

Lake Tuakitoto Catchment Outline Management Plan

Vision

A thriving Lake Tuakitoto catchment, where water quality and biodiversity are maintained and enhanced through community action to contribute to a healthy ecosystem for all to enjoy.

Values

- The natural environment and ecosystem of Lake Tuakitoto and its catchment are to be protected and enhanced
 - o Land use within the catchment has been altered over time with the removal of native vegetation with associated increased sedimentation and contamination within the catchment. There are both historic and current causes to these issues and finding a balanced solution in some cases will be complex. The health of the catchment as a whole is important and links to how it is functioning and enjoyed.
 - o Lake Tuakitoto is considered a nationally important freshwater fishery habitat which supports longfin eel, shortfin eel, whitebait/inanga, common bully and giant kokopu.
 - o Lake Tuakitoto is a regionally significant wetland as it provides roosting, feeding and breeding habitat for Banded Dotterel, Marsh Crake, Spotless Crake and the South Island Fernbird as well as habitat for giant kokopu, swamp nettle and *Isolepis basilaris*. There is also important habitat for waterfowl, waders and swamp birds including supporting a significant proportion of the population and breeding of Mallard, New Zealand Shoveller/Kuruwhengi, Black Swan and Grey Teal.
 - o There is a high diversity of indigenous flora and fauna. Exceptionally high diversity of bird life present with over 50 species of bird recorded.
 - o To preserve and protect the wetlands, rivers and streams and their margins that there is no further loss or degradation within the catchment

- Recreational uses of Lake Tuakitoto are enabled.
 - o Lake Tuakitoto has many recreational assets such as fishing, walking, bird watching and hunting. By improving public access the recreational capacity and ability of people to enjoy the lagoon is enhanced. It is important that the impacts that recreation has on the environment, the values of mana whenua and property rights are managed carefully. A connection between the environment, the local community and visitors to the area is important. There may be times, such as in duck shooting season where the area is not suitable for recreational activities such as walking to be undertaken and this is important to note.

- Mana whenua values are protected and enhanced.
 - o Highly valued by Kāi Tahu for cultural and spiritual beliefs, values and uses including mahika kai and waahi taoka. Important for its historical associations and as a traditional food gathering area.

- Hydrological values in regards to maintaining water quality and low flows as well as reducing flood flows.
 - o Lake Tuakitoto and surround wetlands perform a valuable hydrological function. Serves as a flood ponding area and is an integral part of the Lower Clutha Flood Control and Drainage Scheme.

Issues

- Flooding –the ideal lake level
- Water quality (Nutrient levels are high)
- Impacts on the freshwater mussel population
- Boundary location – ORC vs Private landowners
- Sedimentation
- Degraded habitat for Giant kōkapu, īnanga
- Fish Passage restrictions due to infrastructure

Objectives

- To improve the water quality and meet the National Freshwater and Otago Regional Council Land and Water Plan standards in Lake Tuakitoto and the catchment which feeds this for environmental, mana whenua, and recreational uses
- To improve biodiversity within the catchment
- Support a healthy ecosystem which sustains and enables mahika kai
- Improve water quality to support recreational fishing.
- To preserve and protect the wetlands, rivers and streams, their margins and the saline environment so that there is no further loss or degradation within the catchment
- To encourage and support soil conservation to minimise sedimentation
- To maintain and enhance public access around Lake Tuakitoto
- To ensure that the existing mussel beds present in the lake are enhanced and managed effectively
- To promote Lake Tuakitoto and encourage people to visit and use the lake.
- The management of the Lake is influenced by good quality science.
- To manage flood risk and land drainage for adjacent land

Robsons Lagoon Climate Resilience Project - Delivered by ORC

This project will upgrade infrastructure to assist with the flood management within and adjacent to the Robson Lagoon, whilst protecting its natural and ecological values. Robson Lagoon is part of the regionally significant Lake Tuakitoto Wetland complex and the project is to replace flow management structures to allow sustainable water levels for habitat and during flood events as well as providing for native fish passage.

Potential Projects

Catchment Wide projects:

Ecological Assessment

- Investigate the balance between the needs of human interaction with the wildlife (hydrological function, ecology, wildlife, walking tracks, flood hazard etc). Include assessment of what the limits are for the system in this catchment (tipping point). What are the key stressors and how resilient is the catchment. What actions do we need to undertake to make the catchment more resilient.

