and A6.1c. Site for four representative ecological units: (a) Kanuka forest/shrubland on hillslope, (c) Manuka shrubland on alluvium, (d) Raupo reedland on alluvium, (f) Oioi-sea rush rushland on estuarine alluvium, and (g) Mangrove shrubland on estuarine alluvium.

WETLAND EAST OF LAKE ROTOPOUUA

Survey no. Q09/053
Survey date 25 January 2007
Grid reference Q09 105 421
Area 20 ha
Altitude 60 m asl

Ecological units

- (a) Manuka-*Baumea articulata* shrub reedland on alluvium (50%)
- (b) Raupo reedland on alluvium (50%)

Landform/geology

Holocene swamp deposits in depressions on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene transverse dunefield.

Vegetation

This site comprises a substantial wetland east of Lake Rotopouua and isolated in pasture matrix. Although unfenced, deep drains around it appear to exclude domestic stock.

- (a) The main wetland, comprising a variable mosaic of shrub and herbaceous wetland species, is dominated by manuka with common *Baumea articulata*, wire rush, tangle fern, and *Eleocharis sphacelata*.
- (b) Raupo reedland at the southern end is locally dominated by *Baumea articulata* or *Eleocharis sphacelata*.

Significant flora

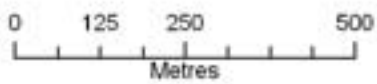
Wire rush (Regionally Significant), recorded during this survey.

Fauna






North Island fernbird (Sparse), New Zealand kingfisher, Australasian harrier.

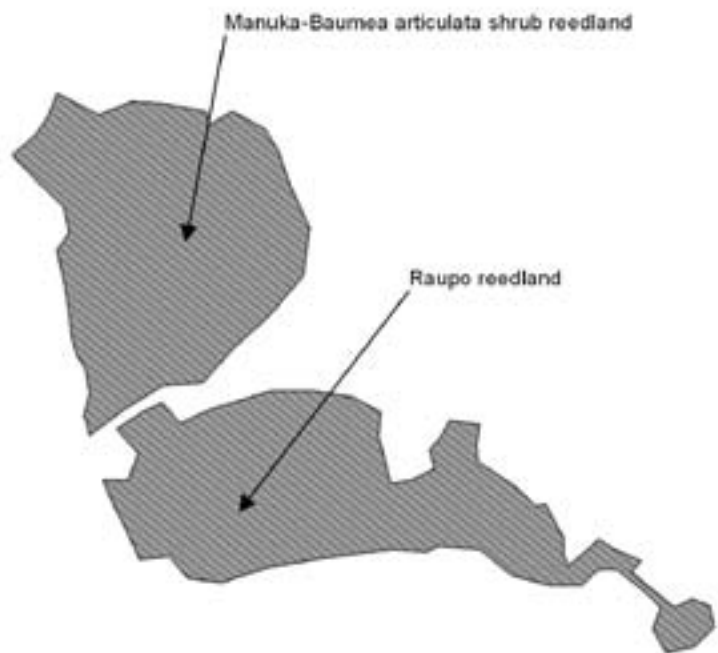


Q09/053 Wetland East of Lake Rotopouua



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Significance

Despite its isolation in a pastoral matrix, this is a regionally important wetland with the only population of wire rush (Regionally Significant) seen on the Pouto Peninsula. It also supports a threatened species, North Island fernbird. Unlike almost all other wetlands in the ED, it gives every indication of an oligotrophic (nutrient-poor) status. Contains 0.2 ha of Chronically Threatened land environment A7.3a and 19.3 ha of At Risk environment G1.1c. Site for one representative ecological unit: (a) *Manuka-Baumea articulata* shrub reedland on alluvium.

LAKE HUMUHUMU, WETLAND AND FOREST

Survey no.	Q09/054
Survey date	25 January 2007
Grid reference	Q09 115 409
Area	268 ha
Altitude	50-85 m asl

Ecological units

- (a) Kanuka forest/shrubland on hillslope (47%)
- (b) Raupo reedland on alluvium (2%)
- (c) Manuka-raupo shrub reedland on alluvium (3%)
- (d) Kanuka forest on hillslope (1%)
- (e) Kohekohe-karaka-mahoe forest on hillslope (1%)
- (f) Open water in dune lake (46%)

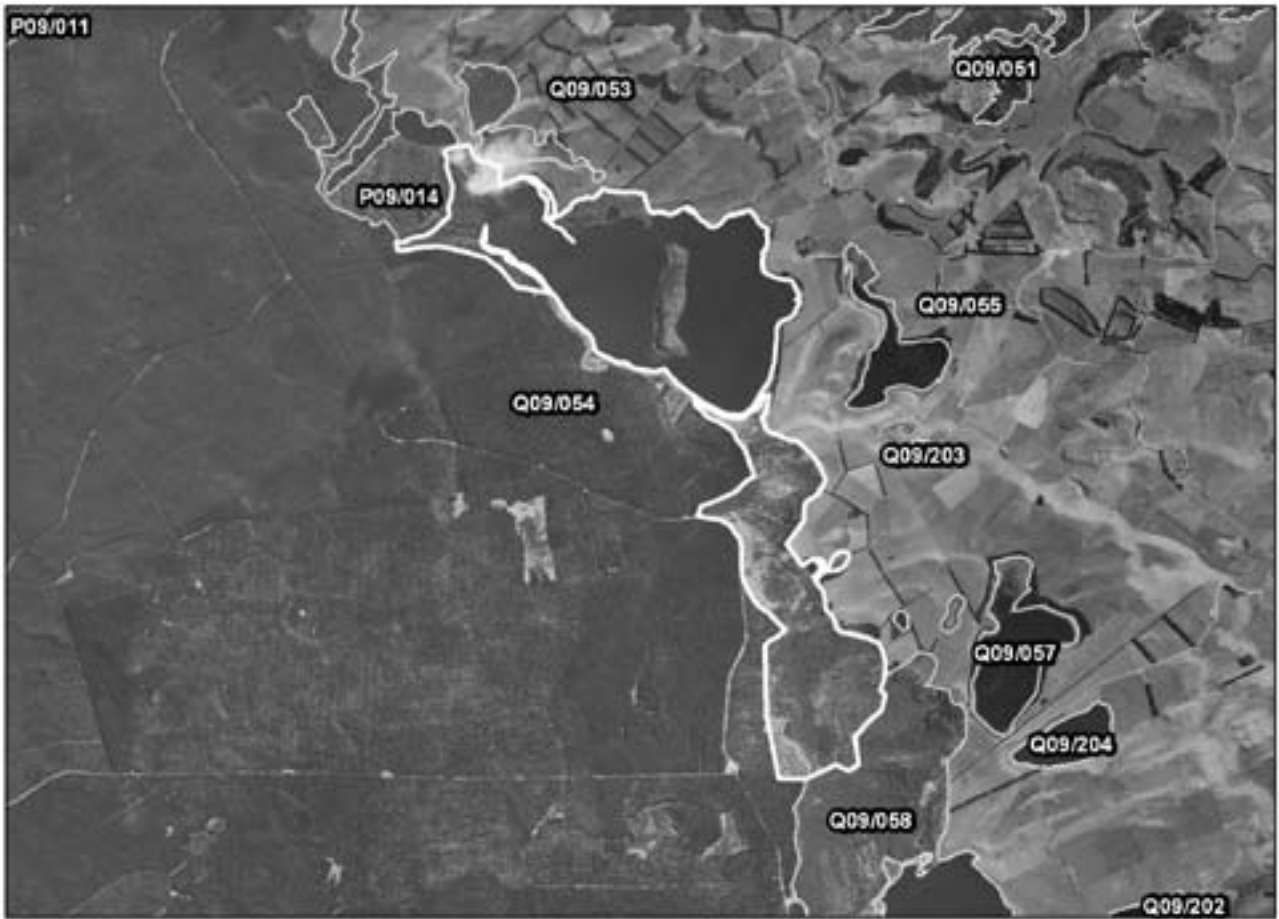
Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene transverse dunefield. The island in Lake Humuhumu is formed of consolidated (Karioitahi Group) dune sand. This site also includes Holocene transverse dunes to the northwest and south of Lake Humuhumu.

