

SANCTUARY MOUNTAIN MAUNGATAUTARI
RESTORATION PLAN SUMMARY 2019-2029

Sanctuary
Mountain[®]
MAUNGATAUTARI

Based on Sanctuary Mountain Maungatautari Restoration Plan 2019-2029 (Innes & Watts, 2019)

Our Vision

Share the mauri and the mana of the maunga

Our Purpose

Protect and enhance the mauri of Maungatautari

*Tukua mai kia piri Tukua mai kia tata Tukua mai ki a
Ranginui, ki a Papatuanuku ki Maungatautari
hei korowai hei whakaruruhau ki nga uri a
Tane Mahuta Tuturu ka whakamaua kia tina.
Tina, haumi e, hui e, taiki e!*

Let us come together, let us draw near, let us come
closer to Father Sky and Mother Earth.
To our mountain, Maungatautari, to provide a
korowai, to protect these children of Tane Mahuta.
We are committed to this purpose.
It will be done!

Acronym	Meaning
DOC	Department of Conservation. The national government agency that administers the Conservation, Reserves and National Parks Acts.
MEIT	Maungatautari Ecological Island Trust. The private, non-profit making registered Charitable Trust established in 2001 to restore and sustain Maungatautari mountain.
MWLR	Manaaki Whenua – Landcare Research. Crown Research Institute (like NIWA) that addresses terrestrial ecosystems and biodiversity, greenhouse gases and sustainable environments.
NIWA	National Institute of Water and Atmospheric Research. Crown Research Institute (like MWLR) that addresses aquatic resources and environments, plus weather and climate.
NKK	Ngati Koroki Kahukura. One of three iwi entities (including Ngati Haua, Raukawa) that together have mana whenua at Maungatautari.
SMM	Sanctuary Mountain Maungatautari. The project being undertaken by MEIT and others to restore Maungatautari mountain.
WDC	Waipa District Council. Local territorial authority based in Te Awamutu; administers the Maungatautari Scenic Reserve Management Plan.
WRC	Waikato Regional Council. Regional territorial authority of which WDC is part.



Introduction



“ Sanctuary Mountain® Maungatautari (SMM) is nationally and internationally significant – extraordinarily ambitious and valuable – by its sheer size (3,239 ha), and its largely intact, old-growth native forest.

The mammal-free (except for mice) estate at Maungatautari is more than twice the area of all other New Zealand ring-fenced sanctuaries combined (MWLR, unpubl. data, 2019). ”

