

## Te Hiku

Lake Pretty (Aupouri), NRC Lake No. 24.



Lake Pretty from the beach access point (west end of lake). Photo – Lisa Forester, NRC.

Summary	Lake Pretty
<b>Surveyed:</b>	2004 and 2015
<b>Overall ranking:</b>	<b>High-Moderate:</b> Small shallow lake with no invasive biota other than <i>Utricularia gibba</i> , steep sided except for west end.
<b>Threats:</b>	Low risk of introduction of invasive pests. Risk of nutrient enrichment from pine plantation activities (logging, fertilisers), evidence of impact by wild horses and possibly cattle.
<b>Management recommendations:</b>	Lake native biodiversity value monitoring every 5 years.

### Description

The lake (1584443E 6173185N) is approximately 5.7 ha in area with a maximum recorded depth of 7.2 m. Catchment of plantation pine forestry on Holocene sand dune field. No inflows or outflows. Accessed through well-formed private forestry roads, no ready boat access.

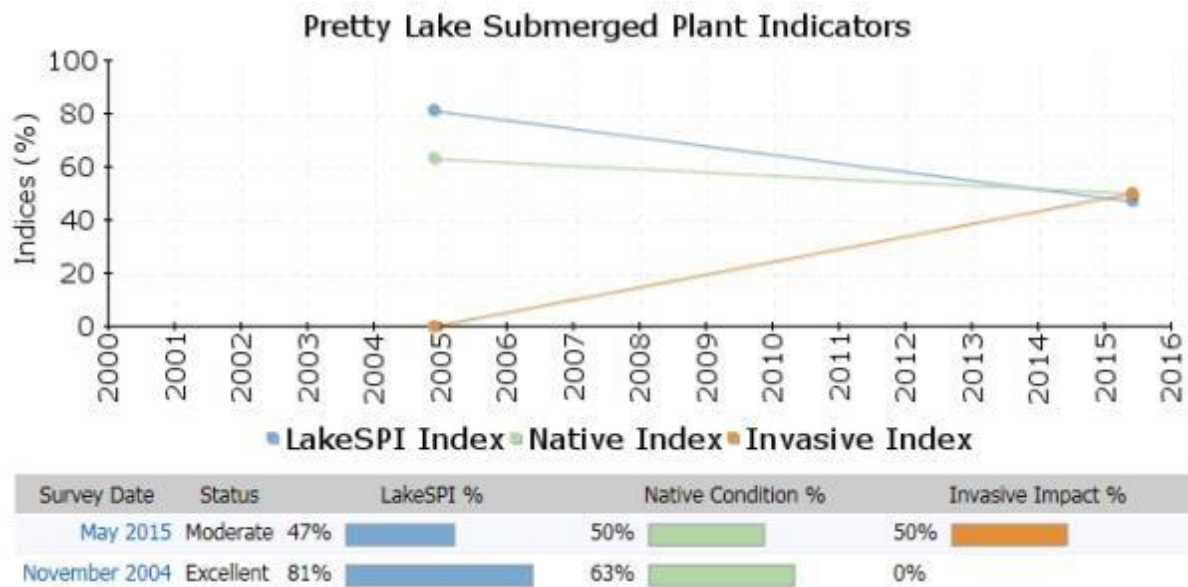
### Wetland vegetation

Much of the lake margin is steep sided, with margin predominantly of kanuka scrub with rushland at access point. Emergent vegetation was sparse (30% of lake shore), forming a narrow (c. 1 m wide) intermittent fringe. Dominant species were *Eleocharis sphacelata*, *E. acuta*, *Machaerina articulata* and *Juncus pallidus*.

## Submerged vegetation

Open turf was dominated by *Glossostigma elatinoides* and *Myriophyllum propinquum* on lake margins to 1.2 m deep. Below this (particularly at the west end) were charophyte meadows dominated by high cover, tall, *Nitella leonhardtii* (1.1 m tall) and *Chara australis* (0.6 m tall) with bands of tall (1.7 m) *Potamogeton cheesemanii* to 2 m deep and *Potamogeton ochreatus* (also 1.7 m tall) to 3.9 m deep. No endangered or invasive plant species were found. *Utricularia gibba* was prevalent to 3 m deep and other charophytes species included *Chara fibrosa* and *Nitella pseudoflabellata*.

## LakeSPI



**Lake Pretty, LakeSPI Index as % of potential score since 2005.** Native Condition Index, and Invasive Impact Index (from left to right).

A moderate LakeSPI index of 47% (**Error! Reference source not found.**) reflects the diverse native submerged vegetation presence but with a high impact from *U. gibba*, a species not recorded at the lake in 2005. Additionally, maximum vegetation depth decreased from 4.4 to 3.9 m in 2015.

## Water birds

Poor water bird habitat is provided by the sparse wetland vegetation. One Australasian little grebe (*Tachybaptus novaehollandiae*) and a kingfisher (*Todiramphus sanctus vagans*) were noted on the 2015 survey.

## Fish

Common bullies (*Gobiomorphus cotidianus*) frequently observed on field inspection.

## Aquatic invertebrates

No aquatic invertebrates recorded on the field inspections.

## Endangered species

The Colonising species Australasian little grebe was noted on the 2015 survey. No other threatened species were recorded on either ecological survey.

## Lake Ecological Value

Based on the 2005 survey a Lake Ecological Value score of 7 (Moderate) was calculated. The invasion of *U. gibba* between 2005 and 2015, had led to a decline in Native Condition Index from 63 to 50%, but an additional two indigenous aquatic plant species were found in 2015 (total of 16 species). Additionally, water quality data from 2004 report this lake as mesotrophic, which has led to an increased score. The overall 2015 Lake Ecological Value score increased to 9 with a lake rating of High to Moderate.

## Threats

There are currently no pest plants or fish reported from this lake. The access through private forestry roads (6 km off access road) and poor boat access mean the likelihood of introduction of alien species is low, but if introduced, these could have major deleterious impacts on the lake.

There is apparently some livestock access (cattle, horses) based on pugged lake margins and absence of emergent vegetation in shallow water areas.

A drop in water level by approximately 3 m since pines were planted in the catchment was noted in 2004. Water levels appeared to have increased since that time, with dead scrub evident along much of the lake margin in 2015; presumably resulting from prolonged waterlogging.

## Management recommendations

Lake native biodiversity value monitoring every 5 years.