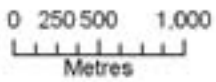
Vegetation

This site comprises Lake Humuhumu, a substantial island within it, and adjacent hillslopes at the northern end of the lake. It is only partially fenced and bordered by pasture on the north and east and plantation forest on the west.

- (a) Kanuka forest/shrubland on hillslopes at the northern and southern ends appears to be free of grazing and has a well-developed understorey of secondary species such as mahoe, mapau, mingimingi, prickly heath, karaka, and lancewood.
- (b) There is a discontinuous fringe of raupo reedland around the shoreline, dominated by raupo and *Eleocharis sphacelata*. A wide range of other species is present, including *Glossostigma elatinoides* (Wells et al. 2007).

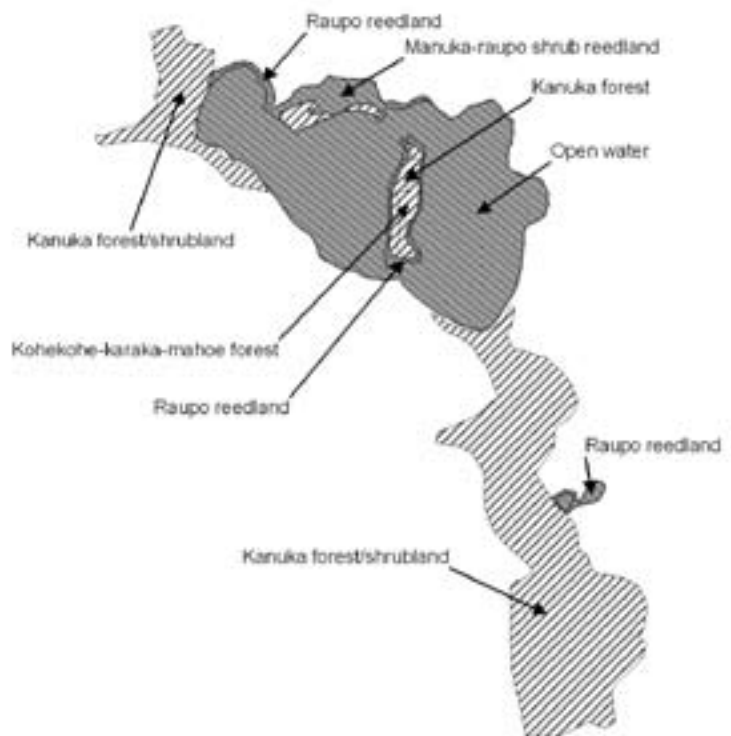


Q09/054 Lake Humuhumu, Wetland and Forest



Habitat Type

- Duneland
- Estuarine
- Forest
- Shrubland
- Wetland



Aerial photography flown 2002

- (c) On the eastern side, there are substantial pockets of shrub wetland dominated by manuka, raupo, *Baumea articulata*, *B. arthropbylla*, and *B. juncea*. A wide range of other species is present, including substantial populations of nationally threatened (marsh fern) and regionally significant (forked sundew, burr-reed, and arrow grass) species.
- (d) Kanuka forest on the substantial un-named island (12 ha) comprises secondary kanuka forest on the western side.
- (e) Secondary broadleaved forest dominated by kohekohe, with karaka and mahoe common, occurs on the eastern side of the island. An absence of domestic stock has led to lush understorey and ground layers in places.

Significant flora

Hydatella inconspicua (Wells et al. 2007) and *Pimelea tomentosa* (DOC Bioweb), both in Serious Decline. Willow-leaved maire (SSBI Q09/H004) and marsh fern (both in Gradual Decline), recorded during this survey. *Blechnum fluviatile* (2001, AK 252702), forked sundew, burr-reed, arrow grass (all recorded during this survey), *Glossostigma elatinooides* and *Myriophyllum votschii* (Wells et al. 2007), are all Regionally Significant. Historical record of sand pimelea (Serious Decline) in 1920 (AK 101198 and AK 101199).

Fauna

Dwarf inanga (Serious Decline), koura (Gradual Decline) (NIWA 2007), freshwater mussel (Gradual Decline) (Wells et al. 2007). Common bully, freshwater jellyfish (NIWA 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), little black shag (Sparse), spotless crake (Sparse) (SSBI Q09/H004, 1981, 1990, 1999). North Island fernbird (Sparse), Australasian little grebe (Regionally Significant) (OSNZ surveys 1973-1994). New Zealand scaup (Regionally Significant), pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, Australasian pied stilt, spur-winged plover, black-backed gull, Pacific swallow, grey warbler, North Island fantail, silvereye (SSBI Q09/H004, 1981, 1990, 1999). New Zealand kingfisher (OSNZ surveys 1973-1994).

Significance

Ranked Outstanding by Wells et al. (2007), Lake Humuhumu is the largest and deepest (16 m; Cromarty & Scott 1996) of the dune lakes on the eastern side of the Pouto Peninsula and supports many threatened and regionally significant species. An important site, because of its size and the range of habitats it supports, the lake is free of pest fish and invasive weeds, although alligator weed is present nearby (Wells et al. 2007). There has been limited weed incursion (pampas and brush wattle) on the island. With its potential to be kept free of possums and one of the largest kohekohe populations in the ED, the forest on the island

is particularly important. If fully fenced to exclude domestic stock, the conservation value of the lake itself would be considerably enhanced. A pied shag colony was present on the island in 1990, and the lake supports the largest population of New Zealand scaup in Northland (R. Parrish, pers. comm.). Contains 6.8 ha of Chronically Threatened land environment A7.3a and 125 ha of At Risk environment G1.1c. Nearly 40% of the site is already protected in Lake Humuhumu Marginal Strip (2.7 ha), Rotopouua Creek Conservation Area (9.6 ha), and Kanono Conservation Area (93.4 ha), administered by DOC. Site for three representative ecological units: (a) Kanuka forest/shrubland on hillslope, (c) Manuka-raupo shrub reedland on alluvium, and (e) Kohekohe-karaka-mahoe forest on hillslope.

LAKE ROTOOTUAURU, WETLAND AND FOREST

Survey no. Q09/055
Survey date 24 January 2007
Grid reference Q09 127 405
Area 21 ha
Altitude 40 m asl

Ecological units

- (a) *Glossostigma elatinoides* herbfield on alluvium;
- (b) Raupo reedland on alluvium (these two units together comprise 6%)
- (c) Raupo reedland with manuka on alluvium (4%)
- (d) Kanuka forest on alluvium (6%)
- (e) Open water in dune lake (84%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield.

Vegetation

This small lake, also known as Swan Lake, supports

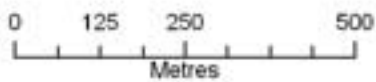
- (a) littoral herbfield dominated by *Glossostigma elatinoides*
- (b) lacustrine fringes dominated by raupo with frequent kuta, *Eleocharis sphacelata*, and *Baumea articulata*
- (c) a small, contiguous tract of raupo reedland with frequent manuka
- (d) a small tract of kanuka forest, and
- (e) open water.

Significant flora

Hydatella inconspicua (Serious Decline), *Gratiola sexdentata*, *Glossostigma elatinoides*, *Centipeda aotearoana* and *Myriophyllum votschii* (all Regionally Significant) (Wells et al. 2007). Historical record of *Myriophyllum robustum* (Gradual Decline) (1950, DOC Bioweb).