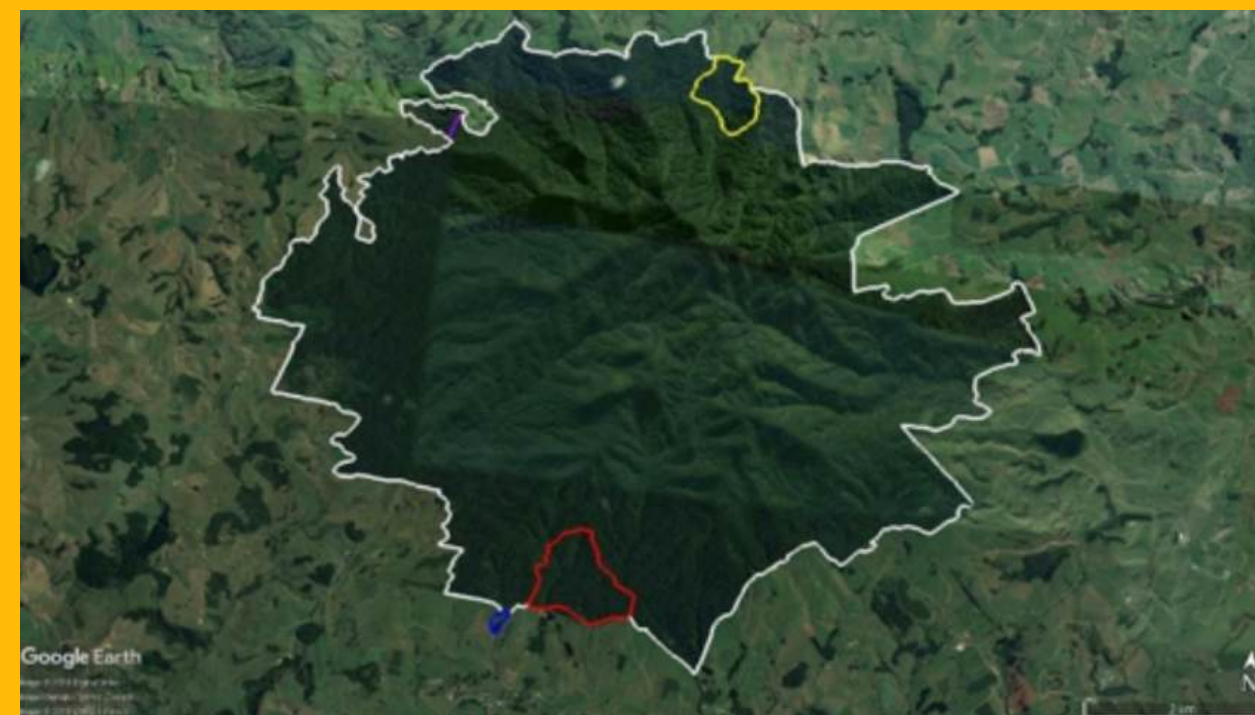
Maungatautari is a native forest-covered andesitic volcanic cone (797m asl) surrounded by farmland in the Waikato. It has seen at least seven centuries of sustained occupation, first by Ngati Kahupungapunga and then by various tribes descended from the Tainui waka. Ngati Koroki Kahukura (NKK), along with Ngati Haua and Raukawa ki Wharepungunga, currently maintain mana whenua there. The Ngati Koroki Kahukura Treaty Claim 2012, secured NKK the co-governance of the Scenic Reserve with Waipa District Council.

Maungatautari Maunga is a sacred

source of spiritual pride and prestige for Waikato Maori. The dignity and mana of Maungatautari is a legacy that ensures linkage between Waikato's past, present and future generations. He (the Maunga) is revered by all for his significance to the tribal roots and rich diversities that confirm eternal bonds between Waikato and other iwi within Aotearoa. (Waipa District Council 2005).

In 1927 much of the maunga became a Scenic Reserve (Waipa District Council 2005). In 2001 Maungatautari Ecological Island Trust (MEIT) was

formed 'to restore and protect the unique ecosystems on Maungatautari'. The co-governance by community, landowners, and mana whenua puts the Treaty of Waitangi into practice. Funds were found to fence and eradicate mammals from the entire maunga in 2006 (Campbell-Hunt and Campbell-Hunt 2013). In 2015 the operating entity Sanctuary Mountain® Maungatautari (SMM) was formed, run by the legal entity MEIT. From here on, SMM will be used to describe the project and MEIT will be used for the governance.



Sanctuary Mountain® Maungatautari. The white line indicates the predator-proof fence, the red line indicates the southern enclosure (36 ha), the yellow line indicates the northern enclosure (36 ha), the blue line (bottom) indicates the Tautari Wetland (2.2 ha) and the purple line (top left) indicates the QEII block (15.5 ha) owned by the Garlands.

CURRENT STATE OF ECOSYSTEM RECOVERY

The International Principles and Standards for Ecological Restoration establish eight principles that underpin ecological restoration... provide recommended performance measures for restorative activities... and provide tools that are intended to improve outcomes, promote best practices, and deliver net global environmental and social benefits. (Gann et al. 2019, pg. 11-12), thus contributing to the United Nations Sustainable Development Goals. Restoration is seen as a continuum with the five-star recovery goal meaning an outcome that is as close as possible to an undisturbed reference ecosystem with minimal further intervention required (Gann et al. 2019).

