Department of Conservation
Te Papa Atawhai

Pukunui 1080 Operational Plan
Rakiura August 2025

Version History

Version	Reason for change	Date
1.0	First draft	March 25
1.1.	Peer review comments responded to	May 25
	Final version	Ongoing updates
	Update	

Contents

Section A Project management

1. Project scope

This project includes possum, rat and feral cat control in Rakiura National Park scheduled for 2025 as part of the National Predator Control Programme (NPCP). This plan covers the details of the project's technical design and the organisation of the logistics for doing the work in the operational phases (pre-operational, operational & post-operational).

This project does not include:

- Result monitoring (covered by the NPCP monitoring team).
- ZIP Research trial blocks.
- Outcome monitoring.

This project ends when lessons and recommendations from the operational report have been followed up.

2. Summary table of key documents

Table 1 lists the key project documents being developed for this project. A more comprehensive list is available in the project 'Home page' DOC-7874715

Document	Reference	Purpose
Project home page	DOC-7874715	A quick reference collation of documents created for or relevant to this project
Operational plan. DOC	DOC-7874971	A plan to guide the planning and implementation of the project.
Task List	DOC-10214390	Detailed list of DOC tasks and delegation to team members to complete the project.
Communication plan	DOC-10219524	Plan covering the consultation and notification of stakeholders and visitors about the operation which also serves as a record of those consulted and/or notified.
Work Allocation	DOC-10217026	Detail of work to be delivered by Project management company, part of project management contract agreement.
Statement of Works (SOW)	Replaced by an Investment Agreement. DOC-7761412	The scope of the work agreed to between DOC and the Project Management company, part of project management contract agreement. Includes list of Project managers resources and application detail.
Compliance register	DOC-7876885	Register of conditions and performance standards to be met by the project;

Action Plan bait application		A collation of planning needed on bait application days

3. Objectives and targets

Outcome target

The outcome target of the operation is:

The Southern New Zealand Dotterel/Pukunui Recovery Programme aims to facilitate a population recovery to a minimum of 300 birds by 2035

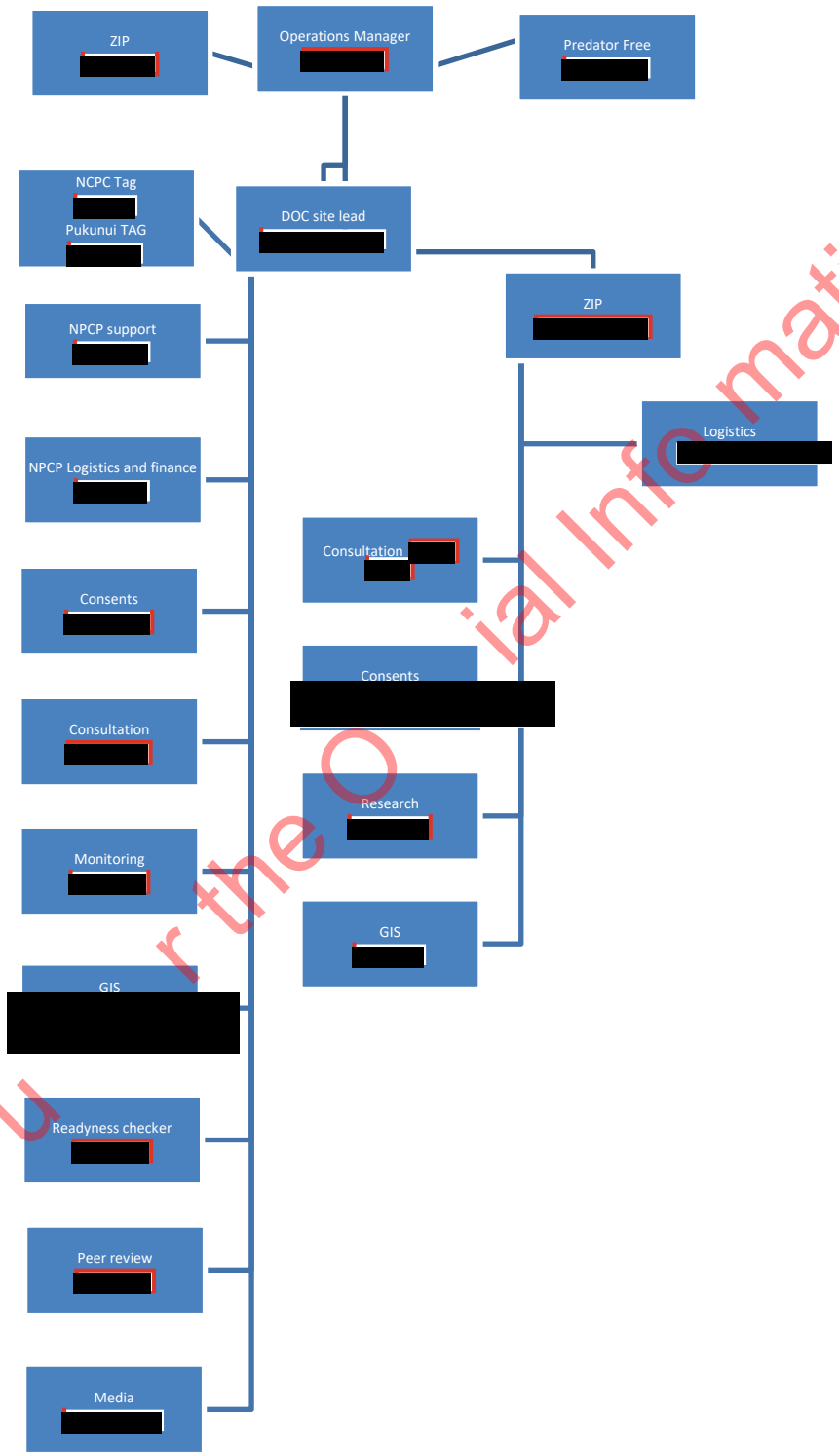
Result target

- The April 2026 Pukunui SNZD flock count is 105 or greater
- 95% kill rate for rat trap catch index for ship rats
- Possum camera detections per 1000hrs are reduced 95%
- Feral cat camera detections per 1000hrs are reduced 98%

