Species management plan for takahē 2021-2025

DOC's strategic context – the Aotearoa New Zealand Biodiversity Strategy 2020 – Outcome 2: 'Indigenous species and their habitats across Aotearoa New Zealand and beyond are thriving'.

› The mana of taonga species is restored.
› All indigenous species are protected and secure, and none are at risk of extinction due to human activities.
› Species' populations are healthy, genetically diverse and have increased resilience to future threats including climate change.

Vision:

Within 500 years, takahē are restored to large areas of their former natural range as a functioning part of the ecosystem and are relevant to our cultures.

Guiding principles

Animal welfare: The welfare of the birds will be a primary consideration in all aspects of takahē management.

Knowledge and expertise: Knowledge and ideas will be pursued that will strengthen and enhance the takahē population and all those involved with their management.

Relationships: Share decision making with Ngāi Tahu to ensure mātauranga Māori is incorporated into the Takahē Recovery Strategy and its implementation. The new and existing relationships between DOC, organisations, communities, and the public will continue to be respected and nurtured as we work together in takahē management for present and future generations.

Leadership: A high degree of personal and organisational integrity, professionalism, and ethical behaviour will be maintained in takahē management.

THEME 1: Research — 30% of time and 45% of budget

Outcome: An increase in takahē security is supported by using up-to-date techniques, research, and scientific evidence.

Objectives	Actions	Lead & Accountable	Resources required	Deadline
1. Effective landscape-scale pest animal (especially stoat) monitoring tools are used at takahē locations.	**1.1** Monitor updates and innovations in landscape-scale pest monitoring methodology and collaborate with others to ensure a shared understanding of the potential impacts these tools may have on takahē populations and their management.	Takahē Recovery Programme (TRP)	DOC Terrestrial Biodiversity Team support.	Ongoing
2. Field data quantifies the relationship between pest animal* densities and takahē population response. *Particularly cat, stoat, ferret, and deer.	**2.1** Investigate and/or monitor pest animal abundance at takahē locations. Dependent/relates to Action 1.1, yet developments can progressively feed into decision making.	TRP and local land managers (DOC, Council, community groups)	DOC Terrestrial Biodiversity Team support.	Ongoing
	2.2 Monitor takahē population dynamics at Recovery Sites where pest animal abundance is known.	TRP	Support from local DOC District Operations	Ongoing
	2.3 Undertake density impact function analyses to quantify effect of pest densities on takahē mortality and utilise to build targeted pest density thresholds.	TRP		Ongoing
3. Takahē population dynamics* are understood and guide management actions. *Population dynamics = size and structure of a population and the	**3.1** Maintain a sample of radio-tagged takahē at each Recovery Site to monitor survival (via aerial methods), and, wherever possible, determine cause of death. An appropriate sample size and regime will be determined for each location, dependent on management needs.	TRP	Support from local DOC District Operations	Ongoing
	3.2 Maintain a sample of radio-tagged adult takahē at new or recently established Recovery Sites to monitor productivity rates. An appropriate sample size and regime will be	TRP	Support from local DOC District Operations	Ongoing

Objectives	Actions	Lead & Accountable	Resources required	Deadline
factors affecting their decline, maintenance or increase.	determined for each location, dependent on management needs.			
	3.3 Develop models to predict population trends and assess alternative management actions.	TRP	Contractor/university support	Review 5-yearly (due 2025)
	3.4 Regularly critique innovations and new technology in monitoring methods for suitability of deployment within takahē populations.	TRP	Support from DOC Terrestrial Biodiversity Team	Ongoing
	3.5 Use mixed-effects models to assess environmental, predator and management factors that affect takahē recruitment and survival.	TRP	Contractor/university support	2025 Murchison Mountains (repeat) and Greenstone
	3.6 Regularly update mixed-effects models with new environmental and population data and feed results into repeatable demographic models	TRP	Contractor/university support	Review 5-yearly (due 2025)
4. Landscape-scale management tools for pest animal control are safe for takahē.	**4.1** Advocate for takahē to be considered during the development of landscape-scale pest management tools	TRP	DOC Terrestrial Biodiversity Team support.	Ongoing
	4.2 Test susceptibility of takahē to new toxins and their application methods for stoat, rodent, cat, and ferret control.	TRP	DOC Terrestrial Biodiversity Team support.	Ongoing (PAPP by 2025)

