

## Poutō Peninsula

### Lake Egg (Poutō), NRC Lake No. 355A



**Lake Egg.** Photo taken from the western side of the lake. (Photo: Nathan Arcus NRC, June 2020).

Summary	Lake Egg
<b>Surveyed:</b>	Recce June and August 2020, marginal plant survey 2021
<b>Overall ranking:</b>	<b>Moderate to Low:</b> A small fenced off lake highly degraded by a near 100% submerged cover of the invasive plant pest hornwort growing almost to the surface in places. There is a continuous margin of reeds and the lake is in a pasture setting, fully fenced and with no stock access.
<b>Threats:</b>	<p>Nutrient inputs from land use in the catchment would have led to enrichment. However, thick covers of hornwort are currently supporting good water clarity.</p> <p>Lake collapse is possible if the hornwort is left to continue to fill the lake. As hornwort has been eradicated from Roto- otuauru, this lake is a risk to other high value lakes.</p>
<b>Management recommendations:</b>	<p>Eradication of hornwort is planned for 2021/2022 as this pest plant is a threat to other nearby waterbodies.</p> <p>No other monitoring.</p>

## Description

Lake Egg (1702415E, 5978174N) is a perched dune lake with an open water area of 0.75 ha in area (total area including reed beds 1.92 ha). Depth was recorded from soundings with a weighted line and kayak with 4m toward the edges and a maximum depth of 7 m. The catchment is productive pasture. There are no inflow streams, but it appears that during very high lake levels the water could potentially overtop the lip to the north and spill towards the Lake Swan (Roto-otuauru) ephemeral outlet and down into farm drains via two eroded gullies.

Access to the lake is easy even during wet weather, down farm races off Poutō Road through either the Bishops or Woodcock (Marlow) farm access through a locked gate. Small boats can be launched by pushing through the reed bed, where it is at its narrowest on the southern side, although the closest a vehicle can get without dropping down through a steer paddock is 150 m from the launch area.

A water pipe is present in the lake, but it is unsure if this is a current water take.

## Wetland vegetation

The lake was surrounded by extensive beds of emergent species up to 20 – 40 m across and extending from the lake edge in a floating undercut mat. Species included raupō (*Typha orientalis*), *Machaerina articulata*, *Sparganium subglobosum*, *Carex fascicularis*, *C. maorica*, *Persicaria decipiens*, *Ludwigia palustris*, *Myriophyllum propinquum*, *Isachne globosa* and *Hydrocotyle pterocarpa*. Other plants recorded at the edge of the wetland/reed belt margin included *Isolepis prolifera* and the introduced *Callitriche stagnalis*, *Persicaria hydropiper*, *Juncus effusus* and the grasses *Cenchrus clandestinus* and *Paspalum distichum*.

## Submerged vegetation

Submerged vegetation in Lake Egg is dominated by a near 100% cover of the invasive plant pest hornwort (*Ceratophyllum demersum*) covering the entire lake floor and growing up to near the surface in places. The entire lake margin was also snorkeled and searched for pest weeds especially for oxygen weeds with none recorded. *Utricularia gibba* was present in low densities. *Potamogeton ochreatus* was at low covers of less than 1% and a single plant of *P. cheesemanii* was seen. In the lake/reed bed margin *Ludwigia palustris*, *Landoltia punctata*, *Azolla pinnata* and *Myriophyllum propinquum* were recorded.

In 2020, a ring of pooled water around the outside of the lake and a small pond at the eastern end was checked with no hornwort found. When water levels are high it is possible that water may spill over via a steep gully and into a drain that flows from Roto-otuauru. This drain was also checked with no hornwort found.

## LakeSPI

A LakeSPI assessment has not been undertaken for the Lake Egg but is likely to be categorised as poor due to domination by hornwort.

## Water birds

The lake, wetland and emergent margins provide water bird habitat. Two pairs of black swan (*Cygnus atratus*) were on the lake in July 2020. In August 2020, a pair of NZ dabchick (*Poliiocephalus rufopectus*) was present. Several mallard (*Anas platyrhynchos*) were on the lake and paradise shelduck (*Tadorna variegata*) were feeding nearby. In the reedbeds, threatened fernbird (*Bowdleria punctata*) and spotless crane (*Porzana tabuensis*) were heard.

## Fish

Common bully were seen and landowners report large eels in this lake. It has probably been used as a holding lake stocked by eel fisherman in the past which would explain why hornwort was introduced to both this and the nearby Roto-otuauru (Lake Swan).

## Aquatic invertebrates

Backswimmers (*Sigara arguta*) were recorded.

## Endangered species

The At Risk sedge *Carex fascicularis* (Declining) was occasional amongst the raupō dominant fringing emergent vegetation.

Two threatened bird's fernbird and spotless crane (At Risk Declining) were heard in 2020 and a pair of NZ dabchick (At Risk Recovering) were seen.

## Lake Ecological Value

The Lake Ecological Value score for 2021 is 5 (Moderate to Low).

## Threats

The catchment is productive pasture. Nutrient inputs from land use in the catchment would have led to enrichment, however, thick covers of hornwort and dense emergent raupō are currently supporting good water clarity.

Hornwort represents a threat to other adjacent high-value lakes if anyone accesses the lake e.g. for duck hunting or eel fishing, and accidentally transfers fragments of the plant on equipment. Advice from the farmer is that no one is currently using the lake.

The thick, undisturbed reed beds currently act as a buffer, appearing to contain hornwort within the open water. There is a possibility at high lake levels and during a rainfall event the lake could spill over into gullies that ephemerally flow from Roto-otuauru (Lake Swan) and discharge into nearby farm drains.

## Management recommendations

Eradication of hornwort in this lake is recommended and is planned for 2021/2022 using the herbicide endothall dipotassium.

No other monitoring is recommended.



**Dense beds of the pest plant, hornwort in Lake Egg.** (Photo: From GoPro footage Lisa Forester NRC, June 2020)