4. Project team

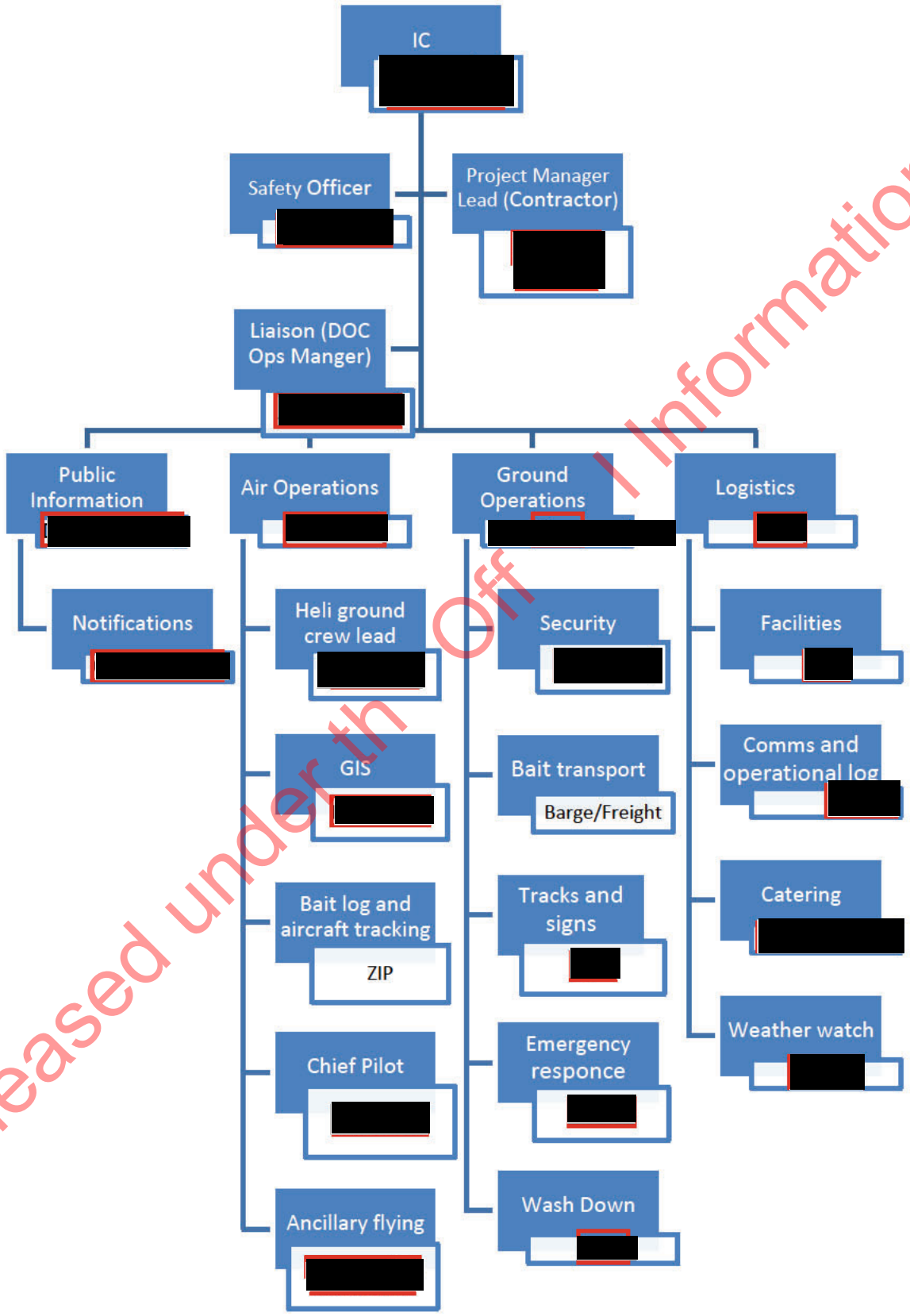
Planning/Pre-Operational phases

This planning team will be in place for all the Planning phase and through to the end of the pre-operational phase of the animal pest framework.



Pre-operational/ Operational phase

This team will form during the pre-operational phase of the Animal Pest Framework (after consents have been obtained) to allow the roles identified here to contribute to the planning of tasks and take responsibility for their implementation during the Operational phase.



Key Roles and Responsibilities

Title	Role	Responsibilities
Incident Controller	Take charge and lead the project	Ensure Task Assignment, Work Allocation & SOW is fulfilled as agreed to deliver project outcomes
Project Manager Lead	Plan and deliver the operation on behalf of DOC	Deliver all phases of the operation detailed in the SOW and Work Allocation to the standards required.
Planning Manager	Ensure project is planned to DOC SOP standards	Plans, manages and reports on operation using Operational Planning for Pest Operations SOP docdm-1488532.
Air Operations Manager	Supervise aerial baiting delivery contract	Manage aircraft loading, bait and sowing information to ensure aerial baiting is safely completed to standard.
Ground Operations Manager	Supervise implementation not covered by air operations	Manage ground-based tasks identified, specified and delegated in operational plan.
Logistics Manager	Provide logistical supplies requested.	Manage logistical tasks identified, specified and delegated in operational plan
GIS Technician	Provide mapping services to support the planning and delivery of the project	GIS mapping required during planning and implementation. Analysis and presentation of bait spread data. Support and mentoring for correct use of Pesticides App.
Peer Reviewer	To support the operational planner with independent comments and questions early in the process, when there is still flexibility for significant changes if necessary.	Provides a written independent review of the operational plan in Planning phase Step 3 before consents are obtained.
Readiness checker	To independently review all planning to assess readiness for the Operational phase.	Reviews the operational plan and associated documents in Pre-Operational phase Step 7 in order to identify non-compliance, gaps and risks. Works with the operational planner to develop a plan to remedy the priority issues before the operation goes ahead.
Regional NPCP Lead	To coordinate and support NPCP operations across Regions.	Monitor progress, mentor and support site leads. Troubleshoot and build capacity. Transfer lessons to/from other operations.

NPCP Logistics	Provide Nationally contracted services and supplies to operations.	Bait supply, aerial works contractors, bucket calibrations, National security contracts.
NPCP TAG	Support NPCP programme with technical advice.	Maintain best practice guidance. Respond to specific technical questions.
Safety Officer	Oversee safe working environment and practices.	Support, mentor and audit the delivery of safety in the workplace.
Emergency Response Lead	Plan and if necessary deliver a response to incidents arising during implementation	Provide emergency pre-plans relevant to the risks identified for this operation. Form the nucleus of a ready reaction team capable of responding to most likely incidents.
Security	Supervise security contract.	Advise, plan and deliver security to prevent or limit disruption of operation and risks to staff safety

5. Contracts

Zero Invasive Predators Ltd (ZIP) have been contracted to project manage this operation. ZIP have sub-contracted [redacted] to undertake the aerial application of bait. [redacted] to transport the bait from [redacted] and [redacted] to provide security at [redacted] ZIP have a Partnership Agreement with the Department to complete the operation. [redacted] are approved contractors on the NPCP national contractor panel.

ZIP will order the bait and have it transported [redacted]

[redacted] will transport the bait and fuel [redacted]

A contract is required for the vessel operator to be available when needed.

[redacted] require the use of a 25,000ltr fuel tank, and CAA approved portable tanks. [redacted] will secure the contract for the fuel tank and portable fuel tanks to be freighted with the bait. [redacted] require an exemption to carry fuel over and above their current permitted quantities. [redacted] have sought an exemption to its operating certificate from CAA, [redacted] will be subcontracted to provide backup aircraft support to transport fuel by air.

[redacted] is the lead for ZIP and will liaise with [redacted], Site Lead for DOC. [redacted] will supervise the contract and ensure that all standards are met. Contract details are described in the Investment Agreement DOC-7761412 and Work Allocation DOC-10217026

6. Consents required

Public Health Permission is required from Public Health South to apply the toxic bait.

DOC permission is required from Aaron Fleming SSI Regional Director. The application will be assessed by [redacted], NPCP Operations Support.

[redacted], include in DOC Permission application.

Worksafe have confirmed an LCC is not required to place the bait on a loading site as part of the loading site set up. A Resource Consent is required from Southland District Council if more than 200kg of toxic bait is stored on Rakiura. ZIP will obtain the resource consent

Provided the storage decks are temporary and less than 1.5m high no building consent is required. Engineering design and sign off has been completed to ensure the structural integrity of the decks for storage bait loads and loading crane lifting weight limit.

Aircraft noise outside of Patterson Inlet is a permitted activity, providing aircraft operation is restricted to between 0700 and 2200hrs, aircraft undertake noise limiting actions during flight, and the noise is no higher than 50db where the land meets the coastal marine area. Environment Southland Coastal Marine Plan Rule 5.3.8. Environment Southland has advised that aircraft noise within Patterson Inlet is also a permitted activity providing the aircraft do not land on the vessel.

7. Consultation

Iwi

Iwi consultation with Ngāi Tahu around Pukunui management and extinction risk has been ongoing. Pukunui have been under intensive management since 1994.

The Rakiura operations manager has led consultation on effects with Papatipu Rūnaka ki Murihiku who are made up of representatives from the four Southern Ngāi Tahu hapū;

Waihōpai Rūnaka. Murihiku Marae

Te Rūnaka o Awarua. Te Rau Aroha Marae

Te Rūnanga o Ōraka-Aparima. Takutai O Te Titi Marae

Hokonui Rūnaka. Ō Te Ika Rama Marae

Kaitiaki Rōpū ki Murihiku meet regularly with Rakiura DOC operations manager to consult and work together on projects on Rakiura. Kaitiaki Rōpū ki Murihiku have provided the following statement as a show of support for the operation, "We wholeheartedly support the upcoming aerial 1080 operation as an urgent and necessary measure to protect pukunui from the brink of extinction".

Adjoining landowners/occupiers

5 adjoining landowners have been provided with a fact sheet and consulted on the effects of the proposed operation on their properties. The discussions have been limited to identifying water supplies and mitigation strategies where required and to ensure domestic animals do not trespass on Rakiura National Park, and mitigation for downstream risks to dogs. Fact sheets and face to face meetings will be held where possible to build relationships and to clearly communicate, identify and manage risk.

