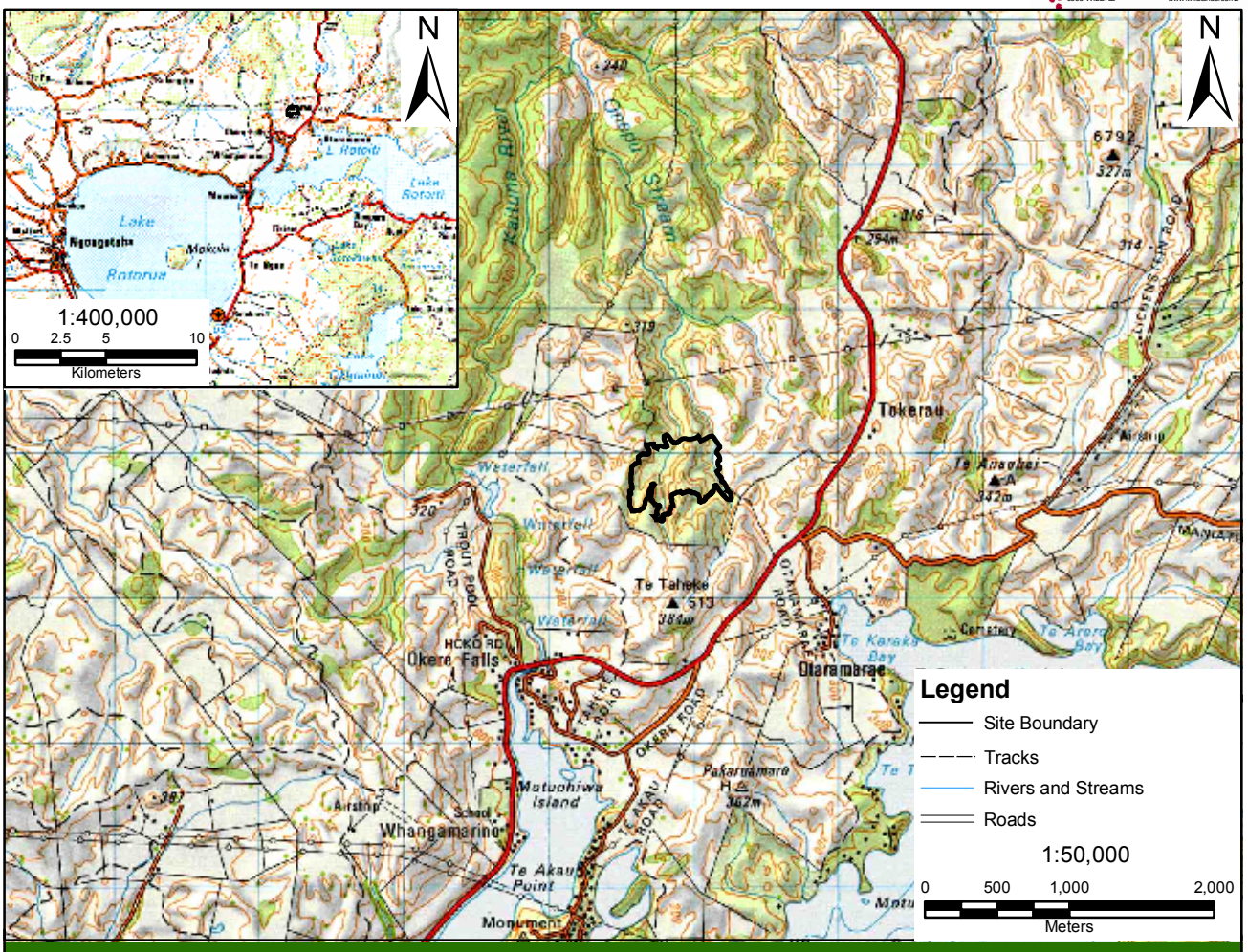
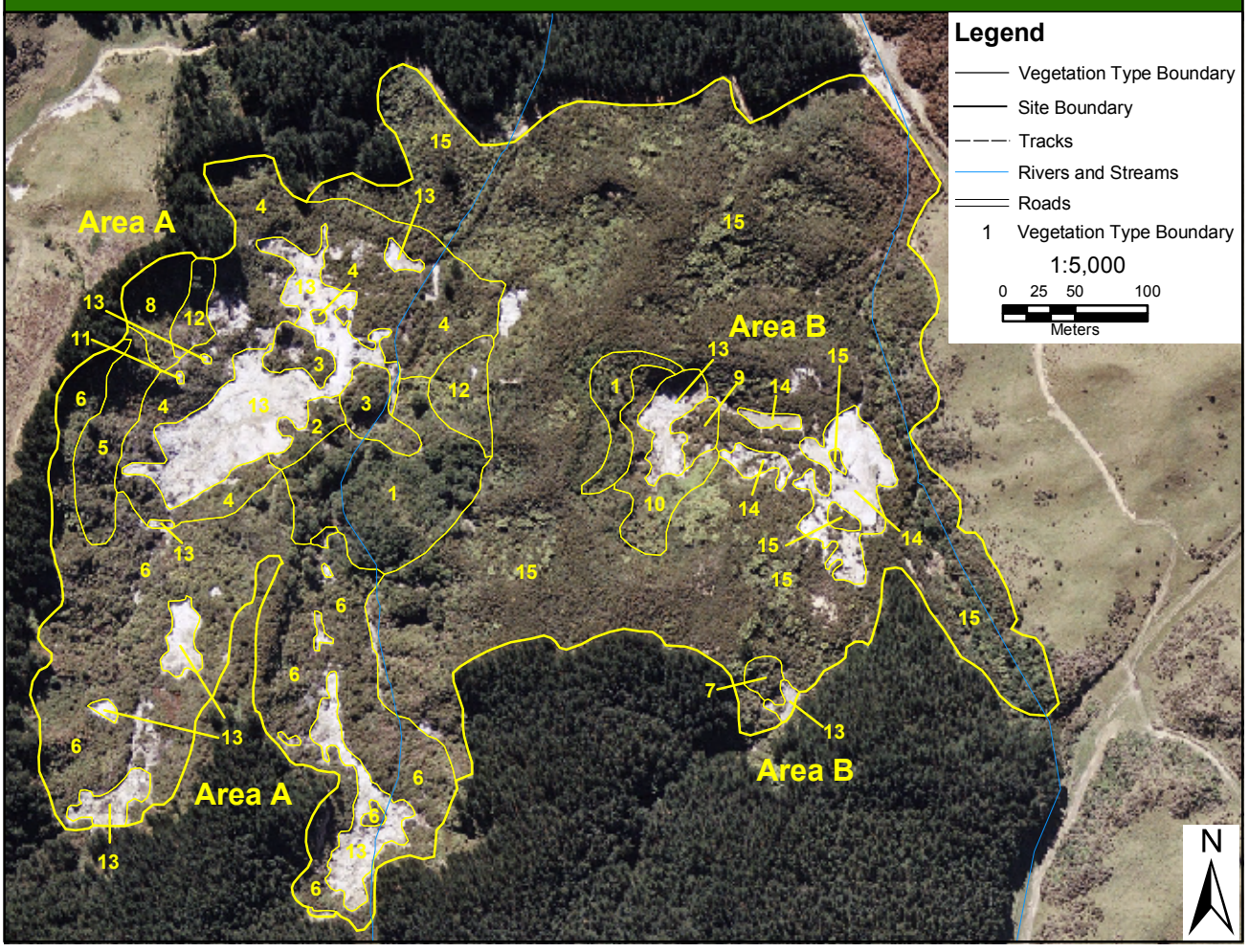
SNA 669

