North of Dargaville

Lake Taharoa, NRC Lake No. 229.

Lake Taharoa: (Lisa Forester, 2025).

Summary	Lake Taharoa
Surveyed:	1985, 1987, 2001, 2005, 2007, 2011, 2014, 2018, 2023 and 2025.
Overall ranking:	**Outstanding**: A native submerged plant dominated lake, with nationally rare plants. It is recovering from a loss of vegetation in 2023. Water quality trends show this lake is improving over the past five years, classed as microtrophic in 2024/25. Prior to 2023, Lake Taharoa was reported as the best example of a clear-water lake in Northland, with the deepest recorded (27.5 m) submerged vegetation in the North Island.
Threats:	The lake has a high risk of pest plant introduction but currently the subsequent impact likely to be low, due to very low nutrient status and steep bathymetry. There is a risk of gold clam spreading from the Waikato. Koi carp may be present in this lake. Nutrient loading from the catchment is a major threat with potential sources from nitrogen-fixing woody vegetation, pine harvesting and livestock farming.
Management recommendations:	Signage and advocacy for 'Check, Clean, Dry' is of utmost importance at this lake. Pest plant surveillance is advised at the access point annually. A fish survey targeting koi carp is advocated along with eDNA sampling. Lake ecological monitoring should be undertaken every five years.

Description

This dune lake (1658567E, 6037260N) is the second largest (237 ha) and is the deepest lake (38 m) in Northland. It is situated in a catchment comprised of ~1.8 M year old consolidated, nutrient-poor, sand dunes with shrub land, pastoral land and planted forest, harvested in late 2010. The immediate surrounds include a domain with two camping grounds and the lake is popular for boating, swimming and water skiing. There are two minor inflows at the south-west end of the lake, with no outflow. Seventy percent of the lake's water is sourced from rainfall[1]. Access is via public roads with one designated boat launching area.

Wetland vegetation

Emergent vegetation is naturally sparse around this lake, due to much of the shore being exposed to wave action and also being underlain by a hard iron pan that is unsuitable for the growth of emergent plants. Low covers (25%) of oioi (*Apodasmia similis*) and *Schoenus brevifolius* were present in places. Additional emergent species recorded included *Machaerina arthrophylla, M. articulata, M. juncea, Eleocharis acuta, E. sphacelata, Ficinia nodosa, Isachne globosa, Isolepis prolifera* and *Juncus pallidus*.

In 2025, all emergent plants were exposed above the lake level.

A number of nationally threatened and At-Risk plants were noted in marginal scrub and iron pan 2025 (see Endangered Species section).

The major woody weeds on the lake surrounds were delimited during 2014 with Sydney golden wattle (*Acacia longifolia*), coastal banksia (*Banksia integrifolia*) and two wilding pines (*Pinus pinaster* and *P. radiata*) the dominant species found. Some control of wattles and pines have been undertaken (L-J Clark, Te Roroa pers. comm.).

Submerged vegetation

In 2025, a diver survey of five LakeSPI sites of Lake Taharoa were undertaken to maximum depths between 17.2 m to 18.6 m. Charophytes exceeded 10% cover at three sites between 6 and 10.7 m, but deepest recorded plants ranged between 10.8 and 17.6 m. The most abundant species were *Nitella mucosa, N. leonhardii* and *Chara acanthopitys,* with *Nitella* sp. aff. *cristata* recorded in the lake for the first time. Algal mats seen in sediment at several sites, these were nobbly, and present to at least 10 m. The non-native rush *Juncus bulbosus* formed a shallow bed (0.4 – 1.5 m) with scattered small seedlings on three transects.

NIWA used a drop camera to observe depths beyond diver surveys to maximum of 26 to 30 m at each site. No further plants were seen but there were strange white reticulated markings on the sediment below 24.4 to 28 m, possibly dead charophytes with fungus/bacteria.

One plant of *Trithuria inconspicua* was seen on the southern shore of the Sin Bin area.