The control area is confined within Rakiura National Park and Eastern Rakiura Scenic Reserve where dogs and domestic stock are not permitted.

The proposed loading site [redacted]

LINZ manage an unoccupied hydro parcel in the Rakeahua River. Permission to include the hydro reserve is required from LINZ.

Key Stakeholder Groups.

Rakiura has a small community who are highly engaged in environmental issues on the motu. Rakiura's economy is largely based on fishing and eco-tourism. White tailed deer hunting plays a role in Rakiura for mahinga kai and being one of only two locations where white tailed deer can be hunted in NZ, with accommodation providers and ferry services likely to be affected by any downturn in hunting.

Maintaining community support for the pukunui recovery program is vital to the long-term success of pukunui recovery and the ongoing longer-term predator free Rakiura initiative being led by Predator Free Rakiura.

A communication strategy DOC-769545 has been developed by an engagement and advisory group made up of DOC, PFR and community representatives to be implemented as part of ongoing consultation with the Rakiura community and other affected parties.

A communication plan DOC-10219524, has also being developed to guide communication and provide clarity on who is undertaking the consultation.

A mixture of community meetings along with face-to-face meetings will take place utilising key local DOC staff and representatives from ZIP supported by NPCP SSI regional lead, [redacted]

Ben Reddiex will undertake the consultation with the national office of the New Zealand Deer Stalkers Association and the Game Animal Council due to the national significance of the Rakiura white tailed deer herd.

[redacted] from ZIP will lead consultation on effects with Fishery and MPI Officials.

Key messages are;

- Pukunui are a critically endangered population on the brink of extinction.
- Only 105 Pukunui are left in the world with an estimated maximum 39 breeding pairs possible.
- Feral cats are the main predator, they eat eggs, chicks and adults trying to defend nests.
- We urgently need to increase the area of feral cat control.
- DOC believes that aerial 1080 is the most effective means of controlling cats and reducing predation pressure at landscape scale.
- Pukunui are threatened by predators during their vulnerable breeding period between August and January each year.
- Conservation efforts have been underway since 1994 and were initially successful with the population increasing from just 62 birds in 1992 to 290 in 2009.
- Despite ongoing predator control, the population fell from 288 in 2010 to 122 in 2016.
- Adaptive management has been applied since 2016 and was initially successful, but the population later fell from 173 in 2020 to 101 in 2024.
- High feral cat kill rates have been observed in previous 1080 control work including both ground and aerial operations. Improving our ground control methods for cats is an important area of work with research on new tools ongoing.

Community groups have been identified in the communication plan for consultation on effects.

8. Monitoring

Outcome Monitoring

- Annual census counts of pukunui will be undertaken in March/April each year led by the Rakiura dotterel team.
- Kiwi will be monitored through the operation using the camera grids set up for cat and rat monitoring (kiwi per 1,000 camera hours).
- Lizard monitoring (harlequin gecko, small-eared skink and southern skink) has been established in a joint project between DOC and Otago University.

Result Monitoring

Cats

A camera grid stretching from the shoreline at Doughboy Bay to the open tops east of Blaikie's Hill has been established to monitor cat abundance pre and post control and then run regularly to

monitor reinvasion rates. A non-treatment camera grid will be established in similar vegetation at East Ruggedy (refer monitoring maps 1 & 2).

Rats

Three intense camera grids will be established to monitor rats; one within the standard treatment area, one within the deer repellent area and one non-treatment grid (refer monitoring map 1). Rat trap lines will also be set-up within these areas to monitor the abundance and control effect in the three different rat species present as they are hard to tell apart in camera images. Rat monitoring will be run pre and post control.

Possums

The camera grids set-up for both cats and rats will also provide a measure of abundance (possums per 1,000 camera hours) for possums pre and post control.

Zip will undertake the following research.

> The effectiveness of deer repellent bait on reducing the by-kill of white-tailed deer and its efficacy when added to cereal pellets at controlling possums and rats to target levels.
>
> ZIP will monitor the effectiveness of 1080 to reduce predators to zero density in trial areas.

9. Timeline and Milestones

This project aims to protect pukunui from extinction by reducing predation by feral cats on a landscape scale. A return time to repeat an aerial operation has not yet been established. It is expected this operation may need to be repeated while the predator free programme is being developed. The toxic baiting is scheduled to take place in early August/September 2025. To achieve this the project must be ready for implementation (prefeed baiting) by 1st August. From this timeframe the following milestones are derived for the project:

1. Planning phase of Animal Pest framework complete
2. Pre-Operational Phase of Animal Pest Framework complete by 16 June 2025
3. Prefeed baiting complete by 1 September 2025
4. Toxic baiting complete by 20 September 2025
5. Operational Report complete by 20 January 2026

10. Project risks and mitigation

Risk	Consequence	Likelihood	Mitigation
Weather prolonging operations	Operation delayed, protection from predators not provided while birds are vulnerable	Moderate	Ensure consultation is undertaken in a timely manner and consents are lodged in May 25. Secure storage of bait on Rakiura While pre feed applications are timed at two-week intervals, operational planners must take advantage of any suitable weather window to apply bait, with 5 days the minimum time between pre feed and toxic bait application

			Use multiple aircraft to reduce the time needed to apply bait Store bait on the island
Insufficient communication and engagement	Loss of iwi/community support	Moderate	DOC to manage consultation for Pukunui. ZIP to undertake operational delivery and any research. Communication to address urgency of extinction threat to Pukunui.
Confusion between DOC and ZIP projects	Loss of community support	Moderate	DOC to lead community engagement with clear messaging around extinction risk from predation.
Bait transport and storage	No bait onsite during suitable weather window, creating operational delays	Moderate	Prepare a robust bait transport and storage plan. Store bait on Rakiura. Obtain RC. Understand limitations of vessels for bait transport and factor into plan to ensure bait can be transported when required. Use weather resistant plastic lined plywood pods as used on island eradication operations.
Protest	Delay operation, increase costs, stress staff	Minor	Use NPCP security and secure vessel and loading sites. Prepare security plan for each stage of the operation. Prepare Rakiura staff to deal with confrontation, review office security.
All three rat species are present within the control area.	Operational efficacy. Kiore, Norway and ship rats do not usually coexist together. Rakiura is a unique situation with kiore extinct on the two other islands, and mainland control is usually focused on ship rats.	Moderate	Use best practice for aerial 1080 baiting to target rats. Use 6 gram baits.
Lack of information on effectiveness of controlling three rat	Operational efficacy. Information gap.	Moderate	Establish monitoring to measure the effectiveness of operation on all three rat species.

species in one location.			Design monitoring to detect kiore who have small home ranges and maybe affected by food competition.

11. Project debrief and reporting

An operational report for this project will be prepared and verified within 5 months of the completion of bait application by ZIP

12. Project Compliance register

DOC-7876885

Section B Operational

13. Site description

Conservation Values

Forest Ecosystems

Forest is the most extensive ecosystem on Stewart Island/Rakiura.

Dominant forest type: podocarp-hardwood forest with rimu (Dacrydium cupressinum), miro (Prumnopitys ferruginea), kamahi (Weinmannia racemosa), and southern rata (Metrosideros umbellata). An extensive sub-canopy includes hardwood trees such as broadleaf (Griselinia littoralis), haumakaroa (Pseudopanax simplex), lancewood (P. crassifolius), marbleleaf (Carpodetus serratus) and tree fern (Dicksonia spp.). Many of these species are affected by possum and deer browsing. The ground and shrub tiers of the forest are often sparse with very few young hardwood trees

Threatened Plants

Rare riparian/floodplain forest with Coprosma wallii, tree daisy (Olearia lineata), and herbs (Ourisia modesta, Tetrachondra hamiltonii, Ranunculus ternatifolius).

Shrubland Ecosystems

Lowland/Montane Shrubland: Manuka (Leptospermum scoparium) shrublands in Rakeahua Valley, and Port Pegasus areas. Mixed shrubland dominated by Coprosma species.

Subalpine/Upland Shrublands: Dominated by leatherwood (Olearia colensoi var. argentia), inaka/pineapple shrub (Dracophyllum menziesii), and pink pine (Halocarpus biforme).

Alpine Ecosystems

Found at the Tin Range.