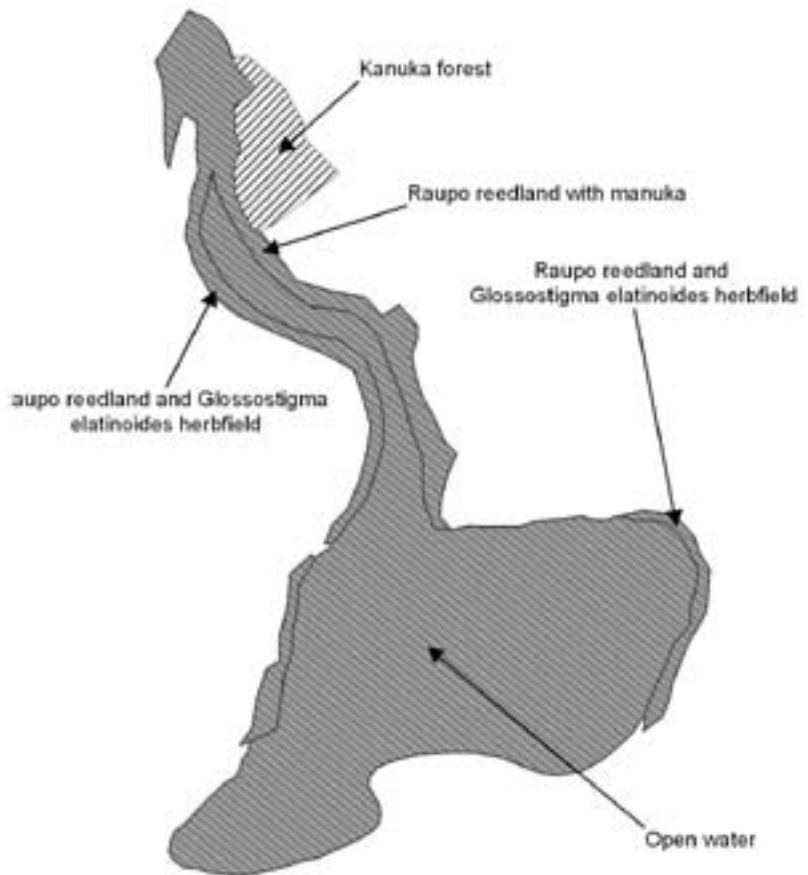


Q09/055 Lake Rotootuauru, Wetland and Forest



Habitat Type

- Duneland
- Estuarine
- Forest
- Shrubland
- Wetland



Aerial photography flown 2002

Fauna

Dwarf inanga (Serious Decline), longfin eel (Gradual Decline) (NIWA 2007). Freshwater mussel (Gradual Decline) (Wells et al. 2007). Australasian bittern (Nationally Endangered) (OSNZ surveys 1973-1995). Grey duck (Nationally Endangered), New Zealand dabchick (Sparse), black shag (Sparse) (SSBI Q09/H005, 1989, 1990). Little shag (Sparse), little black shag (Sparse), grey teal (Regionally Significant) (OSNZ surveys 1973-1995). New Zealand scaup (Regionally Significant), white-faced heron, paradise shelduck, Australasian harrier, pukeko, spur-winged plover, New Zealand kingfisher, Pacific swallow, North Island fantail (SSBI Q09/H005, 1989, 1990). Australasian shoveler (Regionally Significant), Australasian pied stilt, black-backed gull (OSNZ surveys 1973-1995).

Significance

Ranked Moderate by Wells et al. (2007). A degraded site whose quality has been compromised by domestic stock access, heavy aquatic weed (lakeweed, hornwort) invasion, and the local presence of alligator weed (Wells et al. 2007). Nevertheless, threatened plant and animal species are present, and it retains the potential for restoration by fencing and riparian planting. Lake Rotootuauru is currently the only lake in the ED with hornwort (A. Macdonald, pers. comm.), a highly invasive weed species whose presence here is of serious concern, given the proximity of the lake to the very important Lake Humuhumu. Contains 7.2 ha of Chronically Threatened land environment A7.3a. A very small proportion (1.8 ha) is already protected in Lake Rotootuauru Marginal Strip, administered by DOC.

TAUHARA CREEK ESTUARY, SANDFIELD, WETLAND AND SHRUBLAND

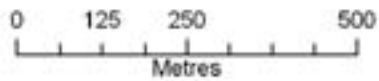
Survey no.	Q09/056
Survey date	30 November 2006
Grid reference	Q09 165 397
Area	35 ha
Altitude	0-40 m asl

Ecological units






- (a) Sandfield with spinifex grassland on foredune (3%)
- (b) Kanuka shrubland and treeland on rear dune (23%)
- (c) Manuka-mapau shrubland on islet summit (1%)
- (d) Kanuka forest on hillslope (5%)
- (e) Sea rush rushland on estuarine alluvium (26%)
- (f) Mangrove shrubland on estuarine alluvium (23%)
- (g) Open water in estuary (19%)

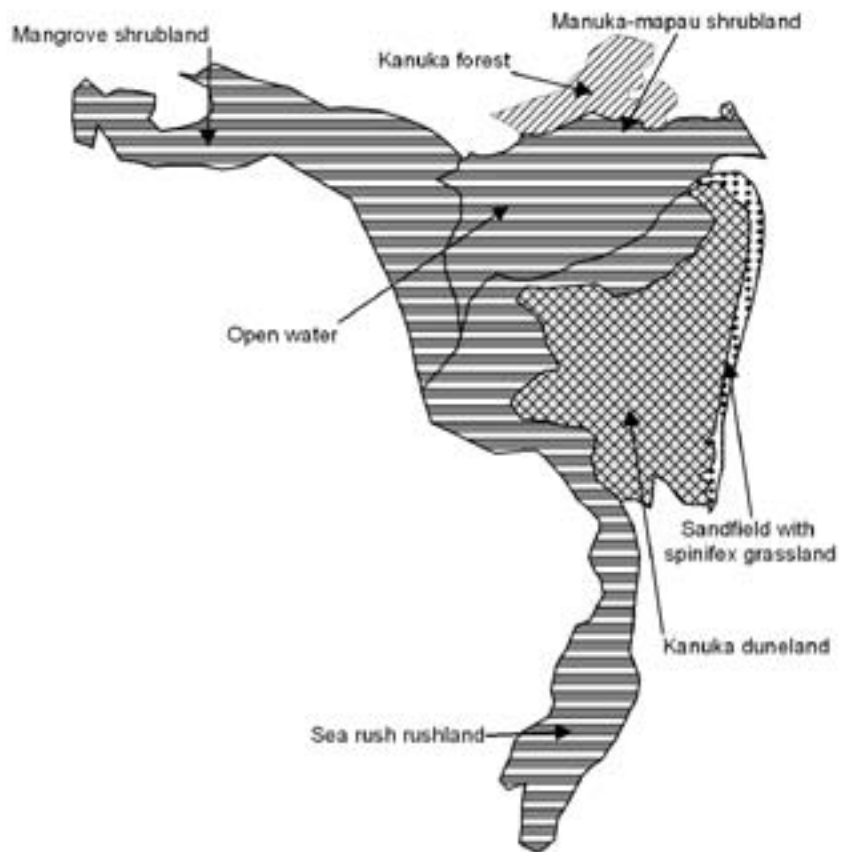


Q09/056 Tauhara Creek Sandfield, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Landform/geology

Holocene estuarine and beach sand deposits, and coastal cliff eroded in mid-late Pleistocene (Karioitahi Group) consolidated dune sand.

Vegetation

- (a) Foredune vegetation is relatively intact, although marram is present.
- (b) The rear dune is grazed and has been heavily invaded by adventives, including weeds like pampas and brush wattle. Also degraded by weed invasion is
- (c) Rocky islet which supports reputedly one of only a couple of populations of rengarenga in the ED (L. Forrest, pers. comm.).
- (d) Kanuka forest on the adjacent northern hillslope. The most intact vegetation occurs on the
- (e) Saltmarsh vegetation dominated by sea rush is quite extensive and largely intact, as is
- (f) Mangrove shrubland.
- (g) Open water in estuary.