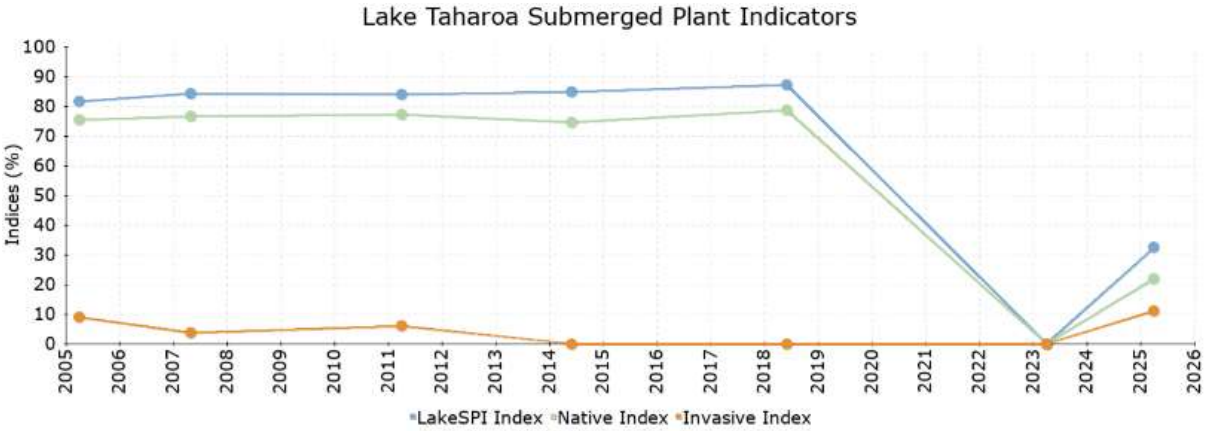
In 2023, the submerged vegetation had declined from previous surveys, < 0.1 m tall, with covers estimated as less than 10% cover, likely a result of the impacts of Cyclone Gabrielle, where large waves and some associated erosion of the lake edge were reported.

[1] https://lakes380.com/lakes/taharoa/

On all previous occasions, extensive charophyte meadows were recorded with plants growing to a maximum depth ranging from 18 to 27.5 m over the eight surveys from 1984 to 2018.

Lake Taharoa: Moderate covers of charophytes at 8 m depth (left), *Juncus bulbosus* at 1 m depth (right) (Mary de Winton 2025).

LakeSPI



Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
March 2025	Moderate	32.4%	22.0%	11.1%
March 2023	Non-vegetated	0.0%	0.0%	0.0%
May 2018	Excellent	87.2%	78.7%	0.0%
May 2014	Excellent	84.8%	74.7%	0.0%
March 2011	Excellent	84.0%	77.3%	5.9%
April 2007	Excellent	84.4%	76.7%	3.7%
March 2005	Excellent	81.6%	75.3%	8.9%

In 2025, a **moderate** LakeSPI Index of 32.4% was calculated. A **non-vegetated** status was recorded in 2023 based on a default LakeSPI Index of 0%. Although the difference in LakeSPI metrics between the two years were not significant due to variability between sites, the reestablishment of primarily native submerged vegetation is evident. It is expected that water clarity will be sufficient for charophytes to increase cover and depth range in the coming years, unless future storm events similar to Cyclone Gabrielle affect Lake Taharoa.

In all assessments prior to 2023, an **excellent** LakeSPI Index of >80% was obtained, reflecting the depth extent of vegetation, the predominance of the native charophyte community and lack of impact by invasive exotic plants. Prior to 2023, LakeSPI results had remained very stable.

Water birds

The limited development of marginal and emergent vegetation and popular use of this lake by the public reduce its suitability for water birds. In 2025, one North Island fernbird (*Poodytes punctata vealeae*) was heard adjacent to the lake, with two New Zealand dabchick (*Poliocephalus rufopectus*), one paradise shelduck (*Tadorna variegata*), five Caspian tern (*Hydroprogyne caspia*), thirteen red-billed gulls (*Chroicocephalus novaehollandiae scopulinus*), two northern New Zealand dotterel (*Charadrius obscurus aquilonius*), seventeen pied stilt (*Himantopus himantopus leucocephalus*), four pied shag (*Phalacrocorax v. varius*) and one little black shag (*Phalacrocorax sulcirostris*) seen.

