Te Hiku

Waitahora Lakes NRC Lake No. 3.

Waitahora lake, east of Waitahora Lagoon. Dominated by *Eleocharis sphacelata*.

Summary	Waitahora Lakes
Surveyed:	2007, 2009 and 2014
Overall ranking:	**High-Moderate**: Several small freshwater bodies to the east of Waitahora Lagoon, the largest being 2.3 ha in area. Most of this was covered by tall emergent vegetation. Several threatened species and highly buffered unimpacted catchment with indigenous vegetation.
Threats:	Low risk of introduction of invasive pests. Only minor pest plants recorded. The isolated nature of these lakes and the surrounding indigenous vegetation indicates little immediate threat to this site. Wetland is dependent on water banking up behind the dune complex.
Management recommendations:	Five year ecological condition monitoring, including surveys of ponded areas within the Paranoa Swamp. A fish survey is advocated to determine the fauna of the saline and freshwater parts of the Waitahora wetland complex.

Description

There were several small freshwater bodies to the east of Waitahora Lagoon (1583187E 6187509N), the largest being 2.3 ha in area, although most of this was covered by tall emergent vegetation. The catchment was primarily manuka scrub with a large wetland (Paranoa Swamp) around the Waitahora Stream, other unnamed streams, and surrounding the freshwater lakes. Water was tea-stained indicating high humic content (Plate 3). The lakes are accessed from the Cape Reinga Walkway some 5.5 km west of the Kapowairua Campground.

Wetland vegetation

The water bodies were predominantly filled with the emergent sedges *Eleocharis sphacelata* (Plate 2) and *Machaerina articulata* growing to depths of 1 m. The Nationally Critically Endangered *Hibiscus diversifolius* was common in the marginal vegetation of these lakes.

Submerged vegetation

Open areas of water had supported a diverse vegetation with *Chara australis* and *C. fibrosa*, pondweeds (*P. cheesemanii* and *P. ochreatus*), the milfoil *Myriophyllum propinquum* and the introduced swamp lily (*Ottelia ovalifolia*). The introduced water purslane (*Ludwigia palustris*) was found at the margin of one lake. *Stuckenia pectinata* was found in the easternmost pools adjacent to the Paranoa Swamp for the first time in 2014.

LakeSPI

No LakeSPI score was generated for this lagoon.

Water birds

Extensive emergent vegetation and relatively undisturbed nature of this lake provides a good habitat for water birds. The nationally threatened bittern (*Botaurus poiciloptilus*) was seen and the regionally significant fernbird (*Bowdleria punctata vealeae*) was heard.

Fish

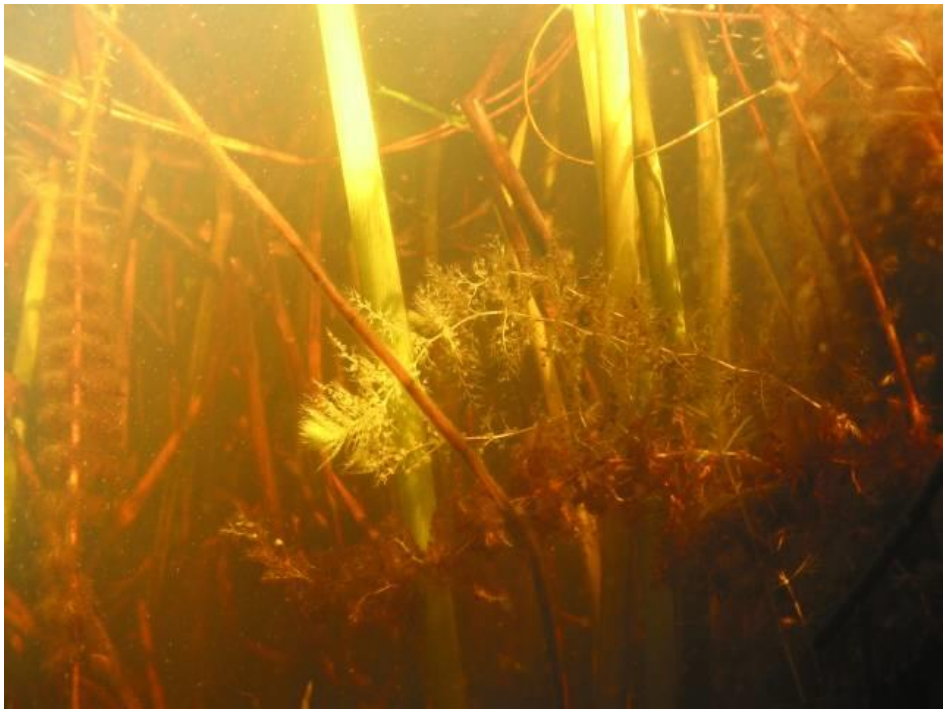
No fish were seen and there are no NIWA FBIS records of fish sampled from this location.

Aquatic invertebrates

No invertebrates were noted.

Endangered species

The Nationally Critical bladderwort *Utricularia australis* is undergoing a recent (since 2000) population decline of > 70% of all populations (de Lange et al. 2018). It was recorded in 2007, but not since that time. Apparently suitable habitat exists throughout this water body and the Paranoa Swamp.



Freshwater lake east of Waitahora Lagoon with the endangered bladderwort (*Utricularia australis* – centre) and the milfoil *Myriophyllum propinquum* (left and right) in open water amongst the culms of *Eleocharis sphacelata* (centre background) (P. Champion 2007).

An additional Nationally Critical plant, *Hibiscus diversifolius,* was found on the margins of these water bodies. It occupies a total area nationally of ≤ 10 ha (0.1 km^2), with a moderate ongoing or predicted decline of 50–70%.

Another rare plant, the submerged sago pondweed (*Stuckenia pectinata*), found in 2014, is classified as At Risk Declining (de Lange et al. 2018).

Australasian bittern (*Botaurus poiciloptilus*) is classified as Nationally Critical, with 250–1000 mature individuals in New Zealand and a predicted decline of 50–70% (Robertson 2017). Fernbird (*Bowdleria punctata vealeae*) is classified as At Risk Declining, with 20,000–100,000 mature individuals globally and a predicted decline of 10–50%.

Lake Ecological Value

Based on the 2015 survey a Lake Ecological Value rating of 8 (High-Moderate) was calculated. This rating was previously 7 (Moderate) in 2007 and 2009, with the increase due to the new record of *Stuckenia pectinata*.

Threats

The isolated nature of these water bodies and the surrounding indigenous vegetation indicates little immediate threat to this site. The introduced swamp lily and water purslane are common species in Northland and pose little threat to the ecology of this otherwise pristine system.

Management recommendations

Five year ecological condition monitoring, including surveys of ponded areas within the Paranoa Swamp. A fish survey is advocated to determine the fauna of the saline and freshwater parts of the Waitahora wetland complex.