Poutō Peninsula

Lake Kapoai (Poutō), NRC Lake No. 296

Lake Kapoai: Overview of lake from the eastern side. (Mary de Winton, 2025).

Summary	Lake Kapoai
Surveyed:	2005, 2007 2014, 2018 (all reconnaissance) and 2025
Overall ranking:	**Moderate**: Submerged vegetation dominated by *Potamogeton* species is present but the lake has a highly enriched nutrient status and poor marginal and emergent buffering.
Threats:	High nutrient enrichment with frequent algal blooms, likely exacerbated by the pest fish tench and rudd. Access to the lake is difficult and likelihood of submerged pest plant establishment is currently low.
Management recommendations:	Complete fencing the lake and consider planting options around the margins. Continue pest fish removal. Eradicate African feather grass. Lake ecological monitoring every 5 years.

Description

A dune lake (1674985E, 6010755N) 1.6 ha in size with a maximum depth of up to 12 m, but seemingly undergoing large water level fluctuations of up to 3.6 m. The lake is set within a pastoral catchment but has been fenced around much of the perimeter. There is an inlet at the northern end of the lake, draining approximately 2 km of pasture to the north-east. Access to the lake is across 2 km of private farmland with access through a locked gate.

Wetland vegetation

The emergent sedges *Schoenoplectus tabernaemontani* and kuta (*Eleocharis sphacelata*) were re-establishing on the lake margins but much of the lake margin was fringed by kikuyu (*Cenchrus clandestinus*).

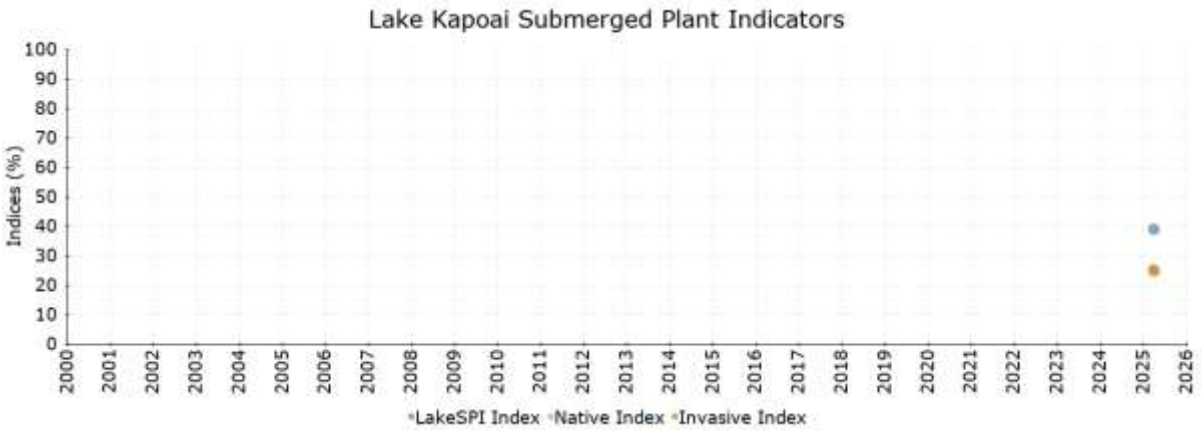
Short turf communities with *Fimbristylis velata, Centipeda aotearoana* and *Alternanthera nahui* present with the amphibious *Glossostigma elatinoides, Limosella australis, Myriophyllum propinquum* and *Callitriche petriei*.

The problem weed African feather grass (*Cenchrus macrourus*) was noted adjacent to the pump shed on the eastern side of the lake.

Submerged vegetation

In 2025, a potentially toxic cyanobacterial bloom was noted making the survey too hazardous for divers. The LakeSensR protocol was followed, measuring vegetation depths and height by hydroacoustic traces, and remote sampling using a double-sided rake. The native pondweed *Potamogeton ochreatus* and introduced *Potamogeton crispus* were present at all five sites between depths of 1 and 1.8 m. Plants were estimated to have exceeded 10% covers at four sites, with dense mats of filamentous green algae noted in association with the pondweeds.