Significant flora

Olearia solandri (Regionally Significant) (2001, AK 252693)

Fauna

Reef heron (Nationally Vulnerable) (this survey). Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), black shag (Sparse), banded rail (Sparse), North Island fernbird (Sparse), Australasian pied stilt, black-backed gull, white-faced heron, Australasian harrier, New Zealand kingfisher, Pacific swallow, grey warbler, North Island fantail, silvereye (SSBI Q08/H047*2, 1977, 1989). Pied shag, Australasian gannet.

Significance

Known locally as Sheehan's Creek, this diverse but rather fragmented site has been marred by stock access to most of it and by weed invasion. Although Tauhara Creek provides some roosting sites for waders (R. Parrish, pers. comm.) and supports a number of ecosystems with a good range of native, including threatened and regionally significant, species, most other Kaipara Harbour estuaries in the ED contain larger and less modified examples of similar vegetation types. Contains 0.7 ha of Chronically Threatened land environment A7.3a and 18.3 ha of At Risk environments A4.1a and A6.1b. A very small proportion of the site (0.4 ha) is already protected in Tauhara Creek Marginal Strip, administered by DOC.

LAKE ROTOKAWAU AND WETLAND

Survey no.	Q09/057
Survey date	25 January 2007
Grid reference	Q09 135 387
Area	36 ha
Altitude	35-60 m asl

Ecological units

- (a) Kuta-*Eleocharis sphacelata* reedland on alluvium
- (b) *Baumea articulata*-*Eleocharis sphacelata* reedland on alluvium (both wetland units together comprise 32%)
- (c) Open water in dune lake (68%)

Landform/geology

Lakes and Holocene swamp deposits in depressions on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield.

Vegetation

This site comprises one substantial lake and two small lakes west of it.

- (a) There is a discontinuous fringe of kuta and *Eleocharis sphacelata* around the edge of Lake Rotokawau.
- (b) Two small lakes support lacustrine reedland dominated by either *Baumea articulata* or *Eleocharis sphacelata*, with raupo and sweet grass also present
- (c) Open water in dune lake.

Significant flora

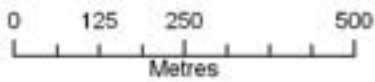
Hydatella conspicua (Serious Decline), apparently the largest population in Northland (Wells et al. 2007). *Myriophyllum votschii* (Regionally Significant) (Wells et al. 2007).

Fauna






Dwarf inanga (Serious Decline), freshwater mussel (Gradual Decline) (Wells et al. 2007). Shortfin eel (Gradual Decline), common bully (NIWA 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), red-billed gull (Gradual Decline) (SSBI Q09/H009, 1977, 1981, 1989). White-fronted tern (Gradual Decline) (OSNZ surveys 1973-1995). New Zealand dabchick (Sparse), little shag (Sparse) (SSBI Q09/H009, 1977, 1981, 1989). Black shag (Sparse), little black shag (Sparse), New Zealand scaup (Regionally Significant) (SSBI Q09/H009, 1977, 1981, 1989). Grey teal (Regionally Significant) (OSNZ surveys 1973-1995). Pied shag, white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian pied stilt, spur-winged plover (SSBI Q09/H009, 1977, 1981, 1989). Australasian harrier, Pacific swallow, pukeko, black-backed gull, common tern (Migrant), white-winged black tern (Migrant) (OSNZ surveys 1973-1995). New Zealand kingfisher (SSBI Q09/H008, 1994).

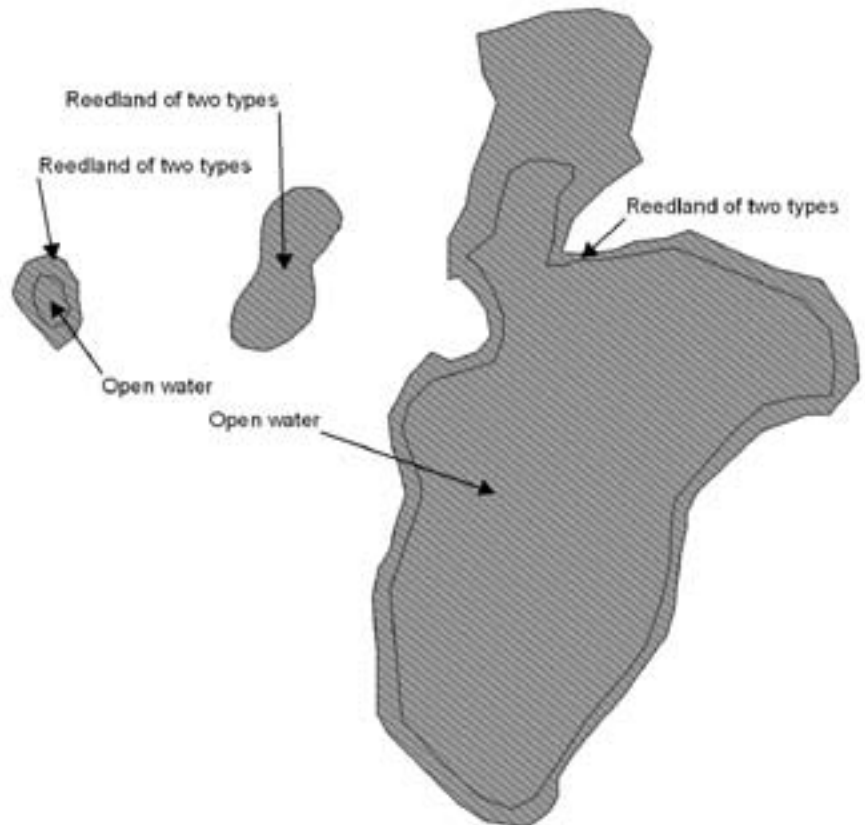


Q09/057 Lake Rotokawau and Wetland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Significance

Ranked High by Wells et al. (2007). Although largely buffered by plantation forestry, this is a degraded site, grazed to the water's edge over a substantial portion of its shoreline and heavily invaded by lakeweed and to a minor extent, Canadian pondweed and *Utricularia gibba* (Wells et al. 2007). However, it supports threatened and regionally significant species, including what may be the largest population of *Hydatella inconspicua* in Northland (Wells et al. 2007). Rare migrants (common tern and white-winged black tern) were recorded by OSNZ in 1990. Contains 9.1 ha of Chronically Threatened land environment A7.3a.

LAKE KANONO, WETLAND AND FOREST

Survey no.	Q09/058
Survey date	26 January 2007
Grid reference	Q09 128 375
Area	198 ha
Altitude	50-90 m asl

Ecological units

- (a) Raupo reedland on alluvium (2%)
- (b) Kanuka forest on hillslope (61%)
- (c) Open water in dune lake (37%)

Landform/geology

Holocene transverse dunes, and lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene dunefield.

Vegetation

One of the larger of the eastern Pouto dune lakes, Lake Kanono is bordered by plantation forestry on the west, kanuka forest to the north and south, and pastoral land on the east. It supports

- (a) discontinuous lacustrine fringes of raupo reedland with frequent manuka, kuta, and *Eleocharis sphacelata*, and occasional ti kouka.
- (b) Kanuka forest on adjacent hillslopes has occasional ti kouka, mapau, and karaka in the canopy.

Significant flora

Glossostigma elatinoides (Regionally Significant) (Wells et al. 2007).
Alternanthera aff. sessilis (Regionally Significant) (2007, AK 299836).