Herb moors, herb bogs, and cushion-fields with unique invertebrate fauna and high endemism.

Grassland Ecosystems

Red Tussock Grasslands: Found at lowland and montane sites. Habitat for Stewart Island fernbird and green skink (Oligosoma chloronoton).

Snow Tussock Grasslands: Found above the treeline in alpine areas. Dominant species: Chionochloa rigida amara, C. lanea, C. crassiuscula subsp. crassiuscula.

Wetland Ecosystems

The wetland communities include subalpine bogs, cushion-fields and shrublands (including manuka), tussock lands, sedgelands, rush lands (including wire rush (Empodisma minus), tarns, bog ponds, lakes, streams, swamps and saltmarshes.

The Rakeahua and Toi Toi river valleys are among other catchments with nationally rare valley sequences of levee, marsh, bogs and tarns

Threatened Species Present within the treatment area

Common name	Scientific name	Status
Southern New Zealand dotterel/Pukunui	Charadrius obscurus obscurus.	Nationally Critical
Australasian Bittern	Botaurua poiciloptilus	Nationally critical
Stewart Island brown kiwi/tokoeka	Apteryx australis lawryi	Nationally uncommon
South Island kākā	Nestor meridionalis meridionalis	Nationally vulnerable
Grey duck/parera	Anas superciliosa superciliosa	Nationally vulnerable
Stewart Island fern bird	Bowdleria punctata stewartiana	Nationally vulnerable
Stewart Island shag	Leucarbo chalconotus	Nationally vulnerable
Long tailed cuckoo	Eudynamys taitensus	Nationally vulnerable
Stewart Island robin	Petroica australis rakiura	Relict
Red crowned parakeet	Cyanoramphus novaezelandiae novaezelandiae	Relict
Yellow-crowned parakeet	Cyanoramphus auriceps	Declining
Long-tailed bat	Chaiinolobus tuberculatus	Nationally critical
Harlequin gecko	Tukutuku rakiurae	Gradual decline
Jewelled gecko	Naultinus genus sp	Gradual decline
Cloudy gecko	Hoplodactylus nebulosus	Sparse
Small eared skink	Oligosoma stenotic	Range restricted
Southern skink	Oligosoma notosaurus	Sparse
Green skink	Oligosoma chloronoton	Gradual decline
Herekopare weta	Deinacridia carinata	Nationally endangered
Flightless chafer beetle	Prodontria grandis	Naturally uncommon
Flightless chafer beetle	Prodontria rakiurensis	Naturally uncommon
	Ourisia modesta	Nationally endangered
	Tetrachondra hamiltonii	Nationally vulnerable
Tree daisy	Brachyglottis stewartiae	Naturally uncommon
Tree daisy	Brachyglottis stewartiae	Naturally uncommon

Snow tussock	Chionochloa lanea	Naturally uncommon
	Ranunculus stylosus	Naturally uncommon
	Ranunculus kirkii	Naturally uncommon
	Ranunculus ternatifoliu	Declining
Tree Daisy	Olearia lineata	Declining
Blood wood	Coprosma wallii	Declining
Snail	Rhytida australis	Declining
Gollum galaxias	Galaxias gollumoides	Gradual decline
Giant kōkopu/taiwharu	Galaxias argenteus	Gradual decline
Southern flathead galaxias	Galaxias “Southern sp.”	Gradual decline
Long fin eel	Anguilla dieffenbachia	Gradual decline

Threats

The Southern New Zealand Dotterel (Pukunui) was once widespread throughout the South Island, with the Rakiura population being the only known birds left. The Pukunui has been considered critically endangered since monitoring began in the late 1980s.

Feral cat predation is considered the primary issue, with three species of rats and possums also contributing to the population decline.

Other predators include:

Rats

- Kiore
- Ship Rat
- Norway rat

Possums

Australasian spur-winged plover

White-tailed deer

Kahu - Australasian harrier

Karoro – Southern black backed gulls

These predators account for a portion of nest failures, while their relative contribution is smaller. Spur-winged plovers are territorially competitive and have been noted to break Pukunui eggs. White-tailed deer have been noted to eat Pukunui eggs, but the prevalence of this interaction remains unknown. Australasian harriers are likely to eat chicks and cause disturbance. Southern black-backed gulls are likely predators of eggs and chicks, especially near their nesting colony at Hill 511, with southern black-backed gull control undertaken on Hill 511 in 24/25 to reduce this risk.

Issues

"Rakiura National Park has outstanding natural character and wildlife, which are valued by the local, national, and international community. The abundance and quality of natural ecosystems, habitats, and species within the Park are due in part to the absence of certain introduced animals such as stoats, ferrets, weasels, rabbits, pigs, and mice. However, the introduction of animals such as feral cats, deer, possums, and rats has impacted the native flora and fauna species within the Park. Feedback from community consultation during the preparation of the Rakiura National Park Management Plan provided a clear vision for Stewart Island/Rakiura to become a 'feral cat, rat, and possum free island'" (Rakiura CMS).

Rakiura has been selected as a trial site to become the largest introduced pest-free island, with a plan to remove rats, possums, and feral cats.

While ground control of 1080 has been used on the island, aerially applied 1080 has not been used, the scale and timing of this operation will raise concerns among the community especially with this being the first time aerial 1080 is proposed to be used while predator free discussions are ongoing. While 1080 has not been aerially applied to Rakiura previously, lessons learned from the aerial application of brodifacoum which is an accumulative toxin could be confused with 1080, which is a biodegradable toxin. Concerns over contamination of seafood from the use of brodifacoum have been raised from outcomes of the Ulva Island rat eradication operation. Research is being undertaken to improve our understanding of the fate of 1080 in a marine environment to help support the decision making and the community. Managing the impact of this operation on the community is vital to maintain support for the long-term goals of Predator Free Rakiura (PFR) and the Rakiura community's wishes to remove rats, feral cats, hedgehogs and possums from the island.

The ZIP 1080 to Zero trial work requires aerial 1080 to be applied twice to a section of the operational area and it blurs the line between predator suppression with the long-term goal of a Predator Free Rakiura. Maintaining separation between the suppression operation to prevent extinction and PFR eradication goals will require careful communication to distinguish between the two different programs of work. To undertake the research work requires additional weather windows to complete and this has the potential to disrupt the effective delivery of the pukunui operation. There is already concern over the use of the toxin, with opposition raising question over the need to use a higher sowing rate of 1080, applied twice over a short period, and doubts exist within the community about the ability of aerial 1080 to be used as an eradication tool.

Consultation with the community will need to focus on the extinction risk to Pukunui, while ZIP uses this operation to gain insights into predator behaviour on Rakiura for future Predator Free Rakiura work.

Other management within or adjacent to the treatment area

Year	Operation Name	Control Method	Op report Ref.	
2024-2025	Black Backed gull control	Alpha chloralose Hand Laid		DOC

2022-2023	Feral Cat Control in Rakiura National Park - SNZD breeding areas	Trap	
2021-2022	Rat and Feral Cat Control in Rakiura National Park - SNZD breeding areas	Broadifocoum Bait Stations Trap	
2020-2021	Control In Rakiura National Park - SNZD breeding areas	1080 & Broadifocoum Bait Stations	2122SIS01
2019-2020	Feral Cat, Kiore, Norway rat, Ship rat, White-tailed deer Control in Rakiura National Park - SNZD breeding areas	1080 & Broadifocoum Bait Stations Trap	1920SIS02
2019-2020	Control In Rakiura National Park - SNZD breeding areas	1080 & Broadifocoum Bait Stations	1920SIS01
2018-2019	Feral Cat Control in Rakiura National Park - SNZD breeding areas	1080 & Broadifocoum Bait Stations	1819SIS04
2017-2018	Feral Cat, Kiore, Norway rat, Ship rat, spur-winged plover, White-tailed deer Control in Rakiura National Park - SNZD breeding areas	1080 & Broadifocoum Bait Stations Hunting	1819SIS02
2017-2018	Possum Control in Rakeahua	1080 & Broadifocoum Bait Stations	1819SIS03
2015-2016	Rakiura National Park – Tin Range, Hill 511, Mount Rakeahua, Rocky Mountain	1080 Bait Station	DOC-2588678
2015-2016	Rakiura National Park – Southwest Arm (southern coast), Rakeahua River catchment	1080 Bait Station	DOC-2732612
2014-2015	Rakiura National Park – Tin Range, Hill 511,	1080 Bait Station	DOC-2345628