LakeSPI



Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
March 2025	Moderate	39.0%	24.8%	25.2%

In 2025, plants exceeded 10% covers at four sites and a LakeSPI score was generated for the first time. A **moderate** LakeSPI score of 39.0% was calculated.

Water birds

In 2025, this lake had a high concentration of waterfowl, including c. 240 paradise shelduck (*Tadorna variegata*), c.60 mallard/mallard-grey hybrids (*Anas p. platyrhynchos / A. superciliosa x platyrhynchos*), as well as eight black swan (*Cygnus atratus*), six grey teal (*Anas gracilis*) and one Canada goose (*Branta canadensis*). Seven New Zealand dabchick (*Poliocephalus rufopectus*), including three juveniles were seen on the lake. Four black shags (*Phalacrocorax carbo novaehollandiae*) and two pied shags (*Phalacrocorax v. varius*) were also seen.

Fish

The pest fish goldfish (*Carassius auratus*), rudd (*Scardinius erythrophthalmus*) and tench (*Tinca tinca*) are recorded from this lake (NRC lake survey summary information 2025). NIWA FBIS records from this lake also include common bully (*Gobiomorphus cotidianus*) and shortfin eel (*Anguilla australis*), although no eels were caught in a NIWA survey targeting eels in 2014 (Crow and Jellyman 2014).

NRC have commenced removal of tench from Lake Kapoai, with >300 fish removed in 2023 and >6000 caught over past decade (Botting 2023).

Aquatic invertebrates

A large dragonfly (Odonata) nymph, likely to be *Aeschna brevistyla,* was noted floating on the lake surface in 2025.

Endangered species

The At-Risk Naturally Uncommon sedge *Fimbristylis velata* was common in the exposed lake-shore turf communities.

Nationally Increasing New Zealand dabchick (*Poliocephalus rufopectus*) and the At-Risk black shag (*Phalacrocorax carbo novaehollandiae*; Relict) and pied shag (*Phalacrocorax v. varius*; Recovering) were recorded in 2025.

Lake Ecological Value

In 2025, an Ecological Value rating of **Moderate** was calculated for Lake Kapoai, with a score of 6. It has a highly enriched nutrient status, likely exacerbated by the pest fish tench and rudd, and has poor marginal and emergent vegetation buffering. However, the presence of *Potamogeton ochreatus* at the LakeSPI sample sites at covers >10% has led to an increase in rating from "4-**Moderate-Poor**" assigned in 2014.

Threats

Access difficulty means the likelihood of submerged pest plant introduction and establishment is currently low.

Elevated levels of nutrients and sustained planktonic cyanobacterial blooms remain the highest threat to Lake Kapoai. Poor water quality is likely related to inputs from the pastoral catchment.

Lake Kapoai: Accumulation of cyanobacteria on the shoreline. (Lisa Forester, 2025).

Large populations of pest fish are also likely to impact the ecology of this lake, with rudd directly consuming submerged macrophytes and tench feeding on zooplankton, thus favouring continued planktonic algal blooms.

Management recommendations

Complete fencing of this lake is recommended to prevent livestock access. Much of the lake margin is vegetated by kikuyu, which is an efficient nutrient remover.

Continued removal of pest fish, targeting tench, is suggested, as is the eradication of African feather grass (*Cenchrus macrourus*) before it spreads further.

Undertake lake ecological monitoring every five years.

References

Botting, S. (2023) Northland's pest wars - turtles, wilding pines, wallabies and weeds. Northern Advocate, 27 September 2023. (https://www.nzherald.co.nz/northern-advocate/news/northlands-pest-wars-turtles-wilding-pines-wallabies-and-weeds/5RNTTS5RVZAPBIOSS6K63UD4Y4/#google_vignette)

Crow, S.K., Jellyman, D.J. (2014) Assessment of the eel fishery in the Pouto Lakes in Northern Kaipara. New Zealand Fisheries Assessment Report 2014/21. 36