Fauna

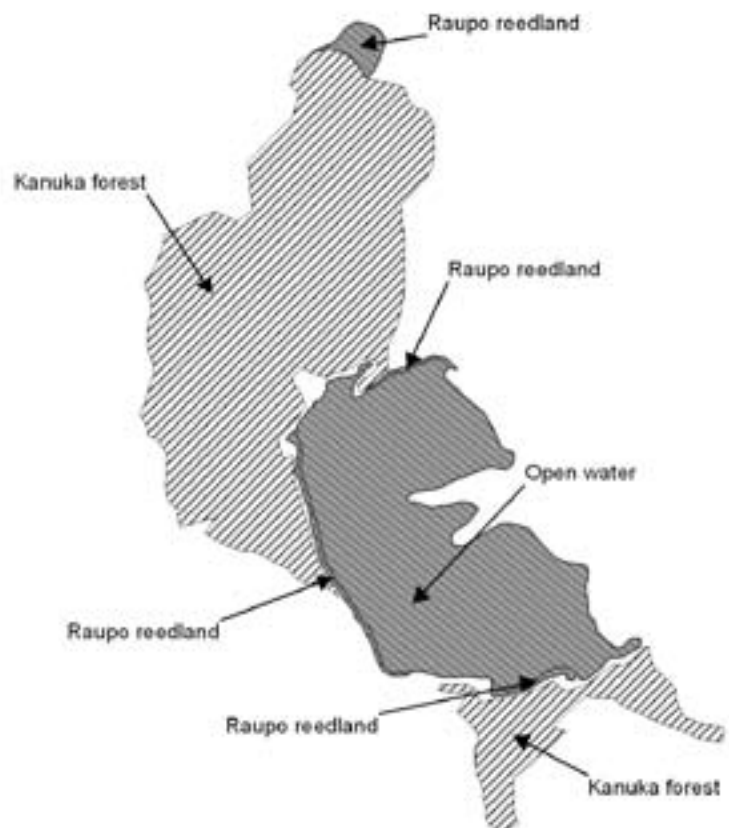
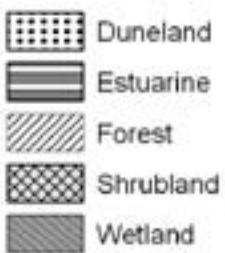
Dwarf inanga (Serious Decline), koura (Gradual Decline), common bully (NIWA 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), Caspian tern (Nationally Vulnerable), red-billed gull (Gradual Decline), (SSBI Q09/H011, 1977, 1991, 1989). White-



Q09/058 Lake Kanono, Wetland and Forest



Habitat Type



Aerial photography flown 2002

fronted tern (Gradual Decline) little black shag (Sparse), (OSNZ surveys 1972-1995). New Zealand dabchick (Sparse), black shag (Sparse), little shag (Sparse), spotless crane (Sparse), New Zealand scaup (Regionally Significant) (SSBI Q09/H011, 1977, 1991, 1989). Australasian little grebe (Regionally Significant), grey teal (Regionally Significant) (OSNZ surveys 1972-1995). White-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian pied stilt, black-backed gull, Pacific swallow (SSBI Q09/H011, 1977, 1991, 1989). Pied shag, Australasian harrier, spur-winged plover, pukeko (OSNZ surveys 1972-1995).

Significance

Ranked Outstanding by Wells et al. (2007), this site supports threatened and regionally significant species, including a substantial population of New Zealand scaup (R. Parrish, pers. comm.). Although degraded by stock access on the eastern side, the conservation value of this substantial site would be considerably enhanced if the eastern shoreline were fenced and domestic stock excluded. Pest fish species and invasive aquatic weeds are currently absent (Wells et al. 2007). Contains 5.9 ha of Chronically Threatened land environment A7.3a and 117.4 ha of At Risk environment G1.1c. Some 60% of the site is already protected in Kanono Conservation Area (111.7 ha), Lake Kanono Marginal Strip (6.2 ha), and Lake Kahuparere Marginal Strip (0.1 ha), administered by DOC. Site for two representative ecological units: (a) Raupo reedland on alluvium, and (b) Kanuka forest on hillslope.

LAKE KAHUPARERE, WETLAND AND SHRUBLAND

Survey no.	Q09/060
Survey date	25 January 2007
Grid reference	Q09 145 361
Area	54 ha
Altitude	55-90 m asl

Ecological units

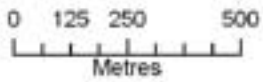
- (a) Kanuka shrubland on hillslope (75%)
- (b) Raupo reedland on alluvium (11%)
- (c) Raupo-kuta reedland on alluvium (2%)
- (d) Open water in dune lake (12%)

Landform/geology






Holocene transverse dunes, and lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene dunefield.

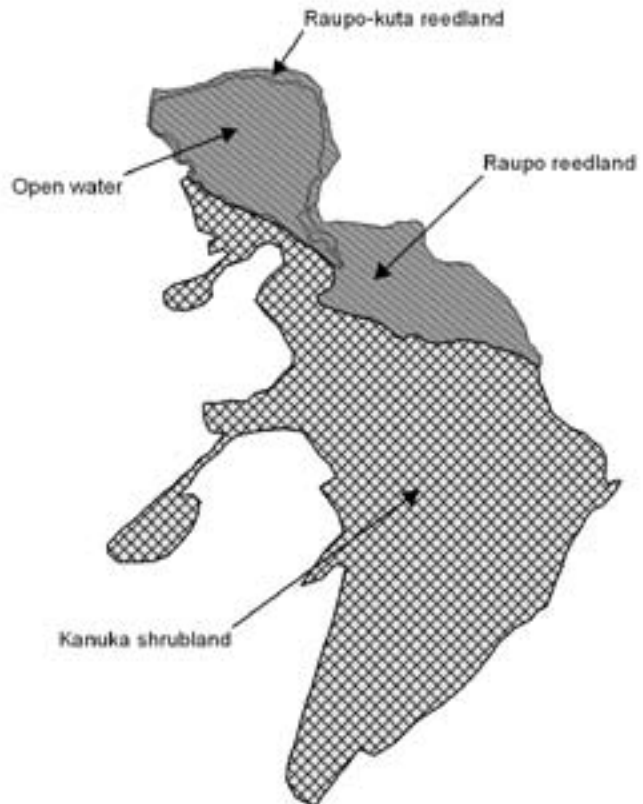


Q09/060 Lake Kahuparere, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Vegetation

Kanuka surrounding the lake is contiguous with the cliff face kanuka shrubland of Q09/063. Bordered by forestry to the west and pasture to the east, this lake is unfenced and grazed to the wetland margin.

- (a) Dominated by kanuka, species such as radiata pine, ti kouka, mahoe, and hangehange occur occasionally in the canopy.
- (b) The raupo wetland is at the southern end of the lake with abundant raupo, frequent *Baumea arthrophylla*, *Eleocharis sphacelata* and *Eleocharis acuta* and occasional native willow weed, knobby clubrush, *Carex virgata*, kuta, *Juncus edgarrae*, and *Potamogeton cheesemani*.
- (c) The lake margin has raupo and kuta as common canopy species with *Eleocharis sphacelata*, manuka, native willow weed, pampas, pale rush, purple umbrella sedge, and *Bolboschoenus fluviatilis* occasionally present.

Significant flora

Pimelea tomentosa (Serious Decline) (SSBI P09/H015), fierce lancewood (Sparse) (1999, AK 300268). *Glossostigma elatinoides* (Champion et al. 2002) and *Corokia cotoneaster*, both Regionally Significant (1991, AK 205024). There is a 1928 record (WELT SP44985) of *Myriophyllum robustum* (Gradual Decline).

Fauna

Dwarf inanga (Serious Decline), koura (Gradual Decline) (Wells et al. 2007). Freshwater mussel (Gradual Decline) (Wells et al. 2007). Common bully (NIWA 2007). Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered), Caspian tern (Nationally Vulnerable), New Zealand dabchick (Sparse), little shag (Sparse), spotless crake (Sparse) (SSBI Q09/H015, 1977, 1981, 1989, 1999). Black shag (Sparse) (R. Parrish, pers. comm.). New Zealand scaup (Regionally Significant), grey teal (Regionally Significant), white-faced heron, paradise shelduck, Australasian shoveler (Regionally Significant), Australasian harrier, pukeko, Australasian pied stilt, New Zealand kingfisher, Pacific swallow, New Zealand pipit, silvereeye (SSBI Q09/H015, 1977, 1981, 1989, 1999). Eastern little tern (Wells et al. 2007). Spur-winged plover, grey warbler, North Island fantail (R. Parrish, pers. comm.).

