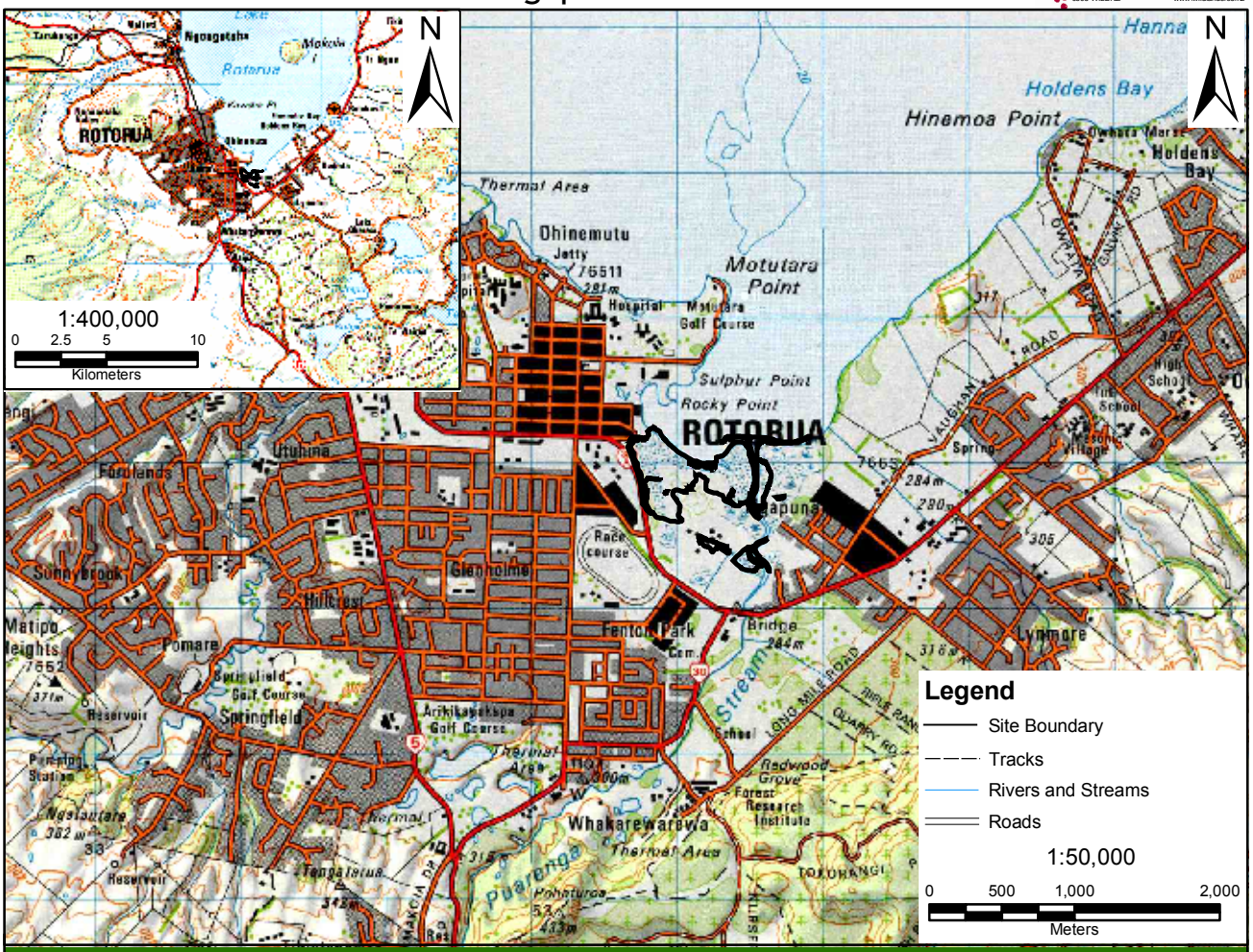
