



Lake Rotoehu Margins

Site Number: SNA84
Ecological District: Rotorua Lakes
Source of Information: Shaw and Beadel (1998)
Digital Scale: 1:2,000
Data Source: RDAM 2006
Regional Council: Bay of Plenty
1998 Site Number: NHS No. 84
Current Tenure: Unprotected
Site Area: 184.7 ha
Altitude Range: 300-410 m
Bioclimatic Zone: Lowland
Grid Reference: NZTM E1912109, N5785619

VEGETATION		LANDFORM	EXTENT
CODE	TYPE		
1	Mangeao-kamahi-tawa-kohekohe-(rewarewa)-(pukatea) forest (whauwhaupaku, kotukutuku and mamaku are common in the subcanopy).	Gullies, steep and rolling hillslopes	79.9 ha
2	Rewarewa/kamahi-tawa forest (whauwhaupaku and mahoe common in the subcanopy; pole rimu also present).	Ridges, steep hillslopes	1.5 ha
3	(Rewarewa)-(kamahi)/whauwhaupaku-kohuhu-mamaku-(mahoe) scrub with scattered mangeao, kohekohe and porokaiwhiri.	Steep hillslopes	42.8 ha
4	Manuka-kohuhu-whauwhaupaku-mahoe/bracken fernland and scrub (with scattered karamu, mamaku, koromiko and kiokio, and local rank pasture).	Gentle, rolling and steep hillslopes	13.4 ha
5	Manuka scrub (with local tutu, buddleia, gorse, <i>Cyperus ustulatus</i> , and mamaku around the margins, and local patches of bracken).	Flat; gentle hillslopes	4.1 ha
6	Rewarewa/kamahi-(mamaku) forest (with local tawa and mangeao, and common kohuhu and mahoe).	Moderate and steep hillslopes	4.8 ha
7	Rewarewa/kamahi-mangeao-(mamaku) forest (whauwhaupaku, mahoe, makomako, kohuhu, kotukutuku, hangehange and mapou common in the subcanopy; scattered ti kouka also present).	Rolling hillslopes	1.4 ha
8	Raupo reedland (with locally common <i>Baumea articulata</i> , <i>Juncus edgariae</i> , <i>Cyperus ustulatus</i> and toetoe, and mahoe, and karamu locally common around margins).	Wetland	0.2 ha
9	Rewarewa/mamaku-kohuhu-(mangeao) forest (with scattered kamahi, tawa, ti kouka, whauwhaupaku and mahoe).	Steep and rolling hillslopes	17.5 ha
10	(Ti kouka)/kohuhu-manuka-koromiko-tutu scrub (with scattered wheki, kiokio, buddleia and mapou; local bracken; and grey willow locally common around margins).	Flat	0.7 ha
11	<i>Baumea articulata</i> -raupo- <i>Eleocharis sphacelata</i> - <i>Juncus edgariae</i> reedland (with locally common throughout and grey willow is locally common around margins).	Wetland	9.2 ha
12	(Rewarewa)/whauwhaupaku-kohuhu-mangeao-(mamaku)/(karamu)-(mingimingi) forest (with grey willow locally common around lake margins; one emergent rimu also present).	Flat	0.2 ha
13	<i>Myriophyllum propinquum</i> herbfield and <i>Juncus effusus</i> - <i>Juncus edgariae</i> / <i>Limosella lineata</i> - <i>Myriophyllum propinquum</i> herbfield (other species present include <i>Lilaeopsis</i> sp., <i>Glossostigma</i> sp., <i>Hypericum japonicum</i> , <i>Juncus tenuis</i> , <i>Callitriche stagnalis</i> , <i>Potamogeton cheesemanii</i> , bachelor's button (<i>Cotula coronopifolia</i>), seedlings of sea aster (<i>Aster subulatus</i>) and <i>Senecio glomeratus</i> , and local <i>Cyperus ustulatus</i>) ⇔ (<i>Carex virgata</i>)/ spike sedge- <i>Juncus prismatocarpus</i> -lotus-creeping bent sedgeland ⇔ Spike sedge (10-15 cm tall)- <i>Juncus tenuis</i> -lotus-creeping bent sedgeland and spike sedge- <i>Juncus tenuis</i> -	Wetland	0.5 ha