Significance

Ranked High by Wells et al. (2007). Degraded by stock access on the eastern side, its conservation value would be considerably enhanced if the eastern shoreline were fenced and domestic stock excluded. A number of threatened plant and animal species are present. The adventive weed *Utricularia gibba* was noted for the first time in 2007 (Wells et al. 2007). Contains 2 ha of Chronically Threatened land environments A7.3a and 43.2 ha of At Risk environment G1.1c. Most of the site is already protected in Kahuparere Conservation Area (22.7 ha), Kanono Conservation Area (15.9 ha), and Lake Kahuparere Conservation Area (0.7 ha), administered by DOC.

PRETTY BUSH

Survey no.	Q09/061
Survey date	28 January 2007
Grid reference	Q09 120 353
Area	63 ha
Altitude	80-120 m

Ecological units

- (a) Kanuka forest on rear dune
- (b) Narrow-leaved maire forest on rear dune (forest units together comprise 82%)
- (c) Kanuka forest on hillslope (18%)

Landform/geology

Mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunes overlain by unconsolidated Holocene transverse sand dunes.

Vegetation

Pretty Bush comprises a fine mosaic, mapped as one unit, of

- (a) secondary kanuka forest with occasional totara, rewarewa, and fivefinger, interspersed with smaller areas of
- (b) narrow-leaved maire forest with frequent totara, rewarewa, titoki, and puriri, and occasional other canopy tree species. Subcanopy and understorey species include rohutu, mahoe, and kohekohe, kawakawa, *Olearia albida*, common broom, *Hebe diosmifolia*, fierce lancewood, hangehange, mapau, coastal karamu, thick-leaved coprosma, *Coprosma rhamnoides*, kohuhu, mingimingi, and korokio. There is a rich ground layer dominated by ferns and megaherbs (Cameron et al. 2001).
- (c) Secondary kanuka forest on hillslope.

Significant flora

Fierce lancewood (Sparse) (1990, AK 203129). *Corokia cotoneaster* (1987, AK 180236), rohutu (1990, AK 203113), *Hebe diosmifolia* (1991, AK 205275), *Olearia albida* (Cameron et al. 2001), and thick-leaved coprosma, recorded during this survey, all Regionally Significant.

Fauna

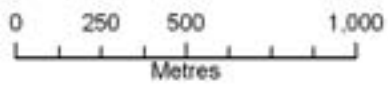
Australasian harrier, spur-winged plover, Pacific swallow, grey warbler, North Island fantail (SSBI Q09/H016, 1998).

Significance






Along with Tapu Bush, Pretty Bush is one of a handful of surviving areas containing old-growth forest on the Pouto Peninsula whose significance is well recognised regionally and nationally (Cameron et al. 2001). The local dominance in the canopy of narrow-leaved maire is a rare and unusual phenomenon, and apparently unique to Pretty Bush. The moss flora has

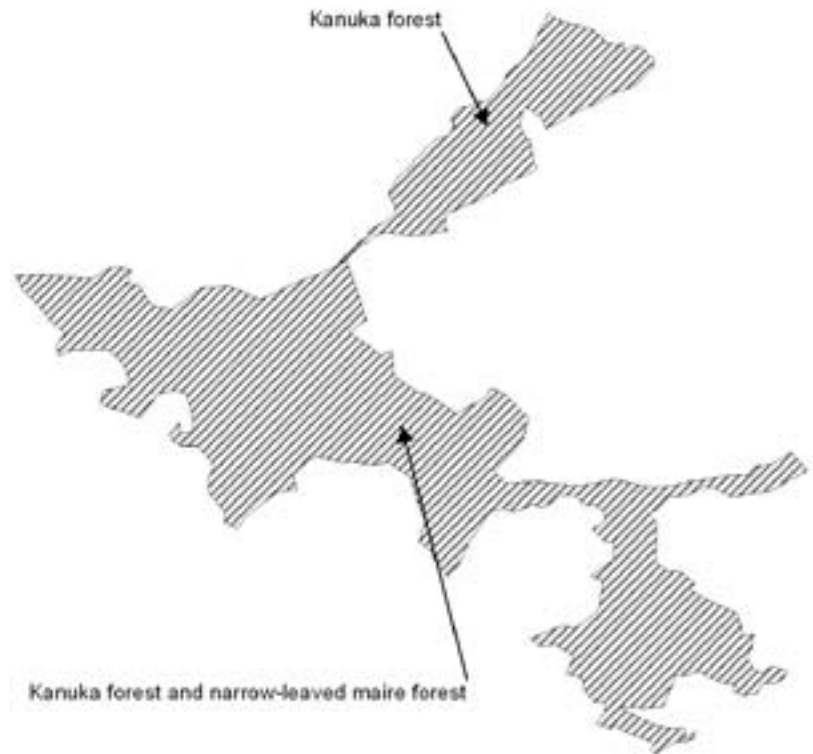


Q09/061 Pretty Bush



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

been documented by Beever (1991). While a natural phenomenon, sand encroaching from the west is threatening to bury the forest. Control measures have been suggested recently (Ogle 1997) but apparently not implemented. Contains 62 ha of At Risk land environment G1.1c. Most of the site is already protected in Pouto Conservation Area (52.2 ha) and Pukekura Historic Area (< 0.1 ha), administered by DOC. Site for two representative ecological units: (a) Kanuka forest on rear dune and (b) Narrow-leaved maire forest on rear dune.

POUTO POINT WILDLIFE RESERVE SANDFIELD, WETLAND AND SHRUBLAND

Survey no. Q09/063
Survey date 25 January 2007
Grid reference Q09 150 354
Area 91 ha
Altitude 0-90 m asl

Ecological units

- (a) Paspalum grassland on foredune (8%)
- (b) Raupo reedland in dune slack (1%)
- (c) Kanuka shrubland on rear dune (28%)
- (d) Kanuka shrubland on cliff face (63%)

Landform/geology

Coastal cliffs eroded in mid-late Pleistocene (Karioitahi Group) consolidated dune sand, overlain by unconsolidated Holocene sand dunes.

Vegetation

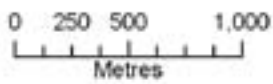
- (a) Paspalum is common on foredunes, spinifex frequent and pingao, tree lupin, tauhinu, *Juncus pauciflorus*, sand sedge, knobby clubrush, *Gnaphalium luteoalbum*, and Formosan lily present occasionally. Sand sedge and knobby clubrush are only present in dune hollows within the dunes.
- (b) A small area of wetland at the edge of the rear dune is dominated by raupo. Occasional pampas, ti kouka and harakeke are also present.
- (c) The rear dune is dominated by kanuka. Mahoe, karaka and hangehange are dominant in small gullies within the rear dunes which are away from vehicle and horse tracks.
- (d) The cliff face comprises of kanuka with the same occasional species as on the rear dune, as well as radiata pine, Hebe stricta, and *Coprosma areolata*.

