Te Hiku

Lake Waihopo, NRC Lake No. 78.

Lake Waihopo: Aveael Webb (2025).

Summary	Waihopo
Surveyed:	2004, 2006, 2009, 2013, 2017 and 2025.
Overall ranking:	Outstanding: A mesotrophic lake, with well-developed submerged vegetation and dense emergent vegetation supporting numerous endangered biota.
Threats:	Low risk of invasive species introductions. Potential for future nutrient enrichment from farming in the catchment.
Management recommendations:	Recommend fully fencing the lake and investigate the southwestern drain to identify any mitigation options for nutrient addition. Lake ecological condition monitoring every 5 years.

Description

Lake Waihopo (1603898E, 6154039N) is a small (3.3 ha) dune lake with a maximum depth of 3.74 m. The catchment is primarily pasture (80%) with areas of grazed mānuka / kānuka scrub. However, the lake is mostly fenced to exclude livestock, but cattle have been observed accessing the margins of the lake on several occasions and an unfenced area was noted in 2025. There are no inlet streams, but a major drain flows into the lake on the southwestern side, with a shallow water sandy delta observed in 2025 (LakeSPI site C). The outlet, Waihopo Stream, flows through a wetland area at the eastern end of this lake discharging into Houhora Harbour (East Coast). Access is through private farmland off Kimberley Road. Power boat access is difficult due to emergent vegetation, shallow water and a deep peaty-muddy lake bottom, though access is relatively easy for light boats.

Wetland vegetation

Much of the lake (70%) is occupied by large beds of emergent species, up to 70 m wide. No NRC shore-based vegetation survey was undertaken in 2025. On previous surveys, the dominant emergent was kuta (*Eleocharis sphacelata*) growing from the lake margin to 1.7 m, with other species including *E. acuta*, *Machaerina articulata, M. juncea, M. rubiginosa, Isolepis prolifera* and raupō (*Typha orientalis*) all common. Maru or bur reed (*Sparganium subglobosum*) was noted in the peaty marginal vegetation in 2017. The threatened ferns *Thelypteris confluens* and *Cyclosorus interruptus* were found on the lake margins.

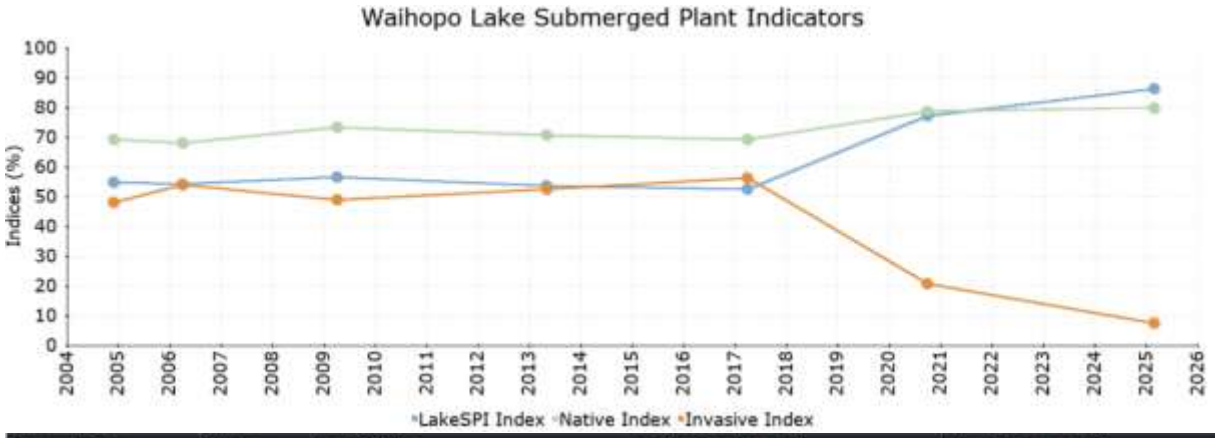
Submerged vegetation

In 2025, a diver survey of five LakeSPI sites was undertaken to depths of 2.8 to 3.4 m. A low diversity vegetation comprised of *Nitella* sp. aff. *cristata* and lesser amounts of *Chara australis* charophyte meadows, with scattered taller plants of *Potamogeton cheesemanii* extended from the edge of emergent vegetation to a maximum depth of 3 m, with low covers (>10%) of these plants growing to 3.2 m. At one site where kuta was absent, a much more diverse assemblage of submerged macrophytes occurred, with *Chara acanthopitys, Nitella hyalina, Myriophyllum propinquum, Glossostigma elatinoides* and the invasive weed *Utricularia gibba* additionally found at this site.

