

Waituna wetland scientific reserve project management

[Engineering](#), [Project Management](#)



Waituna Lagoon is part of the internationally recognised 20, 000ha Awarua Wetland. The 1, 350ha lagoon and immediately surrounding wetland known as the Waituna Wetland Scientific Reserve (an area of 3, 500ha) was designated a Ramsar Wetland of International Importance³ in 1976, with the wider wetland complex being included in 2008. A key commitment under the Ramsar Convention is to maintain and enhance the ecological health of the wetland. Waituna Lagoon is one of the largest remaining wetland systems in New Zealand and is made up of a number of nationally significant ecosystems. Its cultural significance to Ngai Tahu was recognised by a Statutory Acknowledgement under the NgaiTahu Claims Settlement Act 1998. The lagoon and wetland have also been a source of food and recreation for the wider community over many generations e. g. fishermen, hunters and trappers.

In 2001, individuals from the Waituna people group got to be distinctly mindful that changing and serious land utilize was having impacts on the catchment and tidal pond and set up the Waituna Land care Gather. From that point forward the group have held various field days to bring issues to light about great administration rehearses and dealt with undertakings to enhance water quality. In 2007 endeavors were ventured up. With financing help from the Administration, the Bureau of Preservation (DOC) Arawai Kakariki Wetland Reclamation Programme⁶ upheld various activities on ranches in the catchment. These activities included financing riparian fencing, course arrangement and riparian planting. This was bolstered by Condition Southland's ' Experiencing Streams' program. Another activity was the joint financing by DOC and Condition Southland of a committed Land

Manageability Officer for the Awarua and Waituna catchments to give focused on exhortation and help to agriculturists and the group on feasible land administration honours.

Solid individuals and a dynamic group. Feasible cultivating group that guarantees their long haul future. 2. Kaitiakitanga Solid relationship between Ngai Tahu and their way of life and conventions with their familial grounds, locales, waahi tapu and other taonga, and the practice of kaitiakitanga. 3. Entertainment and feeling of place Cocoa trout fishery values, stylish gratefulness, chasing and other recreational open doors. 4. Sound catchment and tidal pond Solid tidal pond and wetland biological system in which the widely varied vegetation, for which the Awarua-Waituna is eminent for and perceived under Ramsar, thrive. Rich and sound established amphibian and wetland plant group in the tidal pond, especially types of Ruppia additionally wiwi and harakeke (flaxes). Keeping an administration move from a sea-going plant overwhelmed framework to an algal commanded eutrophic framework in the tidal pond. Catchment and tidal pond in such a solid state, to the point that they no longer require the engaged serious consideration they as of now get; the concentration movements to maintaining their qualities and valuing the

positive relationship which exists between the group and nature in which the group lives. The supplement and residue burdens to the tidal pond are decreased and an opening/shutting administration oversaw so that the tidal pond will show some eutrophic conditions as opposed to be an immaculate domain, yet will even now bolster sound macrophyte and fish groups. 5.

Concurred tidal pond levels Concurred water level administration for the tidal pond which accommodates every one of the estimations of the catchment. 6. Mahinga kai Plentiful and solid including: solid (flop), fish, waikoura (freshwater crawfish) and inaka populaces; a differences of life as a feature of a sound biological system; and keeping up solid enrolment of these from the mountains to the ocean 7. Solid streams Diversion, enhanced living space and water quality. 8. Biodiversity Secure, upgrade and esteem biodiversity. Copious and solid local fish, plant, invertebrate, reptile and winged creature populaces; assurance of wetlands in the catchment as shelters of biodiversity and for the biological community administrations they give; and tidal pond, stream, and wetland environments flourish and bolster indigenous biodiversity.

We are wanting to gauge, screen, and survey and praise our victories as we go, and will audit the advance yearly.

Evidence Waituna Tidal pond sits at the base of a seriously cultivated catchment. Due to numerous times of land improvement in the catchment, and changes in tidal pond water levels, its wellbeing and that of its tributaries is under anxiety. Arrive improvement has included: seepage of wetland ranges; leeway of indigenous vegetation; and later land utilize increase since the 1950s when the primary tributaries to the tidal pond were fixed, and Government plans cleared and created arrive and urged other individuals to do also.

