Central and East Northland

Lake Ōwhareiti, NRC Lake No. 177

Lake Ōwhareiti: Photo taken from the north to show the main basin and pastoral catchment on volcanic soils. (Paul Champion, 2018)

Summary	Lake Ōwhareiti
Surveyed:	2006, 2018 and 2025.
Overall ranking:	**Moderate**: This large lake is severely impacted by the pest plant *Egeria densa* and water quality is poor but extensive emergent vegetation provides valuable habitat for endangered water birds
Threats:	Introduction of further invasive species, especially hornwort. The catchment is dominated by pasture, with consequent nutrient enrichment in the lake.
Management recommendations:	Recommend repair of fences and exclusion of cattle from the lake margin to landowners. No regular ecological monitoring is recommended.

Description

This lake (1685502E 6083555N) is 95.9 ha in area, with a maximum depth of 16 m. It was formed by a volcanic flow damming the outlet. The surrounding catchment is mostly pasture. There was cattle access to much of the lake, with several fences collapsed or broken. The lake has one inflow (to the south east) but no outflows. Access is through well-formed private roads and with gate access to adjacent farmland. Boat access requires a 4-WD.

Wetland vegetation

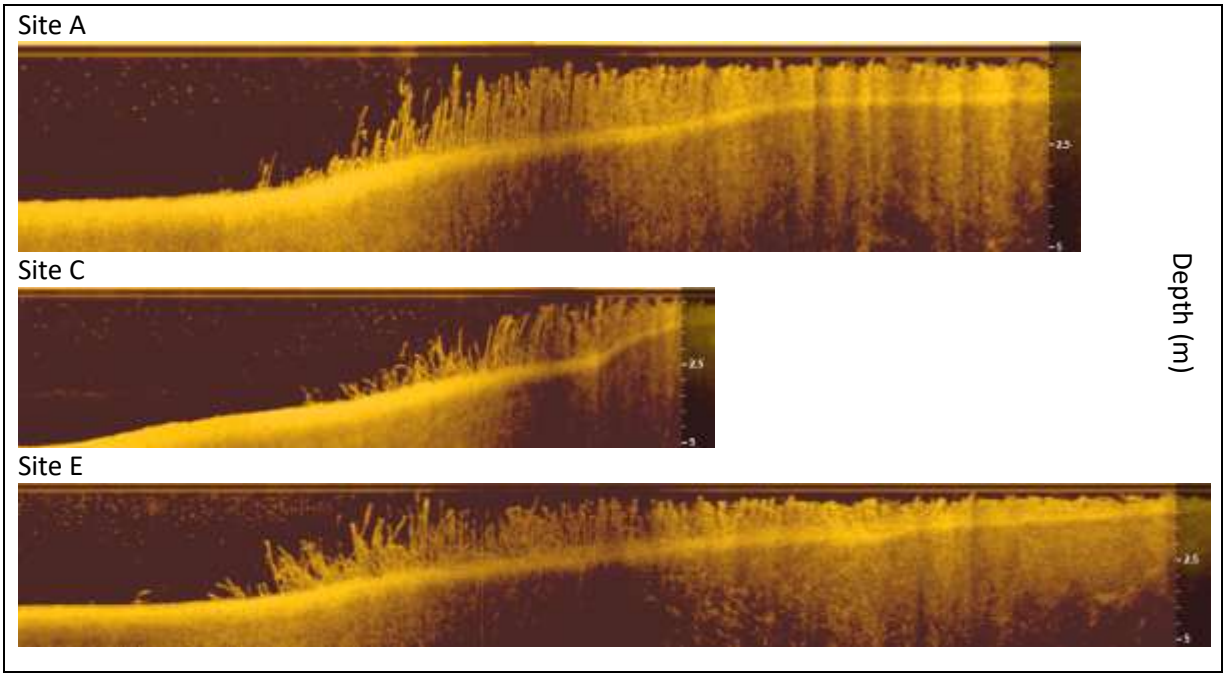
There was a fringe of emergent vegetation around much of the lake, 5-10 m across to 1.7 m deep. It was dominated by kuta (*Eleocharis sphacelata*) with lesser amounts of *Machaerina articulata* and *Schoenoplectus tabernaemontani*. Much of the lake margin is exposed to livestock entry due to inadequate fence maintenance.

In 2025, water levels were low, with extensive areas of exposed turf plants including *Glossostigma elatinoides* and *Myriophyllum propinquum. Elatine gratioloides, Limosella australis*, *Centipeda minima* ssp. *minima* and *Rorippa laciniata* were recorded in this vegetation for the first time in 2025. There were dense patches of the invasive weed primrose willow *(Ludwigia peploides* subsp. *montevidensis*) around the launching area on the north-western arm of the lake. This has increased significantly since its first detection in 2018.