Similar vegetation was found in 2017, but sparser and shallower vegetation was described on some sampling occasions prior to this. Prior to 2017, *Utricularia gibba* was common and formed high covers over charophyte meadows at all five sites.

Lake Waihopo: *Chara australis* (left), *Potamogeton cheesemanii* (right) (Mary de Winton, 2025).

LakeSPI



Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
February 2025	Excellent	86.3%	80.0%	7.4%
September 2020	Excellent	77.1%	78.7%	20.7%
March 2017	High	52.6%	69.3%	56.3%
April 2013	High	53.7%	70.7%	52.6%
March 2009	High	56.6%	73.3%	48.9%
March 2006	High	54.3%	68.0%	54.1%
November 2004	High	54.9%	69.3%	48.1%

In 2025, an **excellent** LakeSPI Index of 86.3% was calculated, higher than all previous values between 2004 and 2020. Essentially the lake is fully vegetated, with a small non-vegetated patch between 3.2 and 3.4 m. Impact of the invasive bladderwort (*U. gibba*) had declined.

Water birds

No bird survey was undertaken in 2025. Extensive emergent vegetation and surrounding scrub areas provide excellent habitat for water birds. Bittern (*Botaurus poiciloptilus*), fernbird (*Bowdleria punctata vealeae*), New Zealand dabchick (*Poliocephalus rufopectus*) and spotless crake (*Porzana t. tabuensis*) were seen on previous visits. The Australian vagrant chestnut-breasted shelduck (*Tardorna tardornoides*) were reported in OSNZ records from 2000.

Fish

A fish survey undertaken in 2025 recorded 2 longfin eel (*Anguilla dieffenbachii*) ranging in length between 430-720 mm, 19 shortfin eel (*Anguilla australis*) ranging in length between 220-645 mm and one 49 mm long īnanga (*Galaxias maculatus*). Black mudfish (*Neochanna diversus*) have previously been reported from this lake.

Aquatic invertebrates

Freshwater sponges and water boatmen (*Sigara* sp.) were noted by the dive team in 2025 were recorded in the lake. No torewai were recorded.

Ball et al. (2015) record a total of 24 invertebrate taxa, with five different dragonflies and molluscs; the most numerous taxon being the water boatman *Sigara* sp.

Endangered species

Two At Risk-Declining wetland ferns, *Cyclosorus interruptus* and *Thelypteris confluens* were present in the marginal emergent vegetation.

The Nationally Critical *Utricularia australis* was common in this lake when first surveyed in 1985, but this species has not been found since 2004.

At Risk – Declining longfin eel (*Anguilla dieffenbachii*) and īnanga (*Galaxias maculatus*) were recorded in the lake for the first time in 2025.

The Nationally Critical bittern (*Botaurus poiciloptilus*), Nationally Increasing New Zealand dabchick (*Poliocephalus rufopectus*), At-Risk Declining spotless crake (*Porzana t. tabuensis*) and North Island fernbird (*Poodytes punctata vealeae*), were recorded on previous visits.

Lake Ecological Value

In 2025, an Ecological Value rating of **Outstanding** was calculated for Lake Waihopo, with a score of 14. Prior to 2021, this lake has had a consistently **High** rating, with an almost complete submerged vegetation of charophyte meadows, and with the declining impact of the invasive *Utricularia gibba* on Native Condition Index leading to the upgraded status. The dense emergent vegetation provides excellent buffering capacity and supports a number of endangered species. The improvement of lake water quality to mesotrophic (five-year median TLI = 3.8) has resulted in a slightly higher Ecological Value rating from 2021 to 2025.

Threats

Submerged weed species are unlikely to be introduced in Waihopo, but could badly impact the lake if this were to occur.

Lake water quality is currently mesotrophic, with an almost intact submerged vegetation. There appear to be some parts of the lake that are unfenced and a major inflow drain may be a source of additional nutrient to the lake. Vegetation history has shown the lake is vulnerable to change and vegetation collapse and high covers of cyanobacterial likely indicate nutrient enrichment in Lake Waihopo.

Management recommendations

Discuss fully fencing the lake with the landowner and investigate the southwestern drain to identify any mitigation options for nutrient addition.

Undertake lake ecological monitoring every five years.

References

Ball, OJ-P, Pohe, S.R., Winterbourn, M.J. (2015) Littoral macroinvertebrate communities of dune lakes in the far north of New Zealand. *New Zealand Journal of Marine and Freshwater Research* 49: 192–204.