



Sulphur Point

Site Number:	SNA178
Ecological District:	Rotorua Lakes
Source of Information:	Wildland Consultants (2005c) - Geothermal Site No. 5
Digital Scale:	1:2,000
Data Source:	RDAM 2006
Regional Council:	Bay of Plenty
1998 Site Number:	Not identified as a site in Shaw and Beadel (1998)
Current Tenure:	Unprotected
Site Area:	3.8 ha
Altitude Range:	290 m
Bioclimatic Zone:	Lowland
Grid Reference:	NZTM E1885857; N5774046

VEGETATION		LANDFORM	EXTENT
CODE	TYPE		
1	Kanuka/mingimingi forest Kanuka, 2-3 m tall, forms the canopy over mingimingi, with occasional turutu, rarahu, prostrate kanuka and bracken.	Flat	0.4 ha
2	Arrow bamboo-manuka scrub Arrow bamboo and manuka to 3 m tall. Bamboo is very dense to ground level. Small patches of manuka have occasional turutu and bracken in the understorey.	Flat	0.2 ha
3	Manuka-kanuka-mingimingi shrubland An area of mixed shrubland with manuka, and small areas where mingimingi and kanuka have become dominant. Turutu is common in the understorey.	Flat, gently sloping	1.4 ha
4	Geothermal water Geothermally influenced water.	Crater, flat	<0.1 ha
5	Nonvegetated raw-soilfield Pavement, sinter, steaming soil, mudpool, geothermally heated soils.	Gently sloping, flat	1.9 ha

Indigenous Flora: Several species typical of geothermal habitats are present, including kanuka, prostrate kanuka ('At Risk - Naturally Uncommon' in de Lange 2009), manuka, mingimingi, bracken, turutu, and *Histiopteris incisa*.

Fauna: Common indigenous and exotic species present include spur-winged plover, house sparrow, black-backed gull, grey warbler, and pukeko. Two threatened species (as listed in Miskelly *et al.* 2008) are also present: red-billed gull ('Threatened - Nationally Vulnerable') and black-billed gull ('Threatened - Nationally Endangered').

Notes on Overall Condition: This site was once part of a much larger area of geothermal vegetation which has been greatly reduced in extent by clearance. The site itself has formed and unformed tracks throughout. The site is threatened by the advancement of pest plant species, most notably arrow bamboo. Some litter is present on site.

Change Relative to Shaw and Beadel (1998): Some clearance of vegetation was undertaken as part of the construction of the Rotorua Events Centre.

Threats/Modification/Vulnerability: *Invasive Exotic Plants:* Arrow bamboo has expanded its range at this site since the 1996 survey to cover 1-5% of the area. Other pest plants present

include blackberry (<1% cover) and inkweed (<1% cover).

Human Impacts: Formed and unformed tracks are present throughout this site. Some litter and graffiti is evident. A road passes immediately adjacent to the site. One 'rough' vehicle track is present at the site.

Risk Assessment: Pest plants: Risk to site - high; Timeframe - high.
Vegetation clearance: Risk to site - high; Timeframe - high.

Significance Level: For ranking purposes this site was considered together with the Ngapuna site.

National (see also Ngapuna) (Appendix 10 - Table 1 - Criteria 1, 2, 3, 4, 5, 7, 8, 11, 12, 13; Table 2 - Factors N5, N12, N15).

Significance Justification: When combined, Sulphur Point and Ngapuna sites comprise the fourth largest area of geothermal habitat in New Zealand. They are of national significance as they comprise a good quality example of nationally uncommon geothermal vegetation. Two threatened bird species utilise this site: black-billed gull and red-billed gull.

Fieldwork Required: No fieldwork is required.

Notes: The site is part of a much larger area of geothermal vegetation which includes the Ngapuna, Government Gardens, and Old Government Gardens sites.

The site has been greatly reduced in size by surrounding land uses, including roads, spa facilities, and recreation facilities. Tracks and pest plants present at the site further degrade ecological values. The site's values would be enhanced by removal of pest plants, particularly broom and bamboo, and continued ongoing maintenance of formed tracks.

The orchid *Sullivania minor* ('Threatened – Nationally Critical') occurred in the general area in the early 1900s, but has not been found in this area recently, despite extensive searching (Ecroyd 1991).

References: Beadel (1995a & 1996b); Beadel *et al.* (1996b); Ecroyd (1991); Wildland Consultants (2005b).