	Mount Rakeahua, Rocky Mountain		
2013-2014	Rakiura National Park – Tin Range, Hill 511, Mount Rakeahua, Rocky Mountain	1080 Bait Station	DOCDM-1280084
2012-2013	Rakiura National Park – Tin Range, Hill 511, Mount Rakeahua, Rocky Mountain	1080 Bait Station	
2011-2012	Control In Table Hill, Hills 464 & 511, Mt Rakeahua and Rocky Mt, Stewart Island	1080 Bait Station	1112SIS01
2011-2012	Feral Cat, Kiore, Norway rat, Ship rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	1112SIS02
2010-2011	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	1011SIS01
2009-2010	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0910SIS02
2008-2009	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0910SIS01
2007-2008	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0809SIS01
2006-2007	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0607SIS03
2005-2006	Possum Control in South Mason Bay (R3) Management Unit	1080 Bait Station	0506SIS03
2005-2006	Possum Control in R1 Management Unit	1080 Bait Station	0506SIS04

2005-2006	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0607SIS02
2004-2005	Possum Control in Freshwater Management Unit (F1) 2004/2005	Trap	0405SIS01
2004-2005	Possum Control in Pegasus (P3) and Tin Range (T1) Management Units	1080 Bait Station	0405SIS04
2004-2005	Possum Control in Rakeahua (R1) Management Unit	1080 Bait Station	0405SIS05
2004-2005	Feral Cat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0405SIS07
2003-2004	Feral Cat, Norway rat, Ship Rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0405SIS02
2002-2003	Possum Control in Mt Rakeahua district of Rakiura National Park	Cholecalciferol Cyanide paste Cyanide encapsulated pellets 1080 Bait Station	0304SIS09
2002-2003	Feral Cat, Kiore, Norway rat, Ship rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	Bromodiolone & 1080 Bait station	0304SIS15
2001-2002	Feral Cat, Ship rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	1080 Bait Station	0304SIS26
2000-2001	Feral Cat, Kiore, Norway rat, Ship rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	Bromodiolone & 1080 Bait station	0304SIS14
1999-2000	Feral Cat, Kiore, Norway rat, Ship rat Control in	Bromodiolone & 1080 Bait station	0304SIS13

	N.Z. Dotterel Breeding Areas on Stewart Island		
1998-1999	Feral Cat, Kiore, Norway rat, Ship rat Control in N.Z. Dotterel Breeding Areas on Stewart Island	Bromodiolone & 1080 Bait Station	0304SIS12

14. Control Design

The Pukunui Treatment area is focused around the Tin Range within Rakiura National Park which contains approximately 40% of the pukunui / Southern NZ dotterel breeding area. The 40,000ha approx. treatment area has been designed to include the estimated home range of feral cats that present the greatest predation pressure to pukunui that nest on the Tin Range.

This project is focussed on the aerial application of 1080 baits over the treatment area of approximately 40,000ha. An approximately 6,000ha area within the larger Pukunui treatment area will be treated twice by ZIP as part of their 1080 to zero trial. The first ZIP toxic bait trial application is planned for late June - mid-July. The application of toxic bait to the entire 40,000ha treatment area is planned to be delivered in August 2025 and within four weeks of pre-feeding. If the toxin application is delayed by bad weather beyond four weeks the NPCP TAG will provide advice on whether reapplying prefeed is required.

15. Method(s)

The pesticide uses are:

- 0.15% 1080 cereal pellets aerially applied.

Pre-feeding at 2kg/ha will be followed within 20 days by toxic baiting at the same rate.

16. Block and treatment area boundaries

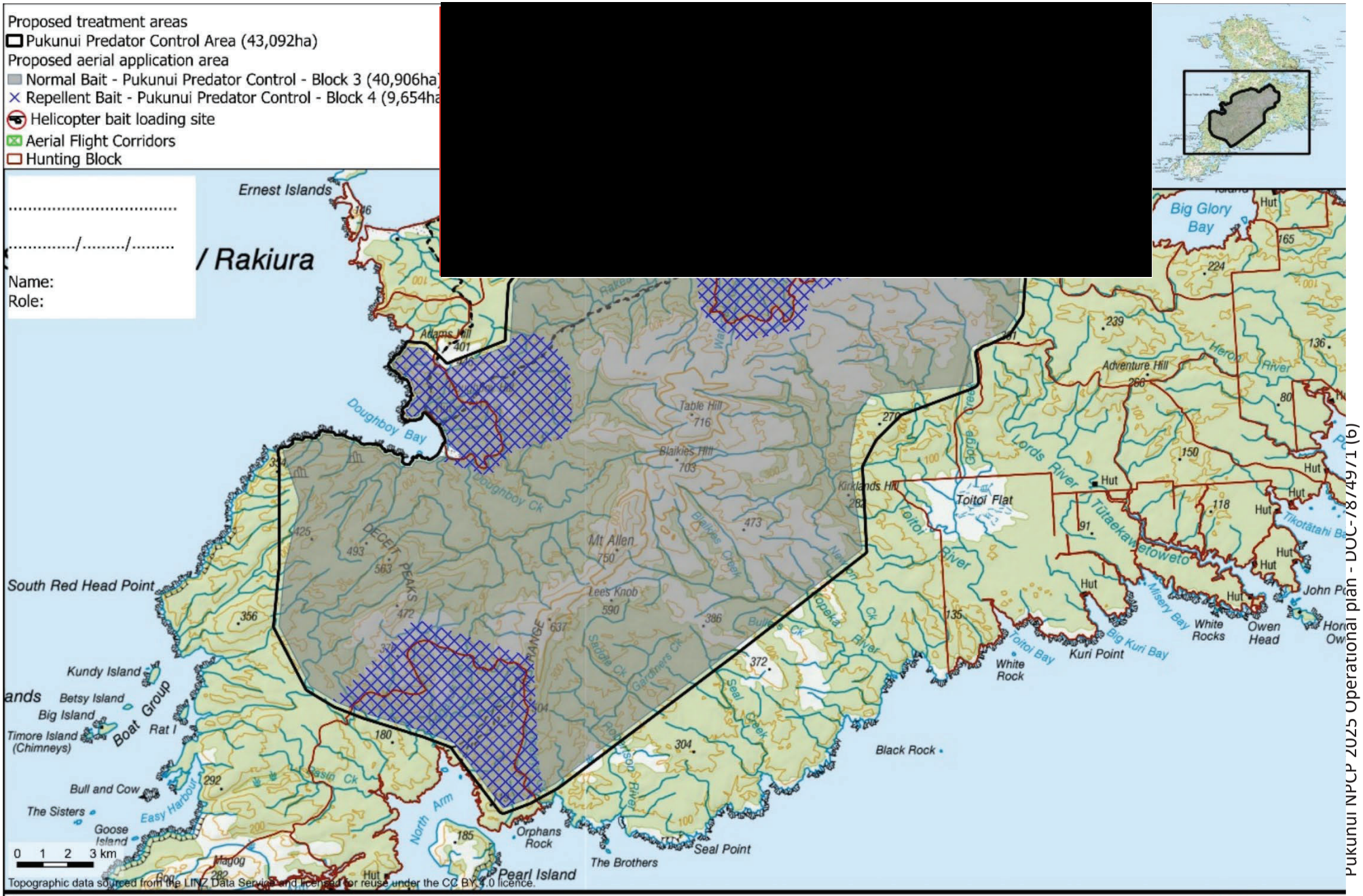
The block is designed around the main pukunui breeding habitat on the Tin Range, with the boundary extending approximately 6km from known pukunui breeding sites. The control area radiates outwards from the Tin Range to Bald Hill and Southwest Arm in the north, south to the North Arm of Port Pegasus, West to Doughboy Bay, including the Deceit Peaks and east to Kirkland's Hill.

The Treatment boundaries are available on the Q drive here Q:\GIS_Analysts\Projects\Tasks\Aerial_Pesticide_Ops\Rakiura.

The coastline is to be treated as a sensitive boundary with a 50m non-sowing buffer applied to avoid bait being sown directly into water.