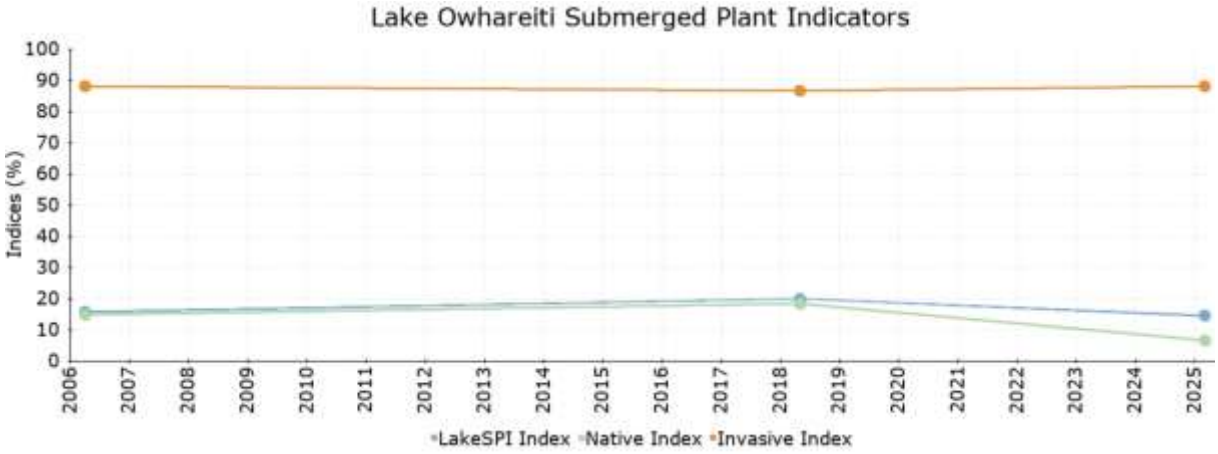
Submerged vegetation

Difficulty in accessing the lake and launching a larger vessel meant that a dive survey was not completed for Lake Ōwhareiti in 2025, with hydroacoustic traces, shallow water observations and grapnel/rake throws made at each of the five LakeSPI sites. The pest plant *Egeria densa* formed dense beds extending from between 1.1 to 3.6 m, with individual stalks extending to 4.2 m. *Chara australis, Potamogeton ochreatus* and *P. cheesemanii* were observed in shallow water. Egeria looked healthy and dense (heights obtained from hydroacoustic traces), with three traces shown below.

Previous surveys recorded a similar submerged vegetation.



LakeSPI



Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
February 2025	Poor	14.5%	6.7%	88.1%
April 2018	Poor	20.0%	18.5%	86.7%
March 2006	Poor	15.7%	14.8%	88.1%

In 2025, a **poor** LakeSPI Index of 14.5% was calculated, similar to values calculated for the two prior assessments. The poor LakeSPI Index was driven by the very high Invasive Impact Index with egeria dominating the vegetation.

Water birds

The large areas of emergent and wetland vegetation provide good habitat for many aquatic birds.

In 2025, 40 black swan (*Cygnus atratus*), two mallard or mallard-hybrid (*Anas p. platyrhynchos*), 71 paradise shelduck (*Tadorna variegata*), two New Zealand dabchick (*Poliocephalus rufopectus*), one Australian coot (*Fulica atra australis*) and one pied shag (*Phalacrocorax v. varius*) were observed.

Previously, Australasian bittern (*Botaurus poiciloptilus*), fernbird (*Poodytes punctata vealeae*), Australasian little grebe (*Tachybaptus n. novaehollandiae*) and scaup (*Aythya novaezeelandiae*) have been seen here.

Fish

Common bullies (*Gobiomorphus cotidianus*) were previously seen in the lake.

Aquatic invertebrates

Few aquatic invertebrates were noted.

Endangered species

At Risk – Naturally Uncommon *Centipeda minima* ssp. *minima* and Non-resident Native – Coloniser *Rorippa laciniata* was reported from the lake turfs for the first time.

New Zealand dabchick (*Poliocephalus rufopectus*) Nationally Increasing and the At-Risk birds;

Australian coot (*Fulica atra australis*), and pied shag (*Phalacrocorax v. varius* Recovering) were seen in 2025.

Lake Ecological Value

In 2025, an Ecological Value rating of **Moderate** was calculated for Lake Ōwhareiti, with a score of 7. The presence of At-Risk species found in the marginal turfs have increased from the score from the previous assessment (6 - also **Moderate**). Lake Ōwhareiti is a relatively large and deep waterbody, with poorly buffered habitat, low biodiversity, and a submerged vegetation dominated by the invasive plant egeria (*Egeria densa*).

Threats

Egeria had a major impact on other submerged vegetation, displacing other species from much of the depth range, but if introduced, hornwort could displace the egeria and lead to greater invasive impacts.

Egeria is implicated in the collapse of submerged vegetation in nutrient enriched lakes (Champion 2002; Schallenberg and Sorrell 2009). However, lakes that have undergone a switch to algal dominated turbid condition were frequently associated with egeria occupying a large proportion of the lake bottom, rather than the case with Lake Ōwhareiti, where much of the lake bed is beyond conditions able to support beds of this plant (maximum egeria weed bed depth is 3.6 m, with a maximum lake depth of 16 m. This compares to much shallower lakes such as Lake Ōmāpere, Waiparera and many shallow lower Waikato lakes (Champion 2002).

Much of the lake margin is exposed to livestock entry due to inadequate fence maintenance, contributing to the poor water quality.

Management recommendations

No regular ecological monitoring is recommended.

References

Champion, P.D. (2002). *Egeria densa* – an alien invasive plant responsible for the devegetation of New Zealand shallow lakes. *Proceedings of the Thirteenth Australian Weeds Conference*, Perth.126–129.

Schallenberg, M., Sorrell, B. (2009) Regime shifts between clear and turbid water in New Zealand lakes: Environmental correlates and implications for management and restoration. *New Zealand Journal of Marine and Freshwater Research* 43(3): 701–712.