

# Arawai Kākāriki 2019 Programme Update



This year the Arawai Kākāriki programme saw some key developments in the protection and restoration of wetland habitat, management of threatened species and analysis of long-term monitoring data. The 2019 update provides a summary of our conservation efforts.

## Highlights from the past year

See inside for details:



The **swamp helmet orchid** *Corybas carsei* was recorded in the greatest numbers since its rediscovery



TV time for one of our national treasures – the **giant kōkōpu**



**Retirement of grazing licenses** to restore lowland wetland forest at Whangamarino



A new strategy for **fire prevention** at Awarua-Waituna



Research supporting **improved management of water levels** at Moawhitu and Kaimaumau-Motutangi



**Large-scale weed control** covering 16,000 ha of Ō Tū Wharekai

## A New Lakes Partnership

Arawai Kākāriki has partnered with GNS Science and the Cawthron Institute as part of the Lakes380 research programme. Lakes380 is focused on understanding 'lake health – past, present, future | Me hoki whakamuri kia haere whakamua.' The partnership will include focused investigation at the Ashburton Lakes and Lake Moawhitu.



Photo: Xavier Pochon, Cawthron Institute



Department of  
Conservation  
Te Papa Atawhai

## Awarua-Waituna

*The Murihiku operations team have had a productive year guarding against pests, working to protect against future fires and engaging the public in their passion for the Awarua-Waituna wetland.*

### Pest Control

Protection of the banded dotterel and fernbird drives predator control on Tiwai peninsula with 594 predators caught this year!!! Rabbits and black-backed gulls are also controlled to protect plant communities from grazing and the introduction of weeds and excess nutrients in the droppings. Post-control surveys show reductions of 94% and 80% respectively.

### Fire Prevention

The Tiwai aluminium smelter have agreed to run power lines underground where they cross sensitive peatlands and tussock grasslands. In the past three years the power lines have directly caused two fires, so this agreement is significant for protection of the wetland.

### Sharing Our Wetland

Increasing awareness and appreciation of our wetlands is one of our key objectives. Local schools, community groups and business got involved in two wetland events for Conservation Week and World Wetlands Day, and our giant kōkopu survey was featured in an episode of Country Calendar!



Two bittern in fire affected area (2009). Photo: DOC images



Giant kōkopu caught during survey. Photo: DOC images



Catching eels as part of conservation week. Photo: DOC images

## Whangamarino

*The Whangamarino team have been focused on flora, with extensive vegetation monitoring, restoration plantings and management of a nationally significant species.*

### Corybas carsei Recovery

This year a total of 386 individual plants were detected, including 34 in flower - the highest number of plants found since monitoring began. Fire stimulates orchid reproduction, so controlled burning is about to kick off.



Grid searching for *Corybas carsei*. Photo: DOC images

There is now a [Corybas report card](#) - find out more about this nationally critical species

### Mapping Vegetation Changes

2019 was the fourth time aerial photography was used to monitor vegetation. This five-yearly survey is used to track changes in sensitive habitats, such as peatlands (raised bog), and shows that manuka is invading some wirerush areas due to disturbance.

### Grazing Retirement and Wetland Forest Restoration

Grazing licenses are being regularly reviewed at Whangamarino. Two previously grazed areas are being restored with over 8200 plants helping to re-establish wetland forest and protect the wetland from nutrient and sediment runoff. The Kopuku block (an ex-lease) is one of Whangamarino's ongoing success stories, with native vegetation beginning to regenerate on its own. This year, for the first time, bittern and dabchick were spotted amongst previous years' plantings.



Flowering *Corybas carsei*. Photo: George Novak ©



Restoration in progress on a previous grazing lease. Photo: DOC images

## Ō Tū Wharekai

*The team at Ō Tū Wharekai have continued broad-scale control of invasive species and have had a hand from some budding conservationists along the way.*

### Building Conservationists

As part of our efforts to maximise partnerships and participation, we fostered a team from Ara Institute. These budding conservationists learnt about the work of Arawai Kākāriki and got hands-on experience with predator trapping, bird surveys and native vegetation restoration.

### Scree Skinks

The large but elusive scree skink has now been monitored for 11 years, revealing that the population is highly vulnerable to flooding - it took ~8.5 years for the population to recover from a major flood in 2009.

Along with a recent [publication](#) we also have a [report card](#) summarising the findings of this long-term study.



Scree skink. Photo: Marieke

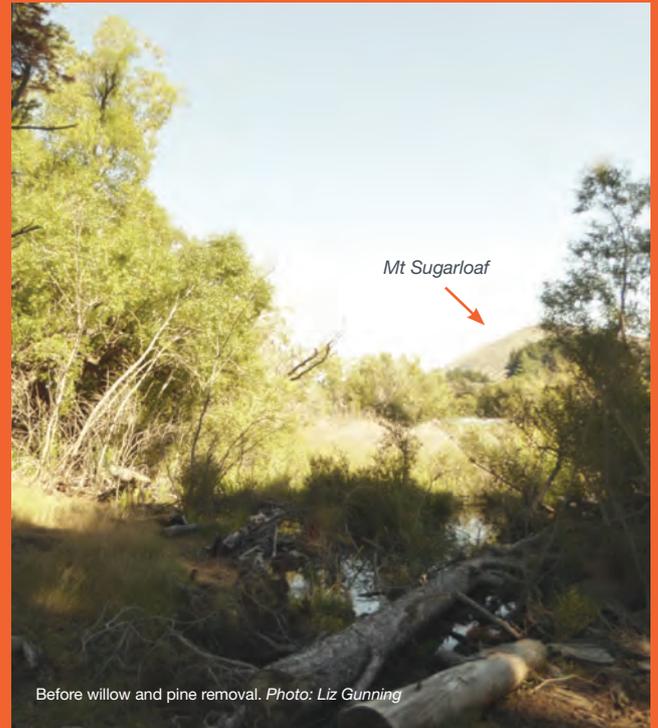
### Species update:

**Threatened plants:** Two new sites have been identified with suitable habitat for the critically endangered *Craspedia heron*. Translocations are to start this coming year.