CURRENT SPECIES

Thirty-five bird species have been observed at Maungatautari between 2002-2017; 23 native/endemic and 12 introduced. Nine native bird species have already been translocated back to the maunga (see table below). Six species of lizards have so far been discovered at Maungatautari with several others considered likely to be present. Long-tailed bats are present, but not short-tailed bats. One frog species (Hochstetter's) has been monitored since being discovered at the maunga in 2004. 300 invertebrate species have been recorded at SMM, including the aquatic koura and the recently translocated

Mahoenui Giant Weta. Two native fish species were recorded prior to introduction of the kokopu so that makes four fish species total. A total of 257 indigenous vascular plants have been recorded on Maungatautari (Clarkson 1979-2002; Kirby 2018). Fifteen plant species found on Maungatautari are currently listed as threatened (de Lange et al. 2017). We do not currently know of lists of non-vascular plant species (e.g. bryophytes, algae, lichens) that occur on Maungatautari. At least twenty-eight species of fungi have been recorded as at 2019.

TRANSLOCATED SPECIES

Year	Species	NZ Threat Classification
2005-Present	North Island brown kiwi (<i>Apteryx mantelli</i>) western taxon	At Risk - Declining
2006-2017	South Island takahe (<i>Porphyrio hochstetteri</i>)	Threatened - Nationally Vulnerable
2007-2014	North Island kaka (<i>Nestor meridionalis septentrionalis</i>)	At Risk - Recovering
2009	Whitehead popokatea (<i>Mohoua albigilla</i>)	At Risk - Declining
2009-2011	Stitchbird/hihi (<i>Notiomystis cincta</i>)	Threatened - Nationally Vulnerable
2010-2011	Yellow-crowned parakeet/kakariki (<i>Cyanoramphus auriceps</i>)	Not threatened
2011-2012	North Island Robin/pitoitoi (<i>Petroica longipes</i>)	At Risk - Declining
2013	North Island saddleback/tieke (<i>Philesturnus rufusater</i>)	At Risk - Recovering
2015-2016	North Island kokako (<i>Callaeas wilsoni</i>)	At Risk - Recovering
2007	Giant kokopu (<i>Galaxias argenteus</i>)	At Risk - Declining
2007	Banded kokopu (<i>Galaxias fasciatus</i>)	At Risk - Declining
2012	Tuatara	At Risk - Relict
2012	Mahoenui giant weta	At Risk - Recovering

Translocations of nine bird species, tuatara, two fish and one insect to SMM between 2005 and 2018 (compiled by J Ward, SMM, February 2019 and Kate Richardson, WRC)



Evaluation (by Corinne Watts and John Innes, Manaaki Whenua – Landcare Research in 2018) of recovery level at Sanctuary Mountain Maungatautari using MacDonald et al. (2016) International Standards for the Practice of Ecological Restoration.