Objectives	Actions	Lead & Accountable	Resources required	Deadline
	4.3. Test available mitigation methods used in aerial toxin applications (e.g., repellents, palatability, exclusion zones).	TRP	Local DOC District support	Ongoing
	4.4 Estimate risk/benefit to takahē for toxins considered for application to takahē habitat to determine if there will be a net gain to the takahē population size.	TRP	DOC Terrestrial Biodiversity Team support.	Ongoing as applicable
5. Environmental factors that impact Individual population performance are understood and this knowledge helps define site suitability and determine management methods.	**5.1.** Identify and monitor environmental factors which drive individual population performance, e.g., habitat, climate, native predator impacts, interspecific competition.	TRP	Support from local site staff	Ongoing
	5.2 Develop management methods to improve recruitment and survival rates at locations where environmental factors (such as in Action 5.1) pose a risk to takahē populations.	TRP		Ongoing
	5.3 Use the information derived from 5.1 and 5.2 to classify and rank suitable habitat areas for takahē across New Zealand, including existing sites.	TRP	University Post-Graduate researcher support	Ongoing, particularly as new sites are assessed

THEME 2: Conservation management for population, productivity and genetic health. 60% of time and 50% of budget

Outcomes: *At Sanctuary Sites, the takahē population is at a minimum of 65 breeding-aged pairs.*

At Recovery Sites, a minimum of two populations are managed to maximise genetic and demographic performance, targeting 80% of the estimated site carrying capacity.

Objectives	Actions	Lead & Accountable	Resources required	Deadline

6. At Sanctuary Sites: Manage the meta-population to optimise productivity and genetic health.	**6.1** Manipulate Burwood Takahē Centre pairings to produce a minimum of 20 takahē per year.	TRP		Annually
	6.2 Maximise genetic diversity and minimise inbreeding at metapopulation level, utilising modelling-informed pair management and transfers as the primary tools	TRP	Local site staff support	Annually
	6.3 Complete annual forecasts and report on genetic targets and population growth targets.	TRP		Annually
	6.4 Regularly review progress against genetic and population security targets, utilising best practice.	TRP	External contractors, e.g., CPSG (Conservation Population Specialist Group).	Five-yearly, due 2025
	6.5 Specify site-specific contributions to takahē recovery goals and outline these contributions in the site management plans that are reported on annually, to allow for location re-classification, including disestablishment.	TRP		Annually
	6.6 Regularly update best practice for takahē management in site management plans and in the takahē husbandry manual.	TRP		Ongoing review and update, but review due 2024
	6.7 Ensure site managers have adequate understanding of the ecology, habitat (including pest management) and breeding requirements of takahē, through regular operating reviews* and the provision of the relevant documents discussed in 6.6. *Three per year at pre- and post-breeding, and at pre-translocation.	TRP	Takahē Site managers	Ongoing thirdly reviews

7. Sanctuary Sites combined have ongoing sufficient capacity to hold the total required pair number determined by latest population modelling.	**7.1** Develop a timeline that identifies targets for maintaining capacity.	TRP		Five-yearly review, due 2025
	7.2 Increase the capacity of Retirement Sites as required, to support optimal bird management at Sanctuary Sites.	TRP		Five-yearly review, due 2025
8. At Recovery Sites: Takahē populations persist in primarily indigenous ecosystems, via cost-effective management.	**8.1** Work proactively with Ngāi Tahu and owners/managers of potential new locations to identify suitable and sufficient large South Island sites for takahē, with capacity to hold at least 30 pairs each, and a combined 100 pairs across Recovery sites.	TRP	Local DOC district operations team.	As required by population growth. Due 2023
	8.2 Establish initial populations with a minimum of 25 birds at new Recovery Sites (in 8.1).	TRP	Local DOC district operations team	As required by population growth. Due 2023
	8.3 Support appropriate levels of pest ungulate control in the Recovery Sites to optimise vegetation condition and monitor the outcome of control on important takahē resources.	DOC Tier 1 BMT and District biodiversity teams.	Local Deer Stalkers Assoc and other recreational hunting organisations	Ongoing
	8.5 Apply sufficient levels of suppression to achieve thresholds set in 2.3.	Land managers	TRP	Ongoing
	8.6 Supplement takahē populations at Recovery Sites with new birds as required, to enable an adequate test of habitat suitability and to ensure populations persist.	TRP		As required.