The following huts are within the treatment area and will be sown over:

- The Rakeahua and Doughboy huts, woodsheds and toilets, and Doughboy Rock shelter. The water supplies will be disconnected prior to bait application. The hut roof and surrounding open areas will be inspected and cleared of baits
- Biodiversity huts -
    - Blaikies Hill
    - Table Hill
    - 511



[redacted]

Two temporary decks with gantry cranes will be built onsite to provide a platform for storage of bait and to enable aircraft loading without the need for wheeled or tracked machinery. The decks will be designed and built as temporary structures no more than 1.5m above ground height. Cranes will have a trial run, before they are shipped and built onsite.

A pellet trolley jack (and spare) for each deck will be required to move bait pods. Fuel will be required to run the generators that power the crane winches. Cordless drills, drill bits (incl spares), spare batteries and battery chargers will be used to dismantle bait pods. Pods will be stacked as they are dismantled and removed post operation.

The decks will be dismantled and removed after the completion of bait application.

[redacted]

17. Security

[redacted] have been engaged to provide loading site security on days of bait application and to act as security consultants throughout the planning of the operation. Contact with [redacted] will be through [redacted]

Bait storage locations will have remote monitored cameras connected to a satellite service, along with physical patrols to ensure public safety and operational risks to bait quality are managed.

18. Public safety

The communication plan outlines all the target audiences for notification. The record contained within that plan shows who was contacted when and by what means. A public notice in the Otago Daily Times and The Southland Express will be placed two weeks before the target start date. Warning signs will be erected as per the sign register in the Pesticides App at least the day before toxic bait is laid.

One public area will be closed for the duration of the operation [redacted]

- [redacted]

The Rakeahua, Doughboy and biodiversity huts water supplies will be disconnected, and alternative drinking water will be supplied.

All walking tracks in the Treatment area will remain open and will have baits cleared from them as soon as practical after toxic baiting.

Water supply locations used for servicing local boat users will be identified during consultation, warning signs will be located at identified sites. Exclusions will be decided on a case-by-case basis for supplies that do not service dwellings.

- The North Arm Port Pegasus continuous shipping water supply is outside the Treatment Area and not affected.
- Other water supplies identified for recreational vessels will have warning signs erected.

19. Bait, storage and transport

Bait Type

This project will use 0.15% 1080 Pellets using Pronature DF 16mm (6 g) baits. Baits will be single cinnamon lured (0.15%). A total of 82.2 tonne (65.4t NDR and 16.8t DR) of prefeed and 82.2 tonne (65.4t NDR and 16.8t DR) of toxic bait is required for this operation. Prefeed bait is required to be in the poison store by 1st July with toxic available by 1st August. Bait will be bulk packaged in 300kg bags with 2 bags per pod.

Bait Transport

[redacted]

20. Incidents and emergencies

An emergency response plan has been developed DOC-10337898 and will be included in the Action Plan for the project. It covers the following topics:

- Suspected poisoning
- Over sows (Bait misapplication)
- Dropped bucket
- Onsite bait storage

- Marine transport and transhipping. Bait and fuel.
- Back country camping

It also provides a generic template to guide establishing a response to other types of incidents not covered.

This plan is intended as a starting point for modification using Team Process to adapt it to real situations as they arise. A core emergency response team of 3 will remain on standby to respond to incidents as they arise. This team will be supplemented by others as required. The core team are trained first aiders and will hold CSL's for 1080.

21. Decision making on the day of bait application

The decision to begin or stop flying operations on the day of operation will follow a 3 yes- 1 no protocol. To begin requires the concurrence of the Incident Controller, Project Manager Lead and the Chief Pilot. Any one of these three or the Air Operations Manager or Safety Officer will be able to stop operations if they see an issue which warrants it.

Other decisions will be taken by the relevant managers in the operational team described in section 4 of this plan or by the Incident Controller. Decisions within the scope of delegated tasks will fall to those people delegated the task.

22. Bait spreading

Each application of bait is expected to take approximately 16 hours of flight time to apply utilising a mix of 8 aircraft supplied by [redacted]. Unloading of bait for each phase is expected to take two aircraft with a minimum lifting capacity of 700kg up to 8 hours [redacted], this time is increased exponentially in the event the sea state [redacted]

Pre-feeding

Pre-feeding using non-toxic Pronature DF cinnamon lured 16mm (6g) bait will begin in the first suitable weather window on or after the 1st of August. Pre-feed baits will be sown at a rate of 2kg/ha [redacted]

[redacted] have a variety of aircraft available from the twin engine BK117 and single engine B3 Squirrel which can each carry 900kg, to the long ranger and jet ranger aircraft that can carry 500kg and 300kg respectively. [redacted] sowing buckets have current calibrated useable swath widths as listed below. GPS flight lines will use a 20m overlap as per calibrated for NPCP operations (see table).

Bucket ID	Bucket Type	Maximum swath	Useable swath	20m overlap	Bait size	Capacity
[redacted]	Broadcast	234	170	150	16	900kg
	Broadcast	234	180	160	20	900kg
	Broadcast	208	170	150	16	500kg
	Broadcast	232	200	180	20	500kg

[redacted]	Broadcast	226	180	160	16	500kg
	Broadcast	240	180	160	20	500kg
	Broadcast	206	170	150	16	300kg
	Broadcast	232	200	180	20	300kg
	Deflector right	72	65	45	16	300kg
	Deflector right	82	75	55	20	300kg
	Deflector right	126	45	45	10	300kg
	Broadcast	126	80	80	10	300kg
	Trickle	18	5	5	10	300kg
	Broadcast	236	190	170	16	900kg
	Broadcast	232	190	170	20	900kg
	Trickle	12	12	12	16	300kg

Toxic Baiting

Toxic baiting will follow at the first available weather opportunity at least 5 days after pre-feeding. Toxic bait will be sown at 2kg/ha. A forecast of at least 2 nights with less than 10mm of rain in any 24hour period will be required for each application of bait.

Bait loading

Despite using non-toxic baits, the loading of pre-feed will be treated as a 'dress rehearsal' for toxic baiting so loading crews will wear full PPE as per Safe Handling Sheet 1. [redacted] will provide loading crew who will load baits into a dummy hopper on the deck. The dummy hopper will be swung over the helicopter bucket. How well this system worked will be covered in a debrief at the end of pre-feeding phase 1 of the ZIP 1080 to Zero trail blocks and improvements made before the pukunui prefeed baiting.

Data capture

Helicopter GPS data will be downloaded from each machine immediately after the first load and thereafter at refuelling times (approximately hourly). Downloads will be processed by the GIS Analyst and discussed with Air Operations Manager and from time to time the Incident Controller.

A bait log will be kept for each load leaving the loading site. This data will be precisely timed so that it can be matched with GPS downloads. Additional record keeping will include:

- An operational log of personnel on site, weather reports and records, decisions taken by Incident Controller
- Tracking of 1080 bait packages as they are received on the loading sites from the poison store and used on the operation.
- A log of all communications and actions during the application and any incident should one occur.

23. Demobilisation

Clean up and disposal

Empty bags will be bundled into a relabelled empty bulk bag on site during loading, secured from aircraft rotor wash and returned to the [redacted] for later disposal.

The marine transport boat decks will be inspected and swept before back-loading empty pallets, pod frames and empty bags to the [redacted] at the completion of toxic baiting. The helicopter buckets and decks will be washed down with high pressure water after first removing any visible pellets remaining. The loading site itself will be fenced off and washed down with high pressure water. Fencing and loading site signs will remain in place until 50mm of rain has fallen on the site. Contaminated PPE will be either disposed with empty toxic bait bags or labelled and returned to [redacted] for cleaning.

Section C Project Task List

Enter a comprehensive list of tasks to complete the project and who is responsible for completing them. This can be presented in a table here or in a separate spreadsheet with file reference here.

Example text.