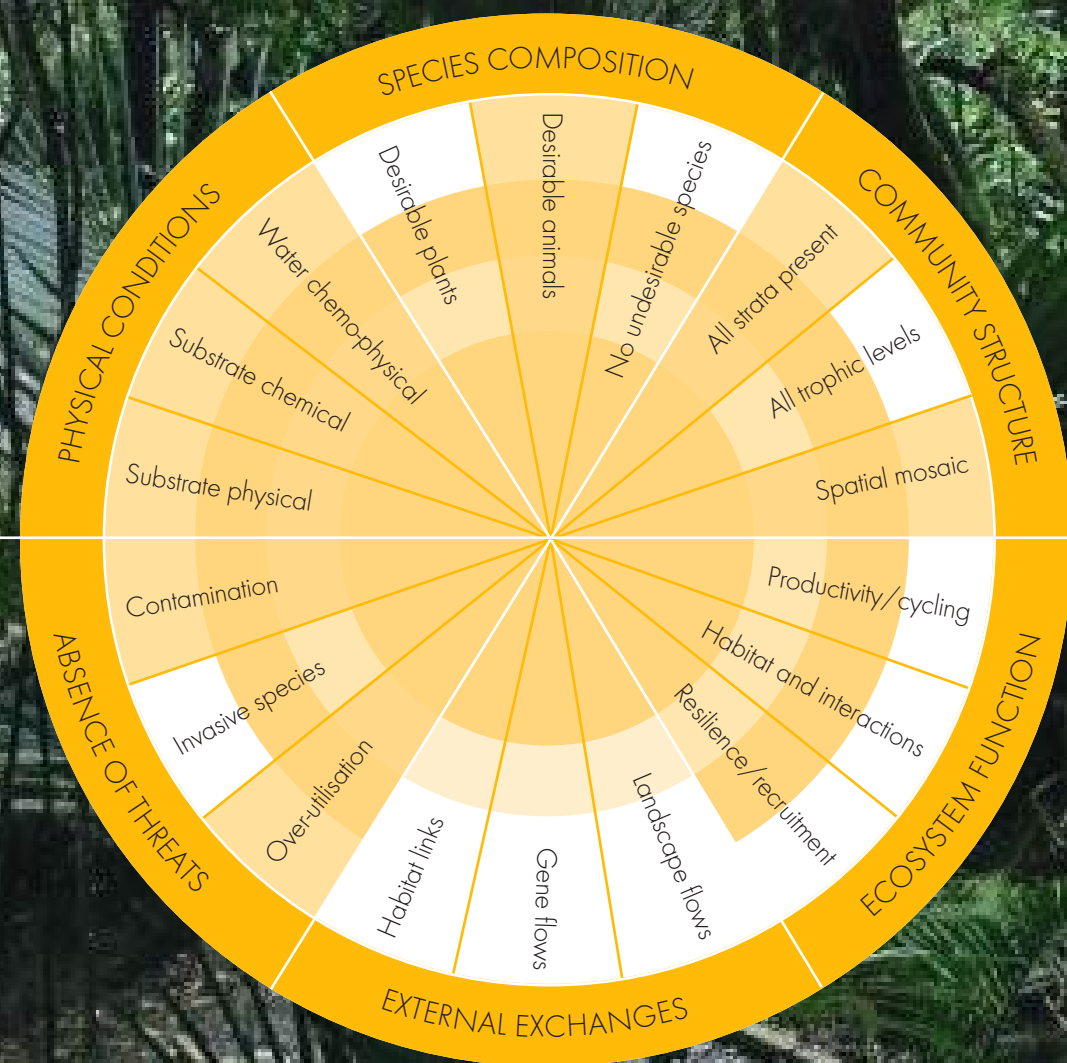
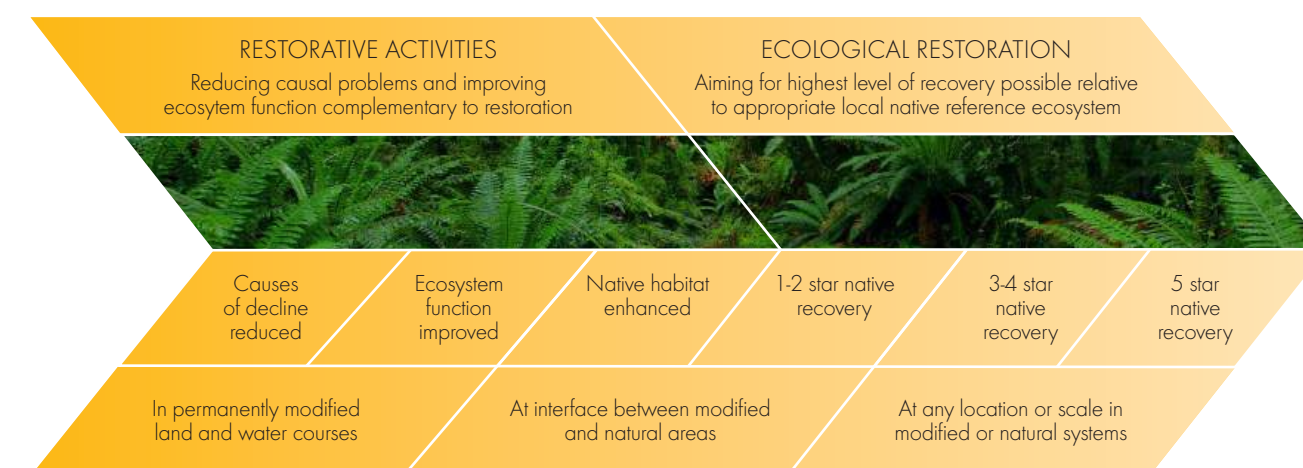


Figure 2.

