

Sulphur Bay

A THERMALLY HEATED WILDLIFE AREA

By
John Innes

Regional Representative,
OSNZ — Volcanic Plateau
and

Graeme Taylor

Zoology Department,
University of Canterbury

Mount Ngongotaha and Rotorua city from atop
the Puarenga Stream mouth. Gull breeding
sanctuary in centre.

Much of the water in Sulphur Bay, Lake Rotorua, is devoid of aquatic plants and animals. Why then, do the majority of New Zealand's little black shags nest here? What brings black-billed gulls 1,000km north of their normal South Island braided river nesting habitat, to raise chicks on a steamy silica spit a few hundred metres from downtown Rotorua? Why do dabchick, pied stilt and welcome swallow gather here in large numbers each winter?

Inhospitable bay?

Looking at the Bay itself does not immediately answer the questions. It is the most southern bay of Lake Rotorua and measures 1,300m by about 750m. Adjacent ground includes the well known Government Gardens complex; the large Travelodge hotel, and extensive natural silica flats with an intact manuka frontage as old as Rotorua city itself and now uncommon on the lake edge. The Puarenga Stream, which drains the Whakarewarewa Thermal Reserve, flows in from the south. However, the Puarenga does not supply the thermal odours and suspensions which gave the Bay its name. These discharge directly into the Bay from an active thermal field under and adjacent to the lake water. The water is warm; it is murky, sulphurous, low in oxygen and shallow. You can walk across most of the Bay, which alarms tourists at the Travelodge! The water is quite acid — as low as pH 3.5 in places — and we often see gulls with feet like blackbirds because the webs of their feet have not withstood years in the acid water.

The bottom is covered with fine mud near the thermal discharges and fine quartz sand further away from them which contain the only abundant insect group — midge larvae. There are no lakeweeds in the sulphurous part of the Bay.

Sanctuary and refuge

Sulphur Bay was declared a game reserve in 1904, for "native and imported game, primarily ducks". The breeding area for red-billed and black-billed gulls at Sulphur Point, and its surroundings have been a Wildlife Sanctuary since 1964 and special permission is needed from the Wildlife Service to go there. The water of the Bay has been a Wildlife Refuge since 1967.

We have records of 62 species of bird from the area of which 45 are native. Some visitors are rare vagrants; others are present all year round in constant numbers while more still are periodic users, either