Waituna is only one case of various tidal ponds and estuarine frameworks situated toward the finish of agrarian catchments which are under worry all through New Zealand. All things considered, the essential concerns are the loss of supplements and dregs from land utilize exercises, hence expanding the danger of the tidal pond getting to be distinctly eutrophic, and additionally the loss of wetlands through land advancement. Three vast brooks and other little conduits and homestead channels make up the seepage organize. This system transports water, dregs or soil particles, supplements and other material from the land inside the catchment to the tidal pond. Groundwater likewise transports supplements to the tidal pond. The administration of tidal pond opening occasions is vital as it impacts biological system wellbeing and homestead administration rehearses.

-Reject stock from conduits and wetlands. Ensure you have a cutting-edge supplement administration arrange and apply compost at proper rates, in suitable conditions. Oversee winter brushing exercises deliberately to anticipate overland stream conveying silt and supplements to conduits. Great natural practice incorporates; leaving a decent support (least of 3m is required), break sustaining towards the conduit and recognizing swales that convey spill over to conduits. Fence these swales out and leave unglazed until the finish of the season. Deal with a better than average riparian edge along conduits. These can be planted to shade water and help trap contaminants. Not certain what to plant? Get some guidance from our property manageability group.

RESOURCE MANAGEMENT

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Introduction

Resource management in this paper refers to the involvement of participating in scientific techniques to conserve the quality of nature such as forests, parks, lands and water. Managing resources are important in this generation as well as future generations because the public relies a lot on such type of resources. The resource is broken down into three parts which are resource efficiency, resource management and resource leadership. This report will be addressing ways in which Waituna Lagoon's poor water quality was managed and the people who were involved and helped in this project.

Waituna Lagoon's Project management

The project on Waituna Lagoon cost around \$1. 6 million dollars with crown funding of \$785, 000. The people involved in cleaning this lagoon were the Southland Regional Council, Dairy NZ, Department of Conservation, Federated Farmers, Fert Research and Southland District Council. The Iwi involved were the Te Ao Marama Inc. The funding was used to reduce the amount of sediment, nitrate and phosphorous entering the lagoon and associated wetlands, draining the lagoon of nutrient rich water to flush out sediments and to manage the flooding of the farmlands.

This issue was managed by opening the lagoon twice to reduce the sediment and nutrient levels in water column. The Environment Southland and DairyNZ have investigated options for locations for future opening and closing of Waituna Lagoon. Another way they are managing the issue is by reconstructing the steam bank which involves getting agreement from

landowners for designs of work occurring in certain sites. A monitoring site has been designed to assess the environmental improvements from the steam bank and reconstruction works (MFE, 2015). The locations of the wetland and sediment traps at priority sites and designed and constructed a wetland that provides an example of cost effective solution to managing and reducing nutrient leaching (MFE, 2015). Waituna lagoon as two filtration beds installed one with gravel sized lime rock other one is with crushed oyster shell and this was done to discover which would be most effective in removing phosphorous.

Teams of people and volunteers have also gathered to plant near the ponds. This project involved farm visits by the environment southland's sustainability team and provides individual on farm advice and work with community group to increase awareness of land management and good environmental practices for winter periods. Drainage enhancement was also enforced to remove weed and sediment and improve farm drainage. The fresh water clean-up involved reconstruction of banks along Waituna creek and the banks reconstruction was done by installing 17 tonne of rock.

People views- people and community supports this project as they want NZ to be a clean green country. Everyone has responsibilities to look after the environment that they work and live in. to stop the lagoon to be dominated by algal we need to reduce nutrients and sediments getting into creeks and lagoon. Community can help in this by making sure the nutrient management is up to date and apply fertilizers in appropriate conditions and rate, checking soil rate, adhere good management practices on the land,

getting involved with planting days and improving management of farm dairy and these practices showed that there has been a large improvement in the water quality. The water is clear now and not muggy and is suitable for organisms to live in such habitats.

This wet land contains habitats for plants and animals. Fish such as the Giant Kokopu *Galaxias argenteus* and Banded Kokopu *Galaxias fasciatus* and their national status is vulnerable. Birds such as New Zealand Dotterel *Charadrius obscurus* whose national status is endangered with less than 100 of them remaining. Therefore it is very important to protect the lands we live in so that the species habitat is not disrupted and New Zealand does not lose one of their main birds due to poor environment they live in. The public as well as other organisations are trying their best to protect and improve Waituna Lagoon and maintaining it as well.