The restorative continuum. A broad range of activities undertaken by society to repair damage, complement ecological restoration and provide improved conditions for broad scale recovery (MacDonald et al. 2016).

RESTORATIVE CONTINUUM



INCREASING SIMILARITY TO LOCAL NATIVE REFERENCE ECOSYSTEM

Utilising these standards, the recovery wheel (left) was evaluated for SMM in 2019. The wheel illustrates that eight of 18 ecological attributes already have a five-star rating, showing that by international standards Maungatautari is progressing well towards full restoration. The lowest scoring attributes are within the category 'External Exchanges', for example gene flow, which is related to the fence providing a barrier to poor-dispersing taxa. However, the guidelines are too broad to clarify details of best next restoration steps, such as which species should be considered for future translocation. This detail is contained within the SMM Restoration Plan goals and actions that follow, providing clear priorities for the next ten years of this ambitious five-star restoration project.

Restoration

RESTORATION GOALS

The long-term goals of the SMM project

- Increase indigenous dominance and species occupancy on Maungatautari by the sustained removal of introduced species and by translocations, so that the original and natural character of ecosystems is as far as possible restored; and
- Increase the number of people who treasure the SMM project and are involved with its operation.

PLAN PERIOD GOALS (2019-2029)

Indigenous species

- Protect indigenous species that have a natural range that includes Maungatautari, particularly threatened species, local species (those found or protected nowhere else), and species at the limits of their current distribution.
- Translocate ecologically and biogeographically appropriate indigenous species into the reserve.
- By the above, maintain or reinstate evolutionary processes.
- Use the pest-free sites at Maungatautari to protect other threatened taxa that were not or may not have been naturally present there, if stakeholders agree.

Ecosystems

- Maintain and restore ecosystem composition, structure, and successional processes by as far as possible removing threats, and by increasing indigenous dominance and species occupancy.

Pests

- Eliminate or mitigate where possible the risks of pests and diseases impacting on the Maungatautari ecological island operation' (Maungatautari Ecological Island Biosecurity Plan; SMM 2015).

Mana whenua

- Enable mana whenua to sustain or enhance kaitiakitanga (guardianship), whakawhanaungatanga (relationships) and wairuatanga (spiritual connection) on the maunga.

- Improve the possibilities for mana whenua to hand down taonga species to future generations and to gift taonga species to recipient iwi by translocation.
- Sustain or enhance the ability of mana whenua to harvest kai, rongoa, and other valued resources.

Other individual stakeholders

- Enable adjacent landowners, volunteers, and other interested public to appreciate the natural history of the maunga, to participate in its restoration, and to obtain the mental and spiritual wellbeing of these participations, as they desire.

Agencies

- Assist key agencies such as Waikato Regional Council, Waipa District Council, and DOC by punctually fulfilling legal and permit obligations, by participating in regional biodiversity planning, and by openly communicating about matters of common interest.

Tourism

- Ensure that any Tourism Plan prepared by SMM realises tourist growth and development opportunities in such a way as to safeguard key natural values of the maunga (as described in Bamford and van der Scheer 2016).

Major tenets of this plan are that humans are part of the nature of Maungatautari, not separate from it; that shared grounds and passion for conservation between the diverse stakeholder individuals and agencies make a single guiding restoration plan possible; and that restoration is an endless journey rather than a destination. Also, the project operates at multiple scales and sites that include the small fenced areas within and outside the main reserve, the main reserve itself, and the surrounding pastoral and urban landscapes. It also provides local, regional, national, and international inspiration and learning from having the largest pest-free area on the New Zealand mainland.

