

## North of Dargaville

### Waipuna Lake (Hokianga) NRC Lake No. 197a



**Waipuna Lake.** Viewed from the west, note mobile dunes at the western end and scrub vegetation further east (Photo: Paul Champion 1 May 2018).

#### Summary

**Surveyed** 2018.

#### Overall ranking

**Moderate:** A small lake, formed from Waipuna Stream dammed by mobile devegetated sand dunes, with no outlet. The upper catchment is within recently harvested plantation pine forestry, with scrub surrounding the eastern lake margins. A diverse and predominantly native submerged vegetation.

#### Threats

Very low risk of pest plant introduction due to very difficult access. Moderate risk of increased nutrient loading dependent on forestry management.

#### Management recommendations

Five yearly monitoring.

## Description

A small (1 ha) dune lake (1631125E, 6071825N), with a maximum depth of 6.3 m. The seaward half of this lake is bounded by mobile sand dunes, with scrub and pampas dominating the landward half. The Waipuna Stream drains a pine plantation forest catchment, which had been harvested prior to 2018 visit. Three inflows were noted, but there is no apparent outflow, with the lake around 20m above sea level. Access is difficult and for 4-WD only, via forestry roads, then driving along coastal dunes and scrub and a steep dune face.

## Wetland vegetation

Emergent vegetation was restricted to the northeastern end of the lake, with kuta (*Eleocharis spachelata*), *Machaerina articulata*, *Schoenoplectus tabernaemontani* and raupo (*Typha orientalis*) common. Sprawling species included *Persicaria decipiens* and two introduced species, water cress (*Nasturtium officinale*) and the pest plant primrose willow (*Ludwigia peploides*).

## Submerged vegetation

A diverse submerged vegetation was found in clear water with underwater visibility of 3 to 4 metres. Submerged vegetation restricted to areas deeper than 1.2 m to a maximum 6.3 m deep in areas adjacent to mobile dunes, but from 0.3 m to 5.3 m further east. Five charophyte species were seen, with *Nitella pseudoflabellata* the commonest, with average covers >5% for *Chara globularis* and *N. hyalina*. *Myriophyllum propinquum*, *M. triphyllum*, *Potamogeton ochreatus* and *P. cheesemanii* were also present with the introduced swamp lily (*Ottelia ovalifolia*). The invasive *Utricularia gibba* was present at low covers over much of the submerged vegetation, occasionally forming dense mats.

## LakeSPI

Lake Waipuna (Mitimiti) Submerged Plant Indicators

Survey Date	Status	LakeSPI %	Native Condition %	Invasive Impact %
May 2018	High	70% 	73% 	28% 

The high covers of charophyte dominated vegetation resulted in a 'High' status, with a 28% Invasive Impact Index score resulting from the presence of *U. gibba*.

## Water birds

None recorded.

## Fish

None noted.

## Aquatic invertebrates

None noted.

## Endangered species

No threatened species were observed.

## Lake Ecological Value

Waipuna Lake ecological value rating is assessed as "6 - moderate", a small water body, with poorly buffered habitat, but high biodiversity and diverse charophyte dominated submerged vegetation.

## Threats

There is a very low risk of pest plant introduction due to difficult access. The felling of pines around much of lakes catchment did not seem to have impacted the water clarity of this lake. There is a moderate risk of increased nutrient loading dependent on forestry management.

## Management recommendations

An isolated lake that is difficult to access, but further information on biota and water quality is required to assign a full ecological condition score. Five yearly monitoring is recommended.