Taheke Geothermal Area





Taheke Geothermal Area (was Taheke Springs)

Site Number: SNA669
Ecological District: Otanewainuku
Source of Information: Wildland Consultants (2005c)
Digital Scale: 1:2,000
Data Source: RDAM 2006
Regional Council: Bay of Plenty
1998 Site Number: NHS No. 669
Current Tenure: Unprotected
Site Area: 24.3 ha
Altitude Range: 260-340 m
Bioclimatic Zone: Lowland
Grid Reference: NZTM E1894748, N5788406

VEGETATION		LANDFORM	EXTENT
CODE	TYPE[1]		
1	Pohutukawa × northern rata-kamahi forest	Hillslope, stream gully	1.3 ha
2	Pohutukawa × northern rata/mingimingi (*Leucopogon fasciculatus*)-prostrate kanuka (*Kunzea ericoides* var. *microflora*) forest	Hillslope	0.1 ha
3	Pohutukawa × northern rata/prostrate kanuka-mingimingi forest	Hillslope	0.3 ha
4	Prostrate kanuka-manuka-mingimingi scrub	Hillslope	2.1 ha
5	(Dead pohutukawa × northern rata)/prostrate kanuka-mingimingi scrub	Hillslope	0.4 ha
6	Mingimingi-prostrate kanuka-manuka scrub *Histiopteris incisa* fernland ⇔ *Hypolepis distans* fernland ⇔ gorse scrub	Hillslope, gully	4.3 ha
7	Dead pohutukawa × northern rata/manuka-mingimingi scrub	Hillslope	<0.1 ha
8	(Dead pohutukawa × northern rata)-(wheki)/mingimingi-*Histiopteris incisa*-*Gahnia setifolia*-gorse scrub	Hillslope	0.2 ha
9	Manuka-prostrate kanuka-*Lycopodiella cernua* shrubland	Hillslope	<0.1 ha
10	*Histiopteris incisa*-mingimingi fernland	Hillslope	0.3 ha
11	*Lycopodiella cernua* fernland	Hillslope	<0.1 ha
12	(Dead pohutukawa × northern rata)/wheki-*Gahnia setifolia* treefernland	Hillslope	0.4 ha
13	(Dead pohutukawa × northern rata)/wheki-kamahi treefernland		1.9 ha
14	Nonvegetated raw-soilfield	Flat, hillslope, cliff, stream margins	0.5 ha
15	Non-vegetated raw-soilfield (modified)	Flat, gently sloping hillslope	12.3 ha