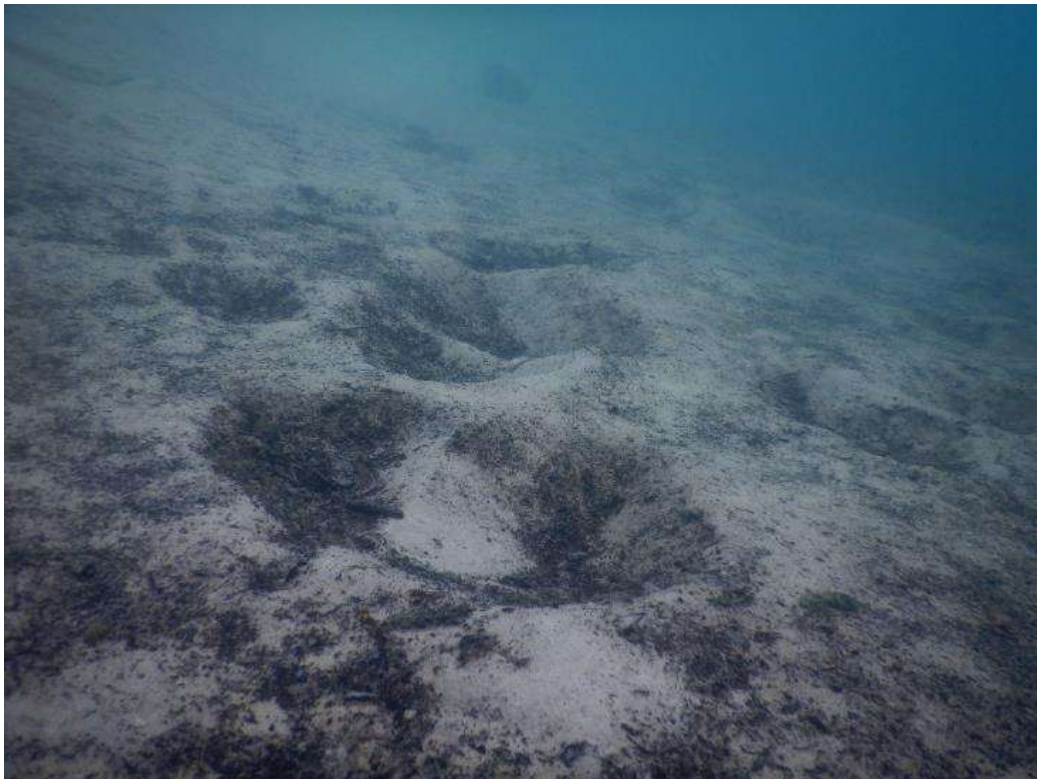
Fish

Native fish sighted during 2025 dive survey included many common bullies (*Gobiomorphus cotidianus*) and one dune lakes galaxias (*Galaxias* “dune lakes”).

Many dead bullies were noted on the dive profiles. Previous surveys have recorded shortfin eels (*Anguilla australis*), the pest fish gambusia (*Gambusia affinis*) and rainbow trout (*Oncorhynchus mykiss*) stocked by Northland Fish and Game.

There was a report of a koi carp (*Cyprinus rubrofuscus*) being seen in Lake Taharoa in 2021 by a member of the public. No further observations of this species have been made. However, divers noted large depressions beyond 2 m depth at two sites, potentially caused by pest fish.

Lake Taharoa: Dune lakes galaxias (*Galaxias* "dune lakes") (Mary de Winton 2025).



Lake Taharoa: Large depressions noted in bottom sediments at depths greater than 2 m (Mary de Winton, 2025)

Aquatic invertebrates

Kēwai (*Paranephrops planifrons*) and freshwater crab (*Amarinus lacustris*) were observed in 2025.

Lake Taharoa: Kēwai (*Paranephrops planifrons*) (Aleki Taumoepeau, 2023)

Endangered species

One plant of the Nationally Critical *Trithuria inconspicua* was seen on the southern shore of the Sin Bin area. This plant was never common in Lake Taharoa, and the 2025 sighting represents the first record of this plant since 2014. Dead plants of the spring annual Nationally Endangered *Centrolepis strigosa* were local in the lake-side scrub. At-Risk rare plants found in the marginal heathland scrub included the Declining orchid *Genoplesium pumila* and grass *Pentapogon quadrisetus*, and a small plant of the Naturally Uncommon fern *Hypolepis dicksonioides*.