Significant flora






Pimelea tomentosa (Serious Decline) (DOC Bioweb). Pingao (Gradual Decline), recorded during this survey. Fierce lancewood (Sparse) (2001,

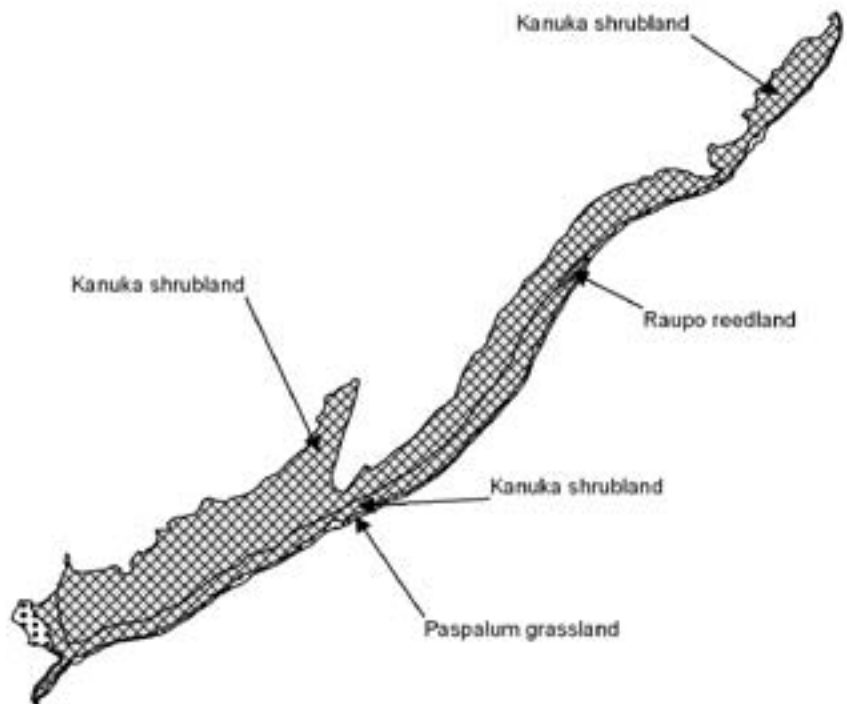


Q09/063 Pouto Point Wildlife Reserve Sandfield, Wetland and Shrubland



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

AK 252746). True maidenhair (2000, AK 252590) and *Lagenifera stipitata* (2001, AK 252734) are both Regionally Significant.

Fauna

White heron (Nationally Critical) (OSNZ CSN 2002). Caspian tern (Nationally Vulnerable) (SSBI Q09/H017, 1992). Northern New Zealand dotterel (Nationally Vulnerable), white-fronted tern (Gradual Decline) (this survey). Variable oystercatcher (Regionally Significant) (OSNZ CSN 2001). Common tern (Migrant) (OSNZ CSN 1990). Paradise shelduck, Australasian pied stilt, black-backed gull, morepork, New Zealand kingfisher, grey warbler, North Island fantail, silvereye (SSBI Q09/H017, 1992). Bar-tailed godwit (OSNZ CSN 1998, 1999, 2001, 2002). South Island pied oystercatcher (OSNZ CSN 1999). Australasian harrier. Loggerhead sea turtle (Vagrant) recorded dead in 1985 (DOC Bioweb). Turtle carcass found during this survey.

Significance

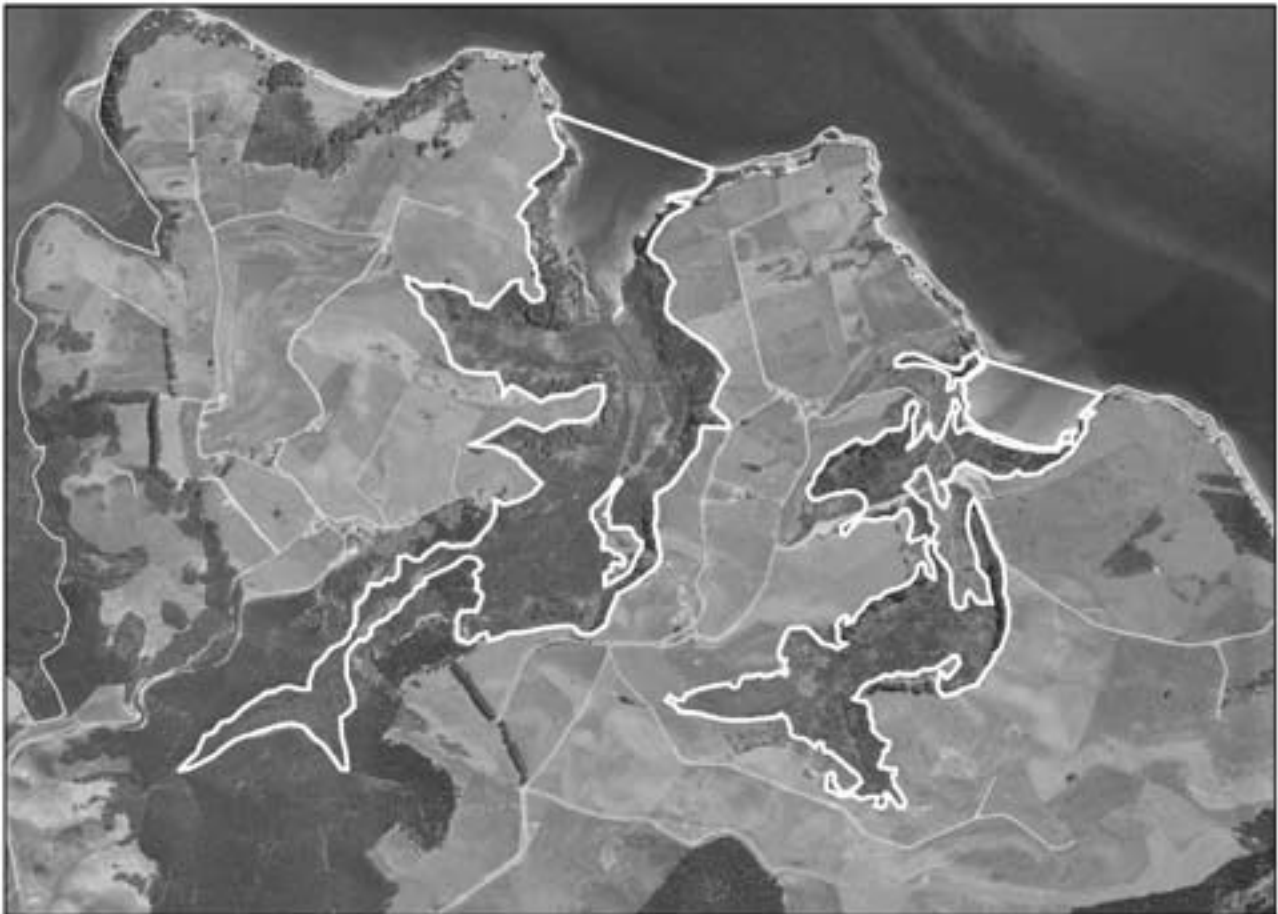
A sizeable tract of natural vegetation in good condition. It has supported one of the few mainland colonies of grey-faced petrel (Regionally Significant), with breeding reported as recently as 1980 (P. Anderson, pers. comm.). Pouto Point is used frequently by locals and visitors. Vehicles use the beach front and four-wheel motorcycle and horse tracks are evident within the fore and rear dunes. This is a Nationally Important site for unspecified soil types (aeolian sand, alluvium, and peat). Contains 4.1 ha of Chronically Threatened land environment A7.3a and 88.2 ha of At Risk environment G1.1c. About half of the site is already protected in Kahuparere Conservation Area (45.2 ha) and Pouto Conservation Area (<0.1 ha), administered by DOC. Site for two representative ecological units: (b) Raupo reedland in dune slack, and (c) Kanuka shrubland on rear dune.