Conclusions

To conclude the management of resources are broken into three parts which are efficiency, management and leadership. The management of the Waituna Lagoon was done by reconstructing the steam bank and monitoring the site as often as possible. The public and community were involved in this project as well and assisted in ways such as planting near the ponds.

Reconstructing the bank by installing 17 tonne rock was also managed by individuals in the projects. All these types of construction to the Lagoon and constant monitoring of the water proves that the water quality has improved drastically and has helped the organisms as well. The community and the government all helped in taking care of this resource as it is a significant part

of New Zealand's culture of being clean and green. This is good for future generations as well as no disease will be spread through the water. Cleaning up the Waituna Lagoon was a great idea proposed by the community of New Zealand to the government.

INTRODUCTION

Waituna Lagoon is the point of convergence of the Ramsar-assigned Awarua wetland complex on the Southern Coast of the South Island of New Zealand. It is thought to be one of the best outstanding examples of a natural coastal lagoon in New Zealand and is exceedingly esteemed by Ngai Tahu, fisherman, hunters, naturalists and neighborhood landowners. Expanding farming improvement and heightening in the Waituna catchment has been involved in the declining water quality and ecological strength of the lagoon (Environment Southland 2 2012). A scope of magagement activities to lessen silt and supplement contributions to the lagoon are presently being considered to address these issues. The 1350ha lagoon is at the heart of the Awarua Wetland, one of the biggest outstanding wetland buildings in New Zealand and home to various types of creepy crawlies, fish, plants and feathered creatures. The aggregate catchment zone is 20, 000 hectares. Transient winged animals travel long distances from the Northern Hemisphere to sustain in the lagoon during the southern summer. The logoon is a range of global noteworthiness under the Ramsar Convention.

LEADERS

Waituna dairy farmers, DairyNZ, Environment Southland, Department of Conservation, Ngāi Tahu, Fonterra, Federated Farmers, Beef and Lamb, Southland District Council, Fish and Game Southland and several community groups including iwi and residents.

PARTNERSHIP AT WAITUNA

The Department of Conservation, Environment Southland, Southland District Council, Te Runanga o Ngai Tahu and Te Runanga o Awarua, all have statutory parts in the leadership and management of Waituna Lagoon and its catchment. In 2013 they formally met up as the Waituna Partners. They will work close by the group and different partners for the long term advantage of Waituna Lagoon, its catchment, and the group. By cooperating they accomplished more noteworthy improvements than if they all worked independently, and avoid duplication of

efforts. Leaders main objective is to enhance the health and prosperity of Waituna Lagoon, its catchment, and group, for the utilization and satisfaction in present and future eras, while perceiving and providing the traditional relationship of Ngai Tahu with their ancestral lake/rohe.

How it works

Waituna Partners gives strategic direction and has obligation regarding accomplishing the vision of the Waituna Project. It is supported by a working gathering and a stakeholder gathering, each having its own particular duties. DOC has two agents which sit on this group – one being the most ranking

staff part in the region. The working group completes operational task as coordinated by the Waituna Partners. Logical and specialized guidance is appointed by and given to the working group as required. DOC has two delegates which sit on this group. One represents to the Arawai Kakariki wetland reclamation program, and the other, the Living Water DOC/Fonterra Partnership

The leaders group is known as the Waituna Catchment Group. It was set up as a forum for data sharing, discourse, input for the Waituna Partners, and as a check on agreed action and parts. Group and stakeholder information and activity is basic to the accomplishment of the project.

How waituna managing to lead people contribution for achieving project objective:

At the point when Environment Southland declared that the Waituna Lagoon was in risk of “ flipping” – changing to a dim, turbid state overwhelmed by green growth – Waituna local people got together to make a catchment activity plan to guarantee a sustainable future for the Waituna Lagoon and the group. As a component of this, individual homestead activity arrangements were drawn up and farmers are actualizing a scope of useful activities to secure the health of the lagoon, the catchment and the more extensive Southland condition. There are mind boggling explanations behind the declining health of the lagoon. Land management practices are one a part in the photo so enhancing practices have become part of the solution.

DairyNZ, with other partners, has been included from begin with science and research to help everybody comprehend tidal lagoon wellbeing, farming rehearses and the social and financial effect of potential changes. This sounds basic leadership.

<https://www.dairynz.co.nz/environment/in-your-region/southland-environmental-policy/the-waituna-project/> <http://www.doc.govt.nz/about-us/our-partners/our-regional-partners/waituna-partners/>

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