For a complete list of tasks for this project see DOC-10214390

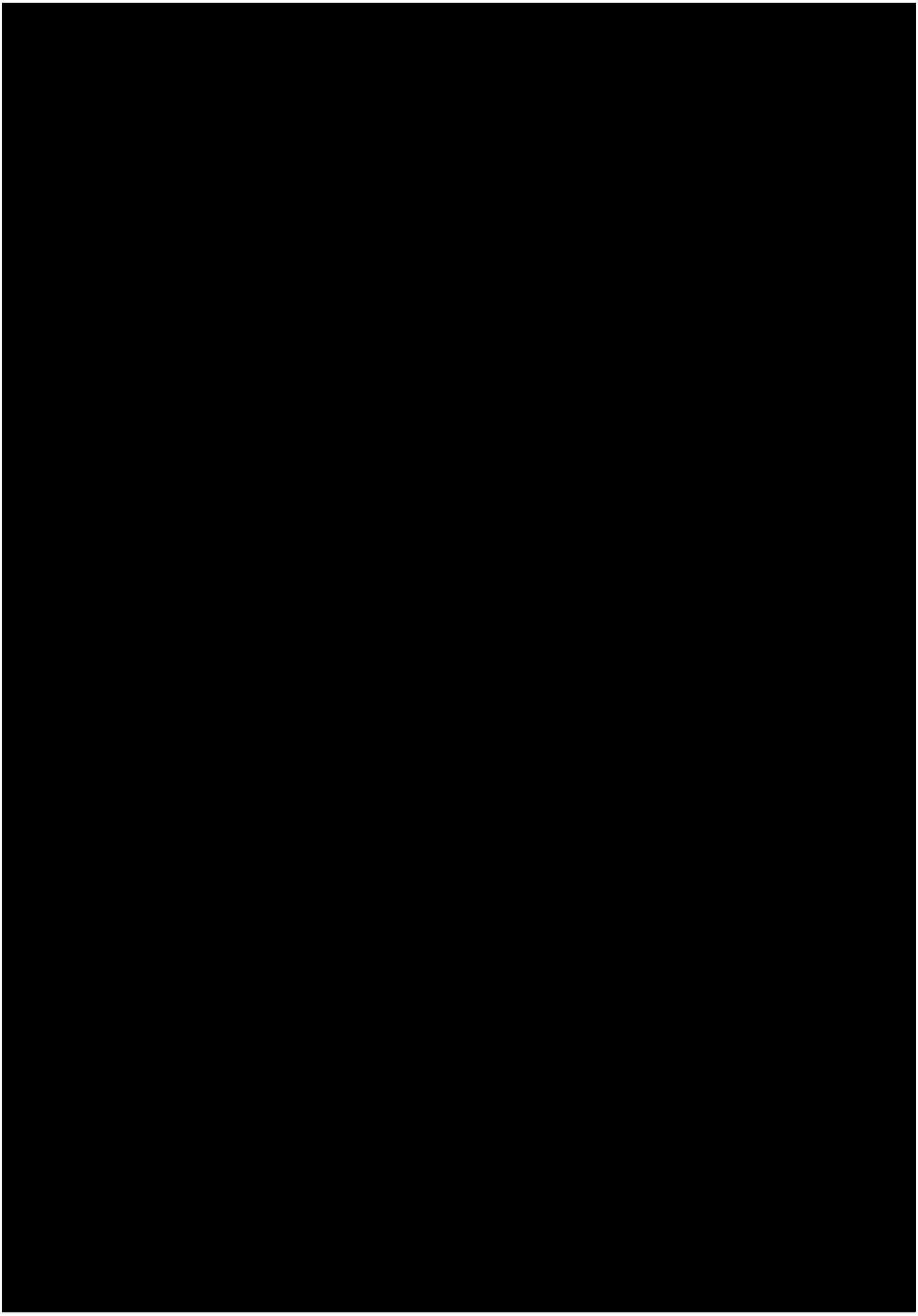
Section D Task specifications

Use the format provided to complete Task Specifications for Tasks you judge to require them. The three most important elements of Task Specs are:

- Clear, concise standards describing what the task will look like if done well.
- Clear delegation to one person responsible for ensuring the task is completed to standards and who that person reports to and has under their control
- Sufficient information to allow the task to be carried out without need for further documentation not already supplied as part of the specification.

Task specification	Action Plan Schedule for bait application days
[redacted]	

R



[redacted]

R

Task specification	Install warning signs		
Operation: Pukunui Aerial 1080		**Dates:**	
This task is delegated to:	[redacted]		

Crew	Phone	Radio Ch
[redacted]		

Details of task

Install warning signs to meet the standards below 1 day before toxic baiting.

Photograph each sign in place.

Update Pesticides App with locations of any extra signs

Included in scope

Installing warning signs
Sign register maintenance
Inspection and maintenance of signs

Outside Scope

Preparing signs

Standards

- ❑ Signs installed before toxic baiting begins.
- ❑ Signs located as per sign register.
- ❑ GPS locations of signs collected and recorded.
- ❑ Additional signs are installed where necessary and entered into sign register
- ❑ Signs are mounted in plain view for people entering block at eye level where possible and securely fastened
- ❑ Signs are not attached to existing DOC recreation signage in the area.
- ❑ Signs are visible and legible at all times.

Equipment

❑ Hammer & galv nails	❑ Wooden stakes, posts & backing boards
❑ Portable radio	❑ Spade & rammer
❑ Battery drill and screws	❑ GPS
❑ Signs	❑ maps

Attachments

- Map of treatment area
-

Contacts		Phone	Radio Ch
Incident Controller	[redacted]		
Ground Operations Mgr			
Safety officer			

Task specification	Establish Loading site		
Operation: Pukunui Aerial 1080		**Dates:**	
This task is delegated to:		**Piper**	
Crew		**Phone**	**Radio Ch**
[redacted]			

Details of task

Establish the loading site to meet the standards below 1 day before baiting.

Included in scope

Marking out work zones & signage
Establishing shelters and facilities
Furniture, power supplies
Liaison with Security

Outside Scope

Comms and computer equipment
Bait and fuel supplies

Standards

- ❑ Site established as per diagram.
- ❑ .