ONGANGE CREEK WETLAND, SHRUBLAND AND FOREST

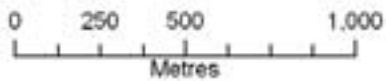
Survey no.	Q09/150
Survey date	17 December 2007
Grid reference	Q09 116 476
Area	126 ha
Altitude	0-70 m asl

Ecological units






- (a) Kanuka forest on hillslope (32%)
- (b) Manuka shrubland on alluvium (40%)
- (c) Raupo reedland on alluvium (5%)
- (d) Mangrove shrubland on estuarine alluvium (5%)
- (e) Oioi rushland on estuarine alluvium (3%)
- (f) Open water of estuary (15%)

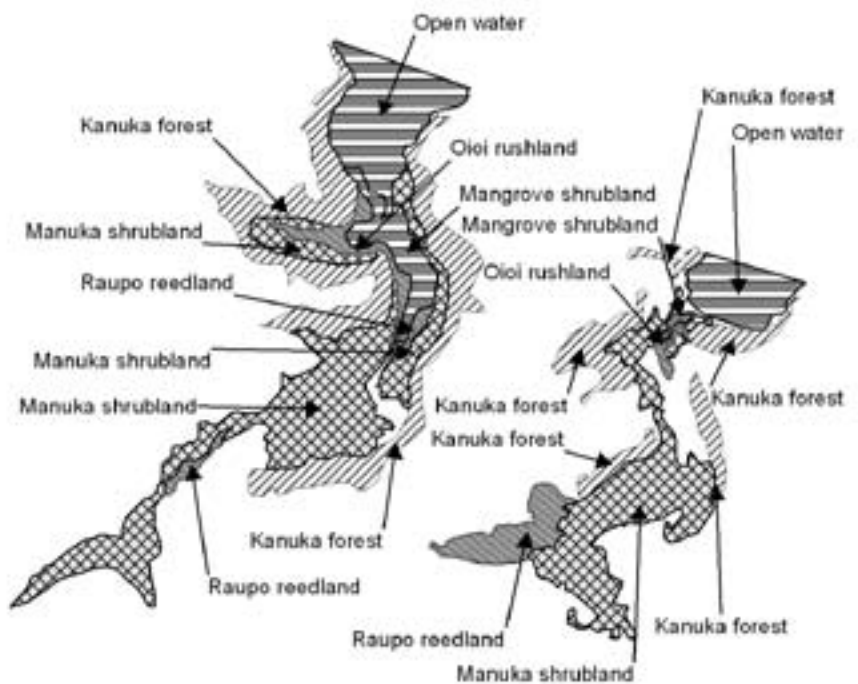


Q09/150 Ongange Creek Wetland, Shrubland and Forest



Habitat Type

-  Duneland
-  Estuarine
-  Forest
-  Shrubland
-  Wetland



Aerial photography flown 2002

Landform/geology

Hillslopes eroded in early Pleistocene (Awhitu Group) cemented dune sand and associated facies, with Holocene intertidal, estuarine, alluvial and swamp deposits in valleys.

Vegetation

This large site comprises forest on hillslopes surrounding a small estuary.

- (a) Kanuka forest contains some mamaku and a limited array of other early successional trees and shrubs. Radiata and maritime pine, gorse, prickly hakea, and pampas are locally present.
- (b) Manuka shrubland occupies the upper valley floor and a mosaic of
- (c) raupo reedland,
- (d) mangrove shrubland, and
- (e) oioi rushland with some *Baumea juncea* in the lower, saline portion of it.

Much of the smaller estuary on the southern side of the southern headland has been converted to pasture; surrounding hillslopes support weedier variants of kanuka forest.

- (f) Open water of estuary.

Significant flora

None noted.

Fauna

North Island fernbird (Sparse).

Significance

The whole site has been farmed in the past, with old fencelines attesting to past clearance of the hillslopes and ditches to drainage of the wetland. Floristic diversity of the mesophytic vegetation is correspondingly low, and there is significant weed presence in all of it. Nevertheless, the whole site is now effectively free of grazing, all communities are predominantly native, there is a good sequence of plant communities from the coast inland, and a threatened species, North Island fernbird, is present. Contains 39.3 ha of Acutely Threatened land environment A5.1b and 64.5 ha of Chronically Threatened environment A6.1b.

FINLAYSON'S LAKE AND WETLAND

Survey no.	Q09/201
Survey date	Not visited during this survey. Information from Wells et al. (2007).
Grid reference	Q09 141 367
Area	3.5 ha
Altitude	55 m asl

Ecological units

- (a) Undescribed vegetation on lacustrine fringe (22%)
- (b) Open water in dune lake (78%)

Landform/geology

Lake and swamp deposits in depression on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield.

Vegetation

- (a) Undescribed vegetation fringe.
- (b) Open water in dune lake.

Significant flora

Centipeda aotearoana (Regionally Significant) (2007, AK 299835)

Fauna

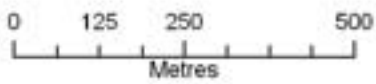
Australasian bittern (Nationally Endangered), grey duck (Nationally Endangered) (SSBI Q09/H014, 1981, 1989). Red-billed gull (Gradual Decline) (OSNZ surveys 1978-1994). New Zealand dabchick (Sparse), little black shag (Sparse), little shag (Sparse) (SSBI Q09/H014, 1981, 1989). Black shag (Sparse), grey teal (Regionally Significant), New Zealand scaup (Regionally Significant) (OSNZ surveys 1978-1994). White-faced heron, Australasian shoveler (Regionally Significant), Australasian pied stilt, black-backed gull, New Zealand kingfisher, Pacific swallow, North Island fantail (SSBI Q09/H014, 1981, 1989). Pied shag, paradise shelduck, pukeko, spur-winged plover (OSNZ surveys 1978-1994).

Significance

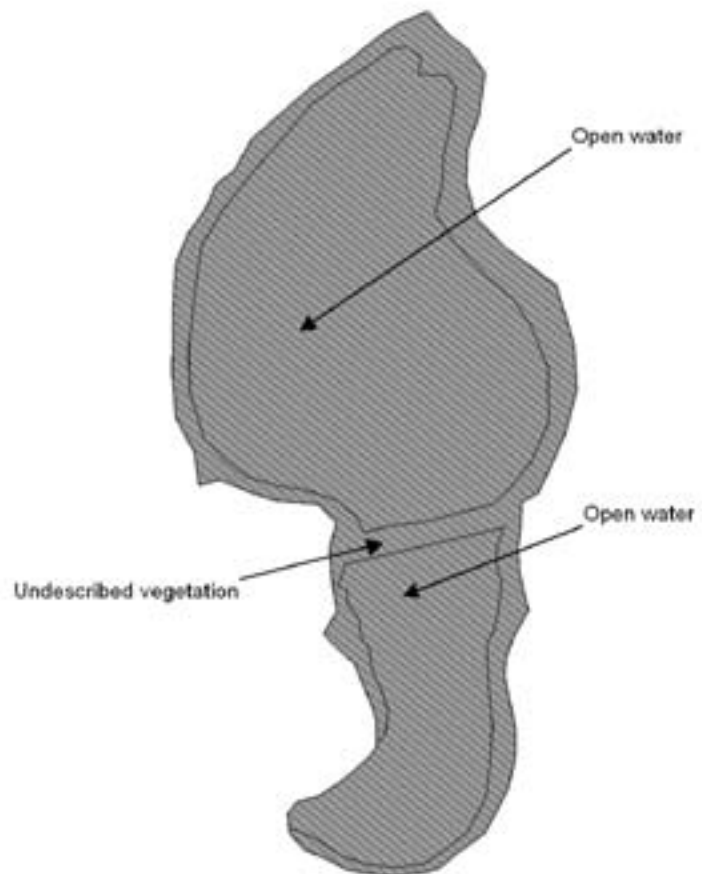
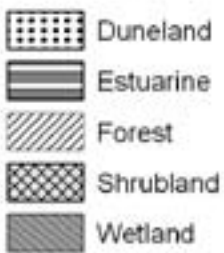
The lake is connected to the much larger Lake Kanono (Q09/058), from which it receives water. Although the lake was unfenced in 1989 (SSBI Q09/H014), threatened and regionally significant species have been recorded and it forms part of the eastern Pouto chain of lakes. Contains 1.8 ha of Chronically Threatened land environment A7.3a and 0.1 ha of At Risk environment G1.1c.



Q09/201 Finlayson's Lake and Wetland



Habitat Type



Aerial photography flown 2002