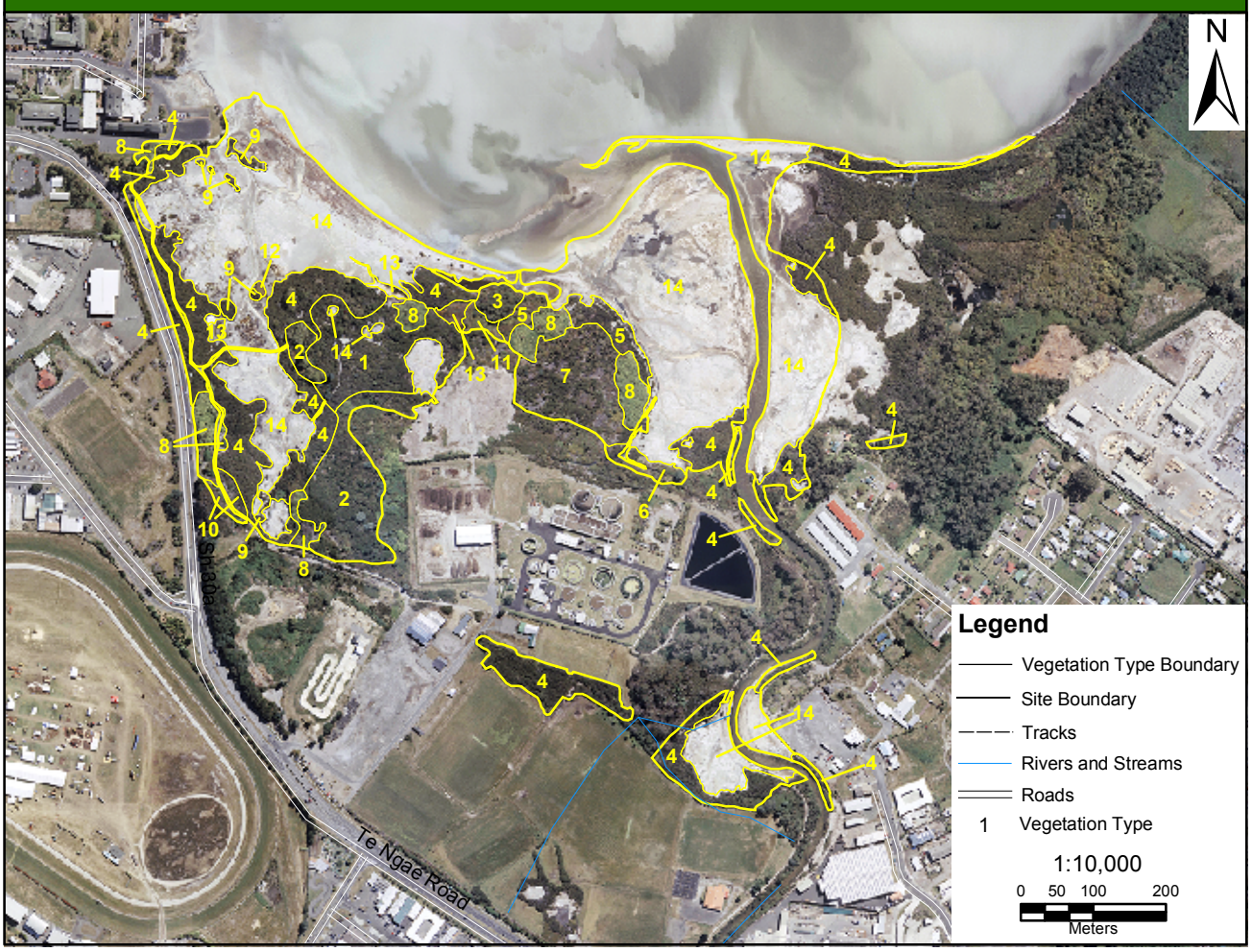
SNA 108