Equipment

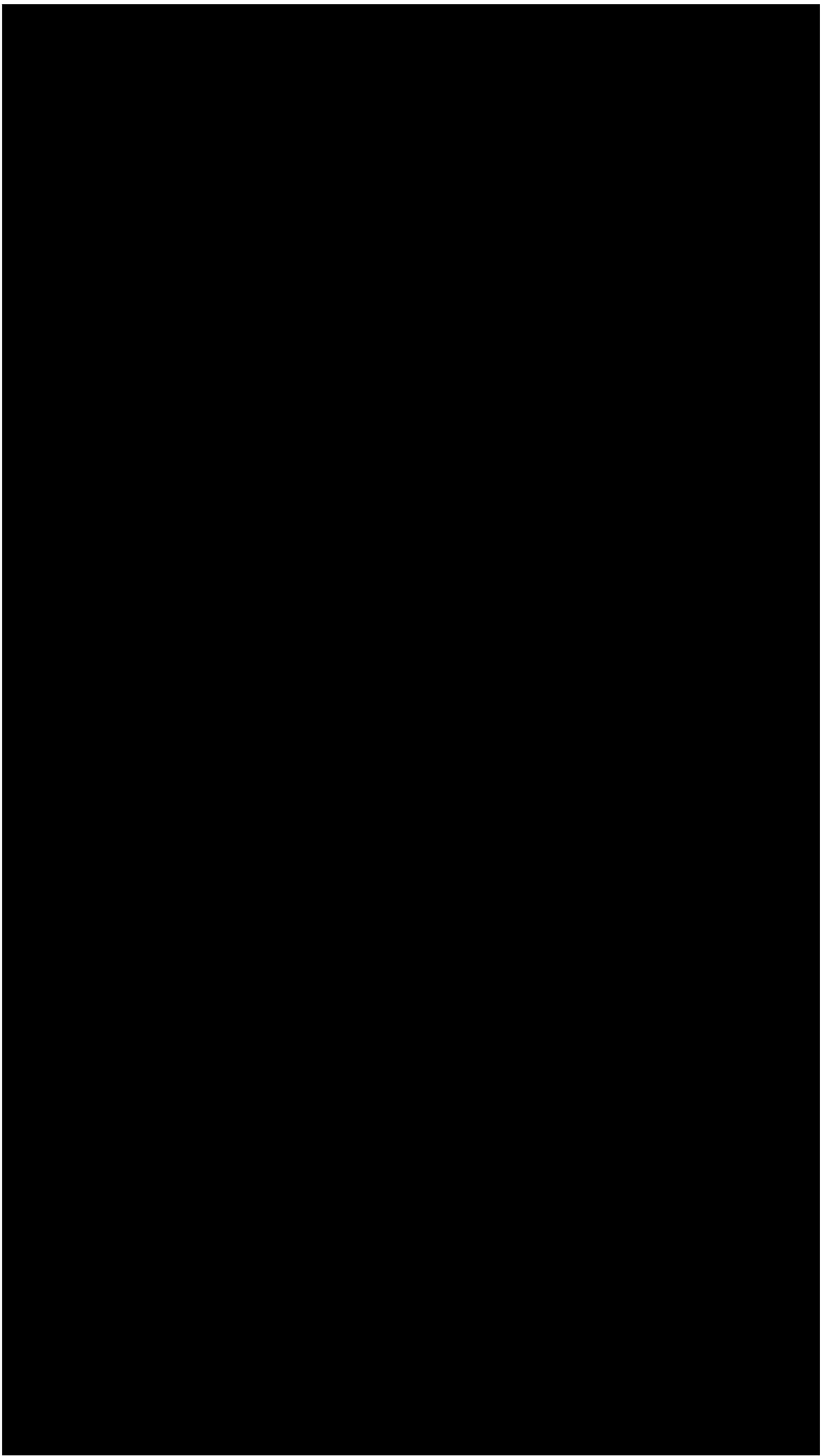
❑	❑

Attachments

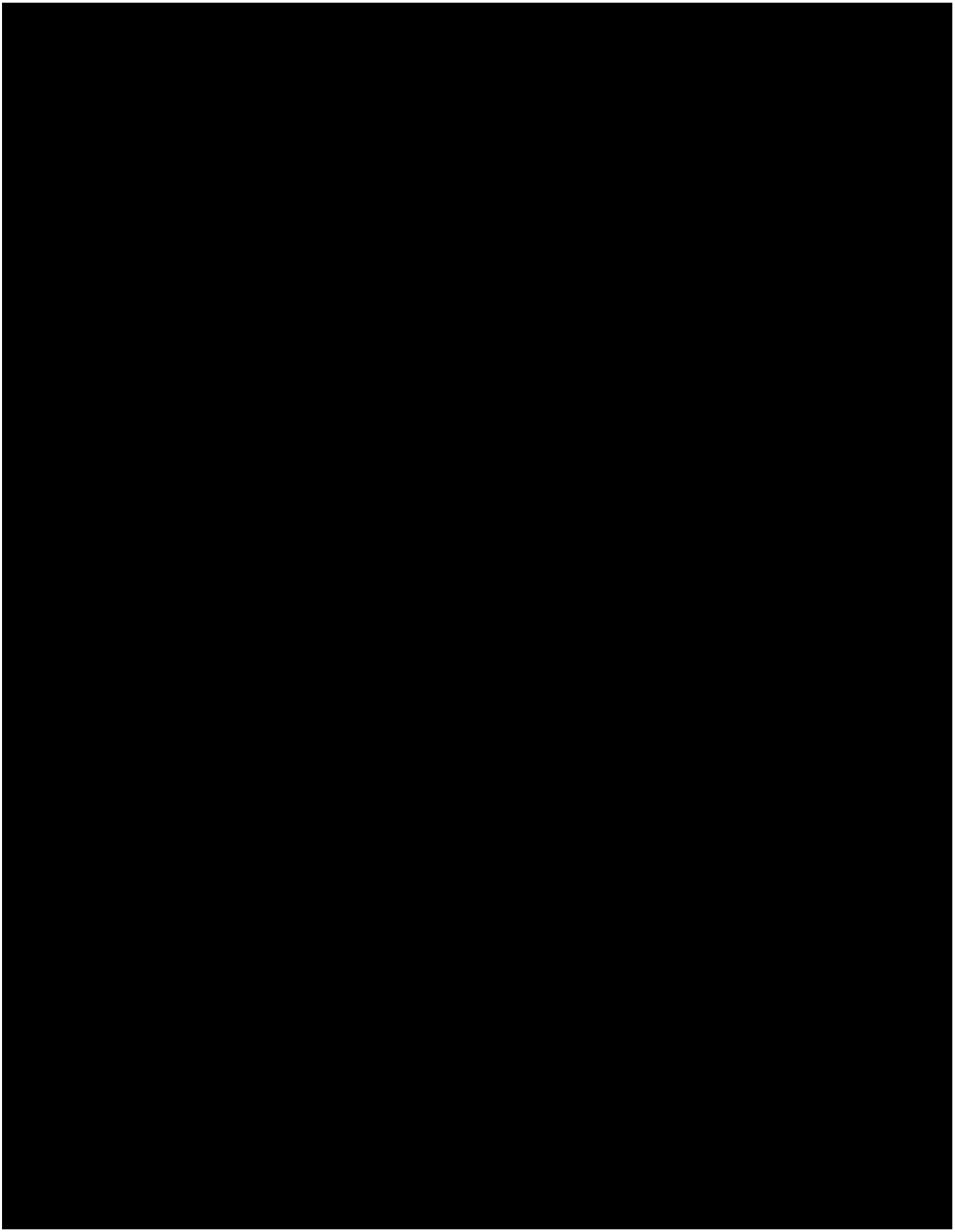
- Map of Loading site
-

Contacts		Phone	Radio Ch
Incident Controller	[redacted]		
Air Operations Mgr			
Security			

Loading site plan



Gantry crane and deck installed onsite



Task specification	Aerial Contractor Planning Visit		
Operation: Pukunui Aerial 1080		**Dates:**	
This task is delegated to:	[redacted]		
Crew		**Phone**	**Radio Ch**
[redacted]			

Details of task

Establish a common understanding of how the bait will be flown.

Included in scope

- Checking contractor's equipment against that shown in SOW
- Discussion of aerial application boundaries, treatment area boundaries and exclusion zones
- Discussion of loading site location and layout
- Communications
- Safety hazards and issues
- Logistics of fuel, equipment and helicopter positioning

Outside Scope

Bucket calibration

Standards

- ❑ The contractor understands what is expected of him/her in the contract schedule.
- ❑ Loading site location and probable layout are agreed.
- ❑ Communication channels and time requirements for signalling drop days are understood by both parties.
- ❑ Aerial application boundaries and proposed flight line orientation are agreed
- ❑ Safety standards are agreed and flying hazards identified
- ❑ Equipment presented in the quote is serviceable
- ❑ GPS/GIS & radio systems proposed for use (Contractor or DOC supplied) are compatible and fit for purpose.

Equipment

❑ Set of operational maps showing the final and correct treatment area boundary and aerial application boundary	❑ The Operational plan ❑ Photos of loading sites ❑ Contract

Attachments

•

Contacts		Phone	Radio Ch
Incident Controller	[redacted]		
Air Operations Mgr			
GIS			

Task specification	Track Clearing		
Operation: Pukunui Aerial 1080		**Dates:**	
This task is delegated to:		[redacted]	
Crew		**Phone**	**Radio Ch**
[redacted]			

Details of task

Clear baits from designated walking tracks

Day 1: Fly into block and commence walking from either end of the track from Adams Hill boundary and Freds Camp track.

Included in scope

- Clearing baits off designated walking tracks
- Leaving key facts notification pack in hut
- Inspect hut roofs and reconnect Doughboy and Rakeahua hut water supplies

Outside Scope

Standards

- ❑ Only begin after confirmation is received that bait application is complete in the area.
- ❑ Gloves are worn to handle baits
- ❑ Baits on walking track surface are to be picked up and thrown out of sight.
- ❑ No baits remain on helipad near hut.
- ❑ Immediate surrounds of huts are checked for bait including hut roof. (100 metre exclusion zone around huts).
- ❑ A rough count of the number of baits removed from each section is recorded.
- ❑ Particular attention is paid to searching the riverbeds/slips where the track crosses or is less defined
- ❑ The entire length of each track is searched. No shortcuts are taken across river flats.

Equipment

❑ Gloves	❑ First Aid Kit
❑ Key Fact Packs	❑ Portable radio & PLB
❑ Overnight gear, food and clothing	❑