THEME 3: Partnership and advocacy — 10% of time and 5% of budget

Outcomes: *The value of takahē as a taonga and conservation icon is widely known and understood.*
Strong relationships and partnerships benefit takahē management.

Objectives	Actions	Lead & Accountable	Resources required	Deadline
9. Ngāi Tahu is recognised and functions effectively as the primary partner in the Takahē Recovery Programme.	**9.1** High level strategic and operational decision making is collaborative through Kaitiaki rōpū committee and Taonga species representative; identifying opportunities for ensuring principles of mātauranga Māori are embedded.	TRP	Further the opportunity for developing a wider understanding of what mātauranga Māori practices means in the context of takahē recovery.	Ongoing
	9.2 Ensure other parties understand the primary partnership between the Department and Ngāi Tahu; and that other partnerships are compatible with this relationship.	TRP	DOC Commercial Partnerships Team, Digital brand and marketing Team, Media support	Ongoing
	9.3 Working with tangata whenua, provide a range of opportunities to cultivate their involvement, education, research objectives, governance in takahē recovery – such as cadetships, student programmes.	TRP		Ongoing. Maximise opportunity given by Greenstone Valley
10. Takahē at all sites are managed and cared for in line with this species management plan.	**10.1** Ensure all takahē populations have an approved task assignment (DOC sites), or Memorandum of Understanding and Wildlife Permit (external sites) before takahē are released. Monitor adherence to these documents - as well as the Takahē Management Plans.	TRP	DOC Permissions Team and Legal Services.	Ongoing as required to maintain currency.

	10.2 Work with Iwi katoa to ensure appropriate tikanga takes place when receiving manu/kaitiakitanga from Ngāi Tahu.	TRP	Local DOC Operations Manager	Ongoing
11. Takahē management is supported by multiple relationships for science and technical capability.	**11.1** Establish and cultivate collaborations (for example, with tertiary institutions and zoos) to achieve the research and management needs of the Takahē Recovery Programme.	TRP	Members of the Takahe Recovery Group	Ongoing
	11.2 Present results of the conservation management and research programmes for takahē to the scientific community, including Papers for peer-reviewed journals.	TRP	External researchers	Ongoing
12. The takahē programme obtains appropriate financial support to achieve management objectives.	**12.1** Define the annual financial requirements of the programme to fulfil this species management plan. Where these are not met by Department funding, obtain through external means.	TRP	DOC Bio Planners and Biodiversity Functional Group	Annually
	12.2 Maintain external financial partnerships for mutual benefit, fulfilling requirements of relevant agreements.	DOC Commercial partnerships team	TRP Senior Ranger	Ongoing
13. There is a high public awareness of takahē and the Takahē Recovery Programme.	**13.1** Foster a network of location-based takahē supporters, to assist with tasks and events e.g., trapping, translocations.	TRP	Local DOC operations staff	Ongoing
	13.2 Continue to support Advocacy Sites, educational institutions, and trusts to produce high quality advocacy and educational material in a range of formats, e.g., video clips, interpretation panels, brochures.	TRP	Digital, brand and marketing team – DOC National Office.	Ongoing
	13.3 Enable a volunteer programme at the Burwood Takahē Centre. Opportunities for tasks include infrastructure maintenance/upgrade, research, use of specific skills.	TRP	DOC Regional Volunteer Coordinator.	Ongoing
	13.4 Assist in the development and maintenance of an education package for use within the New Zealand Secondary School curriculum.	TRP	Digital media and marketing team – DOC National Office.	2025

	13.5 Digital channels: Establish and maintain up-to-date content on the conservation management of takahē on the DOC website. Utilise social media to tell the takahē story.	TRP	Digital media and marketing team – DOC National Office	Ongoing
	13.6 Increase public awareness of the vital significance of tussock/grassland habitat – the need to restore and protect it and the risks for takahē survival if it is lost.	TRP	TRP Senior Ranger	Ongoing