

Te Hiku

Lake Waipara / Dead Lake (Aupouri), NRC Lake No. 25



Lake Waipara from the southern margin of scrub vegetation which now surrounds the entire lake with a contiguous emergent zone (2023, Paul Champion).

Summary	Lake Waipara
Surveyed:	2004, 2015 and 2023
Overall ranking:	High: The lake has an indigenous scrub and emergent margin; however submerged vegetation is reduced due to humic staining. Endangered birds are present.
Threats:	There is a low risk of introduction of invasive pests, but a possible threat from diggers and pine harvesting activities. Although well buffered from groundwater nutrient additions by scrub and emergent vegetation, extensive pig rooting combined with heavy rainfall may have led to the poorer water quality observed in 2023.
Management recommendations:	Lake native biodiversity value monitoring every 5 years.

Description

Lake Waipara (1586647E, 6172834N) is 1.3 ha in area and 4.4 m deep¹. The lake is surrounded by kānuka (*Kunzea linearis*) scrub and emergent or other wetland vegetation. Access is through 7 km of forestry roads. Prior to 2023, the lake was accessible via a forest road that ringed the lake, with plantation pine forestry on the surrounding hills. These roads have not been maintained and regenerating scrub makes access difficult. with trailer access possible at one point (bulldozed track to lake margin).

Wetland vegetation

In 2023, the lake was ringed by a 10 m wide emergent band of *Machaerina articulata* (edge to 2.5 m deep) and *Eleocharis sphacelata* (edge to 3 m deep), which had expanded considerably since 2015. Other emergent species seen were *Machaerina juncea*, *Eleocharis acuta*, *Cyperus ustulatus*, *Carex virgata*, *Juncus pallidus*, *Isachne globosa* and *Persicaria decipiens*.

Submerged vegetation

In 2023, submerged vegetation at one site was restricted to a discontinuous fringe of *Chara australis* (cover class of 26-50%) adjacent to the edge of the emergent sedges, with a maximum depth of 3.5 m. Water clarity was poor due to tannin staining but also due to a dense floc, likely resulting from the collapse of a planktonic algal bloom.

In 2015 and 2004, submerged vegetation was described as native but depauperate due to low light penetration. *Chara australis* was the most common charophyte, which extended from the edge of emergent vegetation to a maximum depth of 2.8 m. *Potamogeton cheesemanii* and *Myriophyllum propinquum* were the only tall-growing vascular plant species.

LakeSPI

Only one transect was surveyed by snorkel in 2023. No LakeSPI score was generated.

Water birds

The isolated nature of this lake with a scrub margin and entire emergent vegetation provides a good habitat for water birds. Birds seen in 2023 included grey duck (*Anas superciliosa*), hybrid mallard grey duck (*Anas superciliosa* x *A. platyrhynchos*), little shag (*Phalacrocorax melanoleucos brevirostris*) and little black shag (*Phalacrocorax sulcirostris*). In the 2004 vegetation survey, the nationally threatened bittern (*Botaurus poiciloptilus*) and regionally significant fernbird (*Bowdleria punctata vealeae*) were both recorded at this lake.

Fish

No fish were observed.

Aquatic invertebrates

Dense aggregations of tubificid (Oligochaete) worms were noted in the water column in 2023, likely feeding on the decaying algal floc. Pea mussels (*Sphaerium novaezelandiae*) and freshwater sponges were observed during the 2015 vegetation survey.

¹ <https://lakes380.com/lakes/waipara/>

Endangered species

Several threatened birds were noted in 2023, including grey duck (Nationally Vulnerable), little shag (At Risk – Relict) and little black shag (At Risk – Naturally Uncommon).

Lake Ecological Value

Lake Ecological Value of 10 (High) was calculated for Lake Waipara in 2023. This compared with scores of 8 (High to Moderate) in 2004 and 9 (High to Moderate) in 2015. The increase in natural catchment and wetland area has led to the improved Lake Ecological Value rating.

Threats

Risk of aquatic pest introduction is low, unless drainage machinery accesses the lake. Submerged weed impacts would be minimal due to low light penetration.

Despite the good marginal wetland buffer to nutrient addition via ground water/run-off, water quality appeared poor. This may be due to the very wet conditions over the 2023 summer exacerbated by extensive pig rooting within marginal scrub which could result in erosion and subsequent nutrient enrichment. Water quality was assessed as mesotrophic in 2021 (<https://www.lawa.org.nz/explore-data/northland-region/lakes/lake-waipara/>).

Management recommendations

Lake ecological assessment every 5 years.