Restoration key actions

RESTORATION KEY ACTIONS (2019–2029)

Maintain the pest-proof fence, and detect and remove invader pests

Continue the vital work of ensuring the pest-proof status at Sanctuary Mountain Maungatautari. Maungatautari has a world class detection and eradication process already in place to prevent the reinvasion of mammalian pests. Whilst eradication of mice is currently not feasible for the whole maunga, priority is to be given to monitoring and minimising mice impacts.

Monitor biodiversity to track progress to restoration

SMM will prepare a biodiversity monitoring plan with input from technical advisors. Current long-term monitoring such as vegetation plots, frog surveys and five-minute bird counts will continue, with efforts to maintain and improve data curation, inter-agency communication and agreements. All translocated taxa will be monitored for abundance and wellbeing, whilst new long-term surveys will be initiated to track the presence and abundance of selected taxa (e.g. lizards).

Value the special smaller enclosures

SMM should maintain the mouse-free status of all these enclosures so that they are available for mouse-sensitive taxa such as invertebrates and lizards, and for research projects in which being entirely pest-mammal free is important.

Measure the path to restoration

The number and locations of pest mammals detected and trapped inside the pest-proof fence will be monitored long-term, as will the areas and species of pest and adventive plants. The proportion of self-sustaining populations of forest species shall be monitored, relative to a fully occupied system, including those animals and plants translocated to the maunga.



Survey to see which species are present

Primary and targeted surveys will be undertaken for plants, lichens and fungi. Searching for threatened taxa that were likely to be historically present (e.g. Archey's frogs, striped skinks) will help to improve knowledge gaps and determine if translocation is needed. This includes follow up surveys for species not previously detected at the maunga despite searching, such as short-tailed bats and *Dactylanthus taylorii*.

Translocate threatened, iconic, missing animal and plant species

Restoration of the ecological integrity of the maunga will continue with translocations of taxa that would have originally been present on Maungatautari, including species of birds, e.g. kakapo, North Island rifleman (*titipounamu*), kakariki, plants, e.g. *Dactylanthus*, insects, e.g. stag beetle and potentially, frogs, e.g. Archey's frogs, fish, e.g. kokopu and others. Population reinforcement 'top-up' translocations will be undertaken as required to ensure healthy genetic diversity.

Control unwanted weeds, and establish desired native plants

Control and surveillance of weeds and diseases will be undertaken according to the SMM Biosecurity Plan. Native plants will be established by planting at sites where natural colonisation is unlikely to occur in a reasonable timeframe.

Connect the maunga to the surrounding landscape

Participate in regional biodiversity planning processes with Waikato Regional Council and Waipa District Council to establish biodiversity linkages, including 'stepping stone' patches, to other native habitats, create new wetlands, remove any barriers to fish passage, and monitor outcomes.

Monitor and plan for social/cultural outcomes

Visitor, volunteer and student numbers will be monitored annually to enable valid comparisons. All tourism related activities and growth will continue to safeguard the natural values of the maunga. This includes punctually fulfilling all legal and permit obligations, participating in regional biodiversity planning and engaging with tangata whenua to determine whether current levels of monitoring are adequate.

Encourage kaitiakitanga, whakawhanungatanga and wairuatanga of mana whenua

Engage with mana whenua regarding their use of Maungatautari species for whakairo (carving), raranga (weaving), rongoa (medicinal) and kai (food).

Encourage uptake of unique research opportunities

Encourage and actively support universities, Crown Research Institutes, and other research providers to undertake, publish and communicate research about the maunga, its natural and human history, and about outcomes of the SMM project.