Ngapuna





Ngapuna

Site Number: SNA108
Ecological District: Rotorua Lakes
Source of Information: Wildland Consultants (2005c)
Digital Scale: 1:2,000
Data Source: RDAM 2006
Regional Council: Bay of Plenty
1998 Site Number: NHS 108
Current Tenure: Unprotected
Site Area: 35.5 ha
Altitude Range: 290 m
Bioclimatic Zone: Lowland
Grid Reference: NZTM E1885961, N5773391

VEGETATION		LANDFORM	EXTENT
CODE	TYPE		
1	Kanuka/mingimingi forest Kanuka forest with patches of manuka forms an open canopy over mingimingi. Bracken, *Paesia scaberula* and blackberry are common in the understorey. Some small areas of arrow bamboo are present. Occasional prostrate kanuka.	Flat	1.9 ha
2	Kanuka-grey willow-crack willow-arrow bamboo/broom-blackberry forest This area is dominated by kanuka with small stands of crack willow and grey willow, and thickets of arrow bamboo. Broom and blackberry are locally common. Other common species include silver birch, bracken, black wattle, manuka and *Histiopteris incisa*. Occasional maritime pine and radiata pine are also present. Several oak (*Quercus ilex*) and poplar trees present.	Flat	2.1 ha
3	Grey willow forest Grey willow dominates with occasional crack willow. Alder, raupo and Mercer grass are common on margins.	Geothermal wetland	0.3 ha
4	(Silver birch)-(kanuka)/manuka scrub Manuka forms the cover to 3 m tall with occasional emergent silver birch and kanuka. Other common species include broom, gorse, *Cyperus ustulatus*, bracken, *Hypolepis ambigua*. One apple (*Malus* × *domestica*) tree was recorded.	Gently sloping, flat	7.3 ha
5	Mingimingi scrub ⇔ manuka scrub This quite variable vegetation type is the dominant vegetation cover at Ngapuna. The canopy is dominated by mingimingi and manuka. Manuka becomes more common on the eastern side of the Puarenga Stream. Occasional prostrate kanuka is present. Abundant turutu, bracken, *Histiopteris incisa,* and *Hypolepis distans. Cyperus ustulatus* is common on wet margins. Kanuka dominates some small areas. Grey willow, crack willow, eucalyptus, silver birch and alder (*Alnus glutinosa*) are emergent in places. Blackberry, broom, and gorse are common on cool soils. Occasional silver birch, and patches of Yorkshire fog present.	Gently sloping, flat	0.6 ha
6	Manuka-mingimingi-broom scrub Scattered emergent maritime pine, and silver birch occur over manuka, mingimingi and broom. Blackberry and Mercer grass are common. Several patches of *Carex geminata* are present. A man-made drain with geothermal water passes through this vegetation type.	Gently sloping	0.3 ha

VEGETATION CODE	VEGETATION TYPE	LANDFORM	EXTENT
7	(Silver birch)/kanuka-mingimingi scrub Scattered silver birch, crack willow and grey willow occur over kanuka-mingimingi scrub. Patches of blackberry and *Carex geminata* are also present.	Flat	1.7 ha
8	Arrow bamboo scrub Patches of dense arrow bamboo scrub to 3 m.	Flat	1.4 ha
9	Manuka shrubland Manuka to 2 m over patches of raw-soilfield. Mingimingi, occasional arrow bamboo and prostrate kanuka are also common.	Flat	0.2 ha
10	Arrow bamboo-bracken-mingimingi-manuka shrubland An area where some arrow bamboo has been removed, but is resprouting. Other species present include bracken, mingimingi, manuka, silver birch seedlings, eucalyptus seedlings, turutu and broom. Some patches of raw-soilfield present.	Flat	0.2 ha
11	*Carex geminata* sedgeland to *c.*1 m tall with occasional grey willow and alder on margins.	Geothermal wetland	0.1 ha
12	*Isolepis distigmatosa* sedgeland.	Geothermal wetland	<0.1 ha
13	Geothermal water Geothermal stream, mudpool, and geothermally influenced water.	Geothermal water	0.2 ha
14	Nonvegetated raw-soilfield Bare ground, sinter, hot springs. Several patches of *Isolepis distigmatosa* are present. Some plants of sea rush (*Juncus kraussii* subsp. *australiensis*) occurred in this habitat.	Flat	19.1 ha

Indigenous Flora:

