

## Te Hiku

Tāniko (formerly Te Paki Dune Lake) NRC Lake No. 15.



Tāniko, taken from the mobile dune, with manuka scrub (Daniel Clements 2019).

Summary	Lake Tāniko
<b>Surveyed:</b>	2005, 2007, 2013, 2015 and 2019.
<b>Overall ranking:</b>	<b>Outstanding:</b> This isolated shallow lake, within native scrub and dunes, has an outstanding indigenous vegetation including an endangered species but with some impact by the invasive <i>Utricularia gibba</i> . This lake supports the last recorded healthy population of the 'Nationally Critical' <i>Utricularia australis</i> in Northland.
<b>Threats:</b>	Low risk of introduction of invasive pests. There are few threats of nutrient enrichment if the catchment is not developed.
<b>Management recommendations:</b>	Lake biodiversity value monitoring every 5 years.

## Summary

**Survey dates** 2005, 2007, 2013, 2015 and 2019.

### Overall ranking

**High:** This isolated shallow lake, within native scrub and dunes, has an outstanding indigenous vegetation including an endangered species but with some impact by the invasive *Utricularia gibba*, which is now widespread in Northland. This lake supports the last recorded healthy population of the 'Nationally Critical' *Utricularia australis* in Northland.

### Threats

Low risk of introduction of invasive pests. There are few threats of nutrient enrichment if the catchment is not developed.

### Management recommendations

Lake native biodiversity value monitoring every 5 years. Vehicle access is becoming increasingly difficult due to the overgrown track. Track maintenance or use of a smaller vehicle will become necessary in the future.

## Description

The lake (1580999E, 6178871N) is 2.2 ha, about 2.2 m deep and situated between mobile dunes and areas vegetated by manuka and hakea. The lake has no inflows or outflows. Access is through private land and a narrow sandy overgrown track (4-WD). There are no formed tracks for lake entry and no ready boat access.

### Wetland vegetation

Approximately 60% of the lake was covered with emergent vegetation, dominated by *Machaerina articulata* and *Eleocharis sphacelata* growing to depths of 1.0 and 2.2 m respectively. There was no emergent vegetation in the vicinity of the dune face. Other emergents reported from water less than 0.2 m depth were *Machaerina juncea*, *Eleocharis acuta*, *Typha orientalis*, *Isolepis prolifera* and *Pericaria decipiens* and the regionally uncommon *Sparganium subglobosum*.

### Submerged vegetation

Charophyte meadows of *Chara fibrosa*, *C. australis* (~ 0.5 m tall) and *Nitella* sp. aff. *cristata* were present in open areas of water and amongst emergents with some areas of tall *Potamogeton cheesemanii* (2 m tall) and *Myriophyllum propinquum* (1 m tall). The nationally endangered *Utricularia australis* was abundant (about 50% cover) throughout the lake (Plate 2). The invasive exotic *Utricularia gibba* was the only invasive present but had native charophytes growing beneath it.

### LakeSPI

In 2013, a drop in LakeSPI score to 57% reflected the increased extent of the invasive *U. gibba*. No LakeSPI score was generated in 2015.

A single transect was surveyed in 2019. LakeSPI index was 71 (High) with a Native Condition Index of 86 and Invasive Impact Index of 33. *Utricularia gibba* was restricted to shallow margins of the lake, with a lower impact than in 2013.

**2007 LakeSPI Index as % of potential score.** Native Condition Index, and Invasive Impact Index (from left to right). 2007 and 2013 values shown.

Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
April 2013	High	57%	79%	49%
April 2007	Excellent	88%	90%	11%

## Water birds

The isolated nature of the lake and large areas of emergent and wetland vegetation provide good habitat for many aquatic birds. Few birds were seen during the field visit, but it is likely that several endangered species utilise this area. Fernbird (*Bowdleria punctata vealeae*) were reported on the DOC SSBI from 1991.

## Fish

Several large shortfin eels (*Anguilla australis*) were noted in the lake in 2007, with a 0.8 m eel seen in 2019.

## Aquatic invertebrates

The native leech *Richardsonianus mauianus* was present. Other invertebrates recorded in 2019 were the large dytiscid beetle *Onychohydus hookeri*, backswimmers (*Sigara arguta*), damselfly (*Xanthocnemis* sp.) and dragonfly (*Hemicordulia* sp.) nymphs.

## Endangered species

The Nationally Critical *Utricularia australis* appears to be thriving in this lake, by far the largest known lake population of this plant in Northland.

## Lake Ecological Value

Based on the 2013 survey a Lake Ecological Value rating of 11 (High) was calculated. With additional species richness and improving LakeSPI Native Condition Index, the Lake Ecological Value had increased to 13, putting Tāniko into the Outstanding category.



**Tāniko flora.** with the critically endangered *Utricularia australis* on a native charophyte meadow of *Nitella* sp. aff. *cristata* (top left); tall-growing *Potamogeton cheesemanii* reaching the surface (top right); and the emergent rush *Eleocharis sphacelata* in a meadow of *Chara fibrosa* covered with the invasive *Utricularia gibba* (bottom).

### Threats

Due to the poor access and isolated nature, the likelihood of additional invasive introductions is very low.

Threats of modification of the scrub/mobile dune catchment are not foreseeable.

### Management recommendations

Lake biodiversity value monitoring every 5 years.