Indigenous Flora: A small population of prostrate kanuka ('At Risk - Naturally Uncommon' in de Lange *et al*. 2009) is present. The site also contains an interesting stand of pohutukawa × northern rata forest associated with geothermal activity. Other species typical of geothermal habitats are present, including manuka, kanuka, mingimingi, turutu (*Dianella nigra*), *Histiopteris incisa*, bracken, *Lycopodiella cernua*, *Schizaea bifida, Gleichenia microphylla*, and *Hypolepis distans.*

Fauna: North Island fernbird ('At Risk - Declining' in Miskelly *et al*. 2008) were

[1] More detailed vegetation descriptions are provided in Wildland Consultants (2005c).

recorded on the margins of Area A at GPS waypoint E2804803 N6350005. Other common indigenous and exotic species typical of the habitats were present includes whitehead, bellbird, grey warbler, Australian harrier, silvereye, spur-winged plover, fantail, and paradise shelduck.

Notes on Overall Condition:

Area A is in the best condition, with exotic pest plants mostly confined to the margins. This area also contains the largest population of prostrate kanuka at the Taheke site.

The areas marked as B are small isolated areas of geothermal activity that have a large pest plant component. Area B has been heavily mined in the past.

Change Relative to Shaw and Beadel (1998):

The change since the 1998 report is difficult to deduce as the quality of aerials used in the earlier 1996 field survey was relatively poor. Any changes in geothermal vegetation are probably due to natural fluctuations in geothermal activity.

Threats/Modification/ Vulnerability:

***Invasive Exotic Plants*:** The margins of the site are dominated by thick gorse. Other species present include broom (*Cytisus scoparius*) (<1% cover) and blackberry (<1% cover). Occasional wilding radiata pines (<1% cover) encroach into geothermal vegetation. Some of the intact geothermal areas in Area A are relatively free of pest plants.

***Human Impact*:** Previous open cast extraction of silica deposits has resulted in extensive modification of the Taheke site, with resultant changes to the vegetation and landforms. However, there is no sign of recent mining at the site. Several overgrown vehicle tracks criss-cross the site. Some dumping (corrugated iron and vehicles) has occurred at the site, particularly in Area B. An unformed track was present in Area A.

The current vegetation composition at Taheke may be under threat if a proposed geothermal power station becomes operative. This would draw off geothermal fluid and/or heat energy from the Taheke field and may result in changes to surface geothermal activity.

***Pest Animals/Grazing*:** Possums are a potential threat to pohutukawa, northern rata, and kamahi trees at this site. The good quality geothermal vegetation is fenced with no sign of farm animals present.

Risk Assessment:

Pest plants (wilding pines): Risk to site - medium; Timeframe - medium.
Pest animals (possums): Risk to site - high; Timeframe - high.

Significance Level:

A: National (Table 1 - Criteria 1, 2, 3, 4, 5, 8, 11, 12, 13; Table 2 - Factors N4, N6).
B: Regional (Table 1 - Criteria 1, 2, 3, 4, 5, 6, 8, 11, 12; Table 2 - Factor R9).

Significance Justification:

A: The part of the site identified as A on the map is of national significance because it is a good quality example of geothermal vegetation. It is an area of high geothermal activity with a unique suite of vegetation types associated with geothermal activity (examples present include the largest and best quality examples of pohutukawa × northern rata forest associated with geothermal habitat as well as areas

of prostrate kanuka (an 'At Risk' species) scrub and shrubland). It is the largest area of geothermal vegetation remaining in the Otanewainuku ED.

B: These parts of the site are of regional significance because they contain a population of prostrate kanuka (an 'At Risk' species).

Fieldwork Required: No fieldwork required to verify natural values. Biodiversity and management information for nongeothermal areas is dated and fieldwork is required to update this.

Notes: This site is in the Taheke Geothermal Field, the only field recognised from the Otanewainuku Ecological District. This site was identified as "Taheke Springs" in Shaw and Beadel (1998).

References: Beadel (1996b); Beadel *et al.* (1996b); Clarkson and Clarkson (1992); Wildland Consultants (2005c).