A small area of prostrate kanuka ('At Risk - Naturally Uncommon' in de Lange *et al*. 2009) is present. Prostrate kanuka is endemic to geothermal sites in New Zealand. Sea rush (usually a coastal plant) is also known from this site. Forked comb fern (*Schizaea bifida*) was recorded from Ngapuna in 1986 (NZFRI 17728). *Caleana minor* ('Threatened - Nationally Critical') occurred in the Ngapuna area in the early 1900's. Other species typical of geothermal habitats are present, including manuka, kanuka, bracken, *Cyperus ustulatus*, *Histiopteris incisa, Hypolepis ambigua*, *Hypolepis distans*, mingimingi, and turutu.

Fauna:

Five threatened bird species are known to breed at, or near this site - black-billed gull ('Threatened - Nationally Endangered' in Miskelly *et al*. 2008), banded dotterel, New Zealand dabchick, red-billed gull, and Caspian tern (all 'Threatened - Nationally Vulnerable'). Four at risk species are known to utilise this site - pied stilt ('At Risk - Declining'), little black shag, black shag, and little shag (all 'At Risk - Naturally Uncommon'). Other species recorded from this site include New Zealand scaup, mallard, black-backed gull, pukeko, shining cuckoo, welcome swallow, tui, bellbird, fantail, grey warbler, myna, blackbird, song thrush, goldfinch, and house sparrow.

Cat and rabbit sign were also recorded during the survey.

Notes on Overall Condition:

While the geothermal vegetation has been greatly reduced in extent and quality, some parts still appear natural. Some relatively large areas of indigenous geothermal vegetation are still present, particularly in areas closer to Lake Rotorua. A study of aerial photographs shows *c.*0.3 ha has been cleared since a 2005 survey.

Change Relative to Shaw and Beadel (1998):	The extent and composition of this site appears to be similar to that recorded in 1996 (Beadel *et al.* 1996b).
Threats/Modification/ Vulnerability:	***Invasive Exotic Plants***: Large parts of the site are dominated by adventive species. Silver birch (<1-5% cover) is common throughout, although it is not present on the warmest soil sites. Grey willow, crack willow, and alder are common in wetland areas. Dense areas of arrow bamboo are common. Wilding pines and eucalyptus have been planted in parts of the site. Broom, gorse, and blackberry are common. ***Human Impacts***: Part of this site was once used as the town rubbish dump. Litter is scattered throughout this area and exotic trees and shrubs have been planted. Numerous formal and informal tracks occur throughout the area. Fire has occurred at this site in the past (and recently) and is an ongoing threat to the site. Vegetation clearance is an ongoing threat to this site.
Risk Assessment:	Vegetation clearance: Risk to site - high; Timeframe - high. Fire: Risk to site - high; Timeframe - medium; Rubbish dumping: Risk to site - medium; Timeframe - medium. Pest plants: Risk to site - high; Timeframe - high. Predators (e.g. cats): Risk to site - high; Timeframe - high.
Significance Level:	National (Appendix 10 - Table 1 - Criteria 1, 2, 3, 4, 5, 7, 8, 11, 12, 13; Table 2 - Factors N5, N12, N15). For the purposes of evaluation, this site has been combined with the Sulphur Bay site as the sites can be considered to be part of one geothermal habitat.
Significance Justification:	Together Sulphur Point and Ngapuna sites are of national significance as they comprise good quality examples of geothermal vegetation which is nationally uncommon. Five threatened bird species breed at the site - banded dotterel, black billed gull, red billed gull, New Zealand dabchick, and Caspian tern. The greater site supports the fourth largest area of geothermal habitat in New Zealand.
Fieldwork Required:	No fieldwork is required.
Notes:	This site was part of site "Motutara Point-Sulphur Point-Ngapuna" which was identified as a "Recommended Area for Protection" (RAP No. 108) in the natural area survey of Rotorua Lakes ED (Beadel *et al*. 1998).
References:	Beadel (1986); Beadel *et al.* (1996b); Ecroyd (1991); Kirk (1873); Wildland Consultants (2005c).