Water Quality Improvements

- Water Quality Data is relevant and influences management of the lake. Introduce a water testing programme including locations around the lake and within the catchment to assist with identifying sources of poor water quality.
- Funding scheme provided for landowners to restore buffer/riparian zones and recreate wetlands in the upper catchment (including fencing).
- Citizen science
Support ongoing water quality monitoring programme as a way to generate data for the catchment and as an important community engagement tool.

Hydrology

- Investigate the impacts of flooding within the catchment and further research to ensure that the current lake levels are sufficient to support environmental enhancement, flood protection and recreation.

Improve Biodiversity

- Facilitate a riparian planting plan for the catchment (include community planting days)
- Ecosystems restored
Support, advice and resources provided to aid landowners with riparian planting projects to restore the ecosystem. Riparian planting and wetland restoration. Sediment traps/filter strips/wetlands in place to stop sediment entering the lake.
- Pest and weed programme
Support and provide resources to assist neighbours to form groups to tackle weed and pest species in a combined and aligned effort. The aim is to control predators of birds and to minimise impacts on the native forest in the area and to control weeds where fast growing exotic species out compete natives. Weed species include crack willow, glyceria and rank grass
- Retain and maintain native fish populations such as Giant kōkapu, īnanga and kākahi (freshwater mussels). Need further research into mussel breeding and investigate the possibility of mussel spat ropes in place in culverts.

Fish Passage assessment and remediation/creation of habitat where required.

- Create deeper areas in the lake for fish refuge and where they can stay cool.
- Develop a fish passage management strategy
Examine fish passage issues within the catchment and develop a plan to prioritise these and how to implement changes to rectify these.

Community Outcomes

- Catchment group formed and supported
- Nursery - Support existing or support creation of a new nursery.
To provide locally grown plants for planting within the catchment
- Collaborative research projects with Telford, University of Otago, local schools. Field trips to this area.
- Communications plan to promote the Lake.

Lake specific projects:

Access and Walking track improvement

- Survey the location of the regionally significant wetland
- To maintain and develop public access around Lake Tuakitoto
Better signage directing people to the lake, maintain walking track and upgrade so suitable for cyclists and walkers. Identify opportunities with DoC and private landowners for sections surrounding the lagoon to be restored and developed for public access.
- Carpark needs maintained/upgraded.
Entry to be upgraded and set off the road for safety.
- Some short tracks off the main track as the main track is quite long. Include viewing points for bird watching, picnic tables/benches, jetty or boat access, interactive elements for kids eg. Climbing structures

Otago Regional Council owned land

- Undertake a feasibility study in consultation with the community about the use of ORC owned land and what the best use for this land is.

Indicators of success

- Number and size (area) of riparian enhancement projects completed each year.
- Metres of riparian margin fenced each year
- Metres of riparian margin planted each year
- Water quality indicators
- Number of and quality of public access points
- Community surveys
- Count of number of people who use the area
- Number of fish barriers rectified
- Egg counts for Inanga following habitat restoration to measure impact of restoration.
- Fish surveys to show thriving populations

Opportunities

The restoration of Lake Tuakitoto will require the collaboration of partners and stakeholders working together.

- Collaboration with neighbouring catchment groups
- Biosecurity programmes incorporated
- Community planting programmes
- Million Metres crowd funding campaign
- Walkway
- Motivated property owners

Priority Actions

Following engagement with the Lake Tuakitoto community and key stakeholders in February 2022 the three projects which are to be prioritised are:

1) Ecological Assessment

Investigate the balance between the needs of human interaction with the wildlife (hydrological function, ecology, wildlife, walking tracks, flood hazard etc). Include assessment of what the limits are for the system in this catchment (tipping point). What are

the key stressors and how resilient is the catchment. What actions do we need to undertake to make the catchment more resilient.

2) Water Quality Data

Water Quality Data is relevant and influences management of the lake. Introduce a water testing programme including locations around the lake and within the catchment to assist with identifying sources of poor water quality.

3) Hydrological Assessment

Investigate the impacts of flooding within the catchment and further research to ensure that the current lake levels are sufficient to support environmental enhancement, flood protection and recreation.