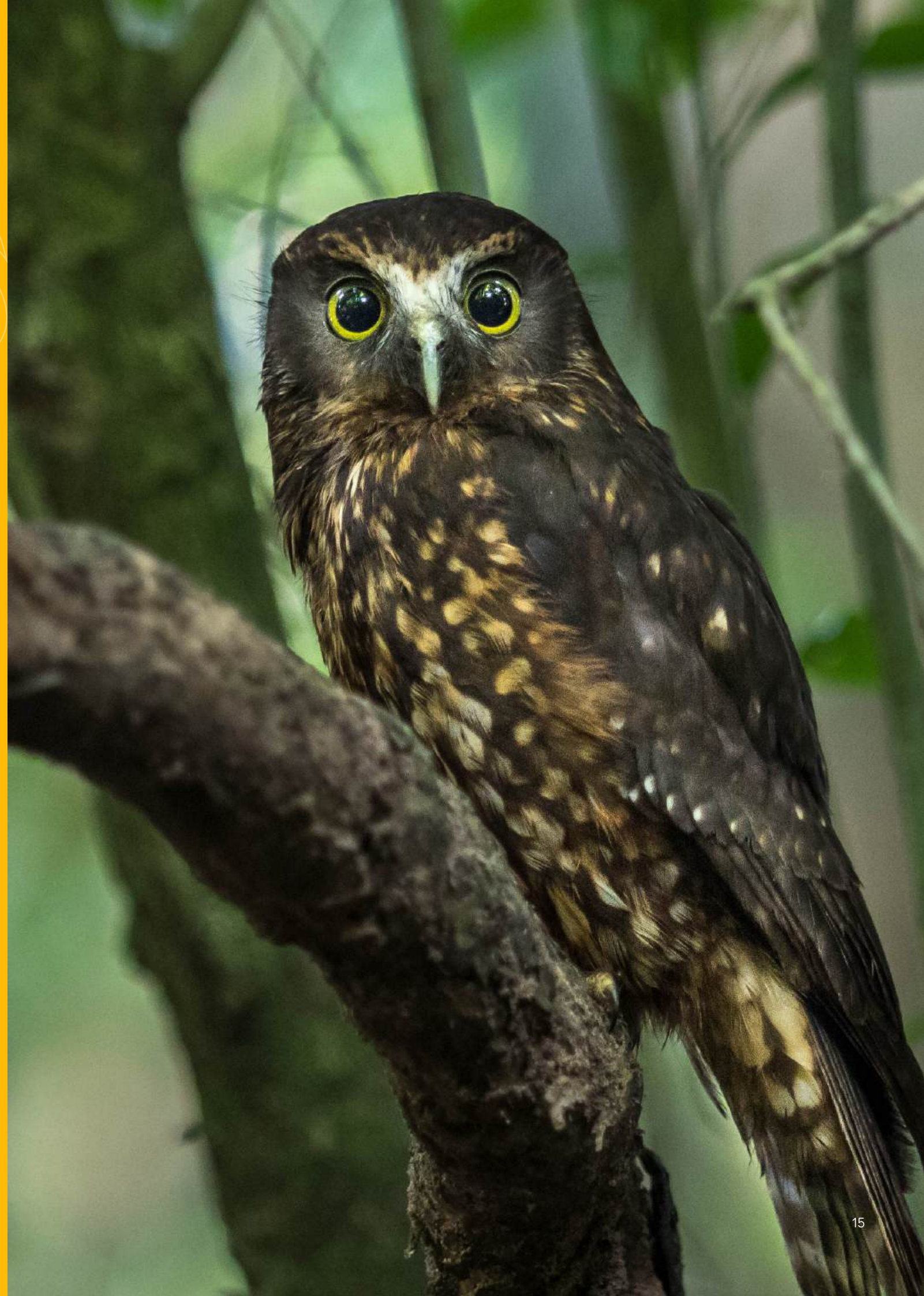
Network about climate change

SMM should maintain strong science networking about climate change to keep up to date on best adaptive practice, and to consider opportunities to contribute to national research and management agendas.

Support, promote and expand education

Continue to grow the SMM education programme through outreach and place based education to: increasingly influence our tamariki/children to be aware of their kaitiaki role in conservation and restoration; and establish a system where researchers are provided with an opportunity to study our natural taonga and share the knowledge gained beyond the scientific community.

References: For the full reference list please refer to the original Restoration Plan.



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