VEGETATION		LANDFORM	EXTENT
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	<i>Glossostigma elatinoides</i> - <i>Myriophyllum propinquum</i> sedgeland. (Other species present include <i>Juncus planifolius</i> , <i>Lilaeopsis</i> sp., adventive grasses, bachelor's button, <i>Ranunculus scleratus</i> and seedlings of <i>Carex virgata</i> . Adventive grasses are locally common.		
14	Willow/manuka scrub (with a dense understorey of <i>Baumea tenax</i> and swamp kiokio, with occasional <i>Carex virgata</i> , swamp millet, <i>Carex</i> sp. (<i>C. geminata</i> agg.), <i>Cyperus ustulatus</i> , wheki and <i>Lobelia angulata</i> . There are seedlings of kahikatea, whauwhaupaku and mapou growing at the bases of the willow. One small hummock of <i>Sphagnum cristatum</i> was recorded from this zone).	Wetland	7.9 ha
15	Raupo reedland (with common swamp millet, scattered swamp kiokio, <i>Carex virgata</i> , spike sedge, creeping bent and local emergent manuka).	Wetland	1.0 ha

Indigenous Flora: A small population of *Ileostylus micranthus* is present within the site (Hobbs 2002b), and northern rata occurs around the lake margins.

Fauna: Birds present in this site include New Zealand dabchick ('Threatened - Nationally Vulnerable'), Australasian bittern ('Threatened - Nationally Endangered'), New Zealand scaup, spotless crake ('At Risk - Relict'), pied stilt ('At Risk - Declining'), and North Island fernbird ('At Risk - Declining'). All threat classifications are from Miskelly *et al.* (2008).

Notes on Overall Condition: Semi-coastal forest remnants, modified by logging and fire, secondary vegetation developed following clearance, and wetlands modified by grazing and vegetation clearance.

Change Relative to Shaw and Beadel (1998): Some clearance and drainage evident near E1910155 N5784414. Part of the site mapped in 1998 is now protected (by Nga Whenua Rahui) and has therefore not been mapped in this report.

Threats/Modification/Vulnerability: Parts of this site are grazed.

Risk Assessment: Grazing: Risk to site - high; Timeframe - high.
Vegetation clearance: Risk to site - high; Timeframe - high.
Wetland drainage: Risk to site - high; Timeframe - high.

Significance Level: National (Appendix 4 - Table 1 - Criteria 1, 2, 3, 7, 8, 9, 10, 11, 12, 13; Table 2 - Factors N5, N9, N12).

Significance Justification: This site is of national significance as it adjoins Lake Rotoehu - a nationally significant site for birdlife and other ecological values. Adams (1989) ranked Lake Rotoehu, along with the Sulphur Bay Wildlife Refuge on Lake Rotorua, Waimongonongo inlet at Lake Rotomahana, and the south end of Lake Aniwhenua as the prime waterbird habitats of the Bay of Plenty and East Cape region.

"The diversity of birdlife and the very high numbers of individual species of waterbirds present is sufficient testimony to support this claim. It is no coincidence that all of these areas are gradual shelving shallow wetlands with irregularly shaped margins, supporting a [high] diversity of riparian

vegetation and possessing a low level of human development and activity. These four components are essential features of all important water bird habitats. They provide the necessary food production and feeding areas; secure loafing, resting and socialising areas and areas that can be used by wildlife to escape the attention of predators or other forms of danger or disturbance. Such habitats are uncommon in the Rotorua Lakes Ecological District. Most of these lakes are large, relatively deep and with steeply shelving water margins.”

The indigenous vegetation acts as a protective buffer to improve water quality within the lake. In particular, lake edge wetlands play an important role in the control of nitrogen, phosphorus and bacteria inputs into lakes via ground water contaminated from rural agriculture practices (Gibbs & Lusby 1996). Much of the vegetation in this site is visually prominent and has significant landscape value.

Habitats at the site are regularly used by threatened and at risk indigenous bird species.

Fieldwork Required: No fieldwork required to assess significance, but fieldwork required to update biodiversity and management information.

Notes: Two sites identified as part of this site in Shaw and Beadel (1998) are now identified as separate sites: Waitangi Soda Springs Mire and Waitangi Soda Spring Hot Springs.

This site is part of the “Lake Rotoehu” site that was identified as a “Recommended Area for Protection” (RAP No. 84) in the natural area survey of Rotorua Lakes ED (Beadel *et al.* 1998).

Ecological values would be enhanced if grazed areas were fenced from stock.

References: Adams (1989); Beadel (1996c); Hobbs (2002b); Shaw (1988); Shaw and Beadel (1989a & 1991); Cromarty (1996); Shaw and Beadel (1998); Beadel *et al.* (1998).