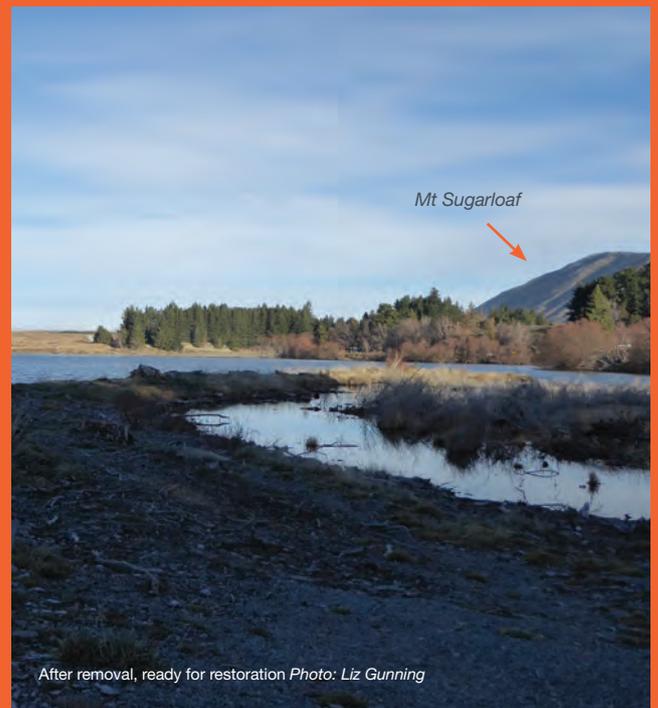
**Rare birds:** Kakī have been found nesting in the Upper Rangitata River for the second year in a row!

### Weed Control Success

Control of invasive plants is a high-effort, high-return project helping to protect the unique ecosystems within the Ashburton Basin and Upper Rangitata. This year the search and destroy weed control team covered 16874 ha. Removal of willows and pines was completed at Lake Heron, and this will become a native vegetation restoration site.



Before willow and pine removal. Photo: Liz Gunning



After removal, ready for restoration Photo: Liz Gunning

## Investing in science

### Research on Lake Health

The Ashburton Lakes are sensitive to changes in catchment land use. We presented long-term data that showed the decline of lake health to the local zone committee, leading to a call to action to address nutrient inputs.

The science team is also working in partnership with the Cawthron Institute at Lake Moawhitu to identify options to improve water quality and lake biodiversity.



Water quality sampling in Lake Moawhitu. Photo: DOC Images

### Restoring Wetland Hydrology

Our national research programme aims to understand the impact of drains and support hydrological restoration.

See the diagram below of our progress at Moawhitu, Awarua-Waituna and Kaimaumau-Motutangi.



Drain blocking at Moawhitu. Photo: DOC Images

Site	Hydrological monitoring – confirm drains lowering water levels	Ecological assessment – confirm negative impact on wetland vegetation	Mitigation options investigated	Hydrological restoration initiated	Post restoration water level and vegetation monitoring
Moawhitu	✓	✓	✓	✓	2020
Awarua-Waituna	✓	✓	✓	2019	
Kaimaumau	✓	✓	2020		

### Cultural Assessment for Tuna Recovery

A cultural assessment has been completed with Ngāti Koata to determine pathways for the recovery of tuna (eel) at Moawhitu. Recommendations included establishing a customary harvest model, supporting juvenile tuna recruitment and promoting lake and wetland restoration.

# New Publications:

De Winton (2019) Vegetation status in Waituna Lagoon.

Boffa Miskell Ltd (2018) Kaimaumau-Motutangi Wetland Mapping: Methods, Wetland and Vegetation Descriptions and Constraints.

Williams et al. (2019) Modelling variation in calling rates to develop a reliable monitoring method for the Australasian Bittern *Botaurus poiciloptilus*. *Ibis* 161: 260-271

Wech et al (2018) The effect of willow control using a glyphosate formulation on aquatic invertebrates within a New Zealand wetland. *NZ Journal of Marine & Freshwater Research* 52: 16-41

Report Cards - *Corybas carsei* (Whangamarino), phosphorus (Whangamarino), scree skink (O Tu Wharekai)



## On the horizon

- » New web pages to reflect our evolution since the programme began in 2007.
- » Upcoming report cards: - Braided river birds in O Tu Wharekai; maintaining water levels in Whangamarino; wetland restoration at Moawhitu; and lake water quality at O Tu Wharekai
- » Special Arawai Kākāriki session on “Advances in wetland restoration in New Zealand” at the International Wetland Conference in Christchurch in 2020.