Lake Taharoa: At-Risk Declining orchid *Genoplesium pumila* (Lisa Forester, 2025)

An At-Risk Naturally Uncommon dune lakes galaxias (*Galaxias* "dune lakes" - restricted to the Kai iwi lakes) was observed which apparently had been damaged on the head by a predator.

There appears to be a secure population of the freshwater crab (*Amarinus lacustris* - At Risk Naturally Uncommon) in Lake Taharoa.

Threatened birds observed in 2025 included the Nationally Vulnerable Caspian tern (*Hydroprogyne caspia*), Nationally Increasing New Zealand dabchick (*Poliocephalus rufopectus*) and northern New Zealand dotterel (*Charadrius obscurus aquilonius*). A number of At-Risk species included the Declining red-billed gull (*Chroicocephalus novaehollandiae scopulinus*) and North Island fernbird (*Poodytes punctata vealeae*), Recovering pied shag (*Phalacrocorax v. varius*) and Naturally Uncommon little black shag (*Phalacrocorax sulcirostris*).

Lake Ecological Value

In 2025, Lake Taharoa was assessed with an **Outstanding** Lake Ecological Value score of 13, a slight improvement from 2023, due to an increased Native Condition Index indicating a slow recovery from a non-vegetated status recorded in 2023. Mean annual water quality trends show this lake has improved over the past five years and July 2024 to March 2025 data equated to a TLI of microtrophic (1.9).

Threats

While good boat access to the lake results in a high risk for the introduction of pest plants, the potential impacts are currently very low. Firstly, the exposed wave cut platforms around the lake reduce the likelihood of establishment and secondly, unusual water chemistry limits the development of large vascular plants, likely due to dissolved inorganic carbon limitation. However, changes in water chemistry could make the lake more vulnerable to pest plant invasion in the future. Such a change would be initially indicated by development of tall-growing native vascular plants such as *Myriophyllum* spp. and *Potamogeton* spp.

Lake Taharoa is a popular destination for both local boaties and also visitors from outside of the region. The 2023 incursion of gold clam (*Corbicula fluminea*) into the Waikato River could feasibly provide a source of this mollusc for subsequent transfer to this lake. Biosecurity rules are in place to stop the spread of the clam through a mechanism under the Biosecurity Act called a Controlled Area Notice which covers all parts of the Waikato River downstream of the Whakamaru Dam[2]. Wake boats used in the area known to be colonized by gold clam are not permitted for use outside of this area. Other recreational vessels must be decontaminated using 'Check, Clean, Dry' prior to movement to other water bodies.

Large numbers of the pest fish gambusia could threaten the population of the endangered dune lake galaxias. Potential evidence of pest fish feeding below 2 m depth was noted at two sites.

Nutrient loading from the catchment is a major threat with potential sources from nitrogen-fixing woody vegetation, pine harvesting and livestock farming. Resulting changes in water chemistry would not only decrease water quality but could also facilitate native vascular and pest plant establishment.

Management recommendations

Pest plant surveillance should be undertaken at the access point and eDNA could be sampled to detect new incursions such as gold clam on an annual basis. Signage and advocacy for 'Check, Clean, Dry' is of utmost importance at this lake.

Undertake lake ecological monitoring every five years to assess recovery of submerged vegetation.

A survey of Lake Taharoa fish and benthic invertebrates, targeting koi carp (*Cyprinus rubrofuscus*) is advocated. A combination of gill, trammel and fyke nets is recommended by Collier and Grainger (2015).

Reference

Collier, K.J., Grainger N.P.J. (eds) (2015) New Zealand Invasive Fish Management Handbook. Lake Ecosystem Restoration New Zealand (LERNZ; The University of Waikato) and Department of Conservation, Hamilton, New Zealand. 212.

[2] https://www.mpi.govt.nz/biosecurity/exotic-pests-and-diseases-in-new-zealand/long-term-biosecurity-management-programmes/exotic-freshwater-clams-corbicula/rules-to-stop-the-spread-of-exotic-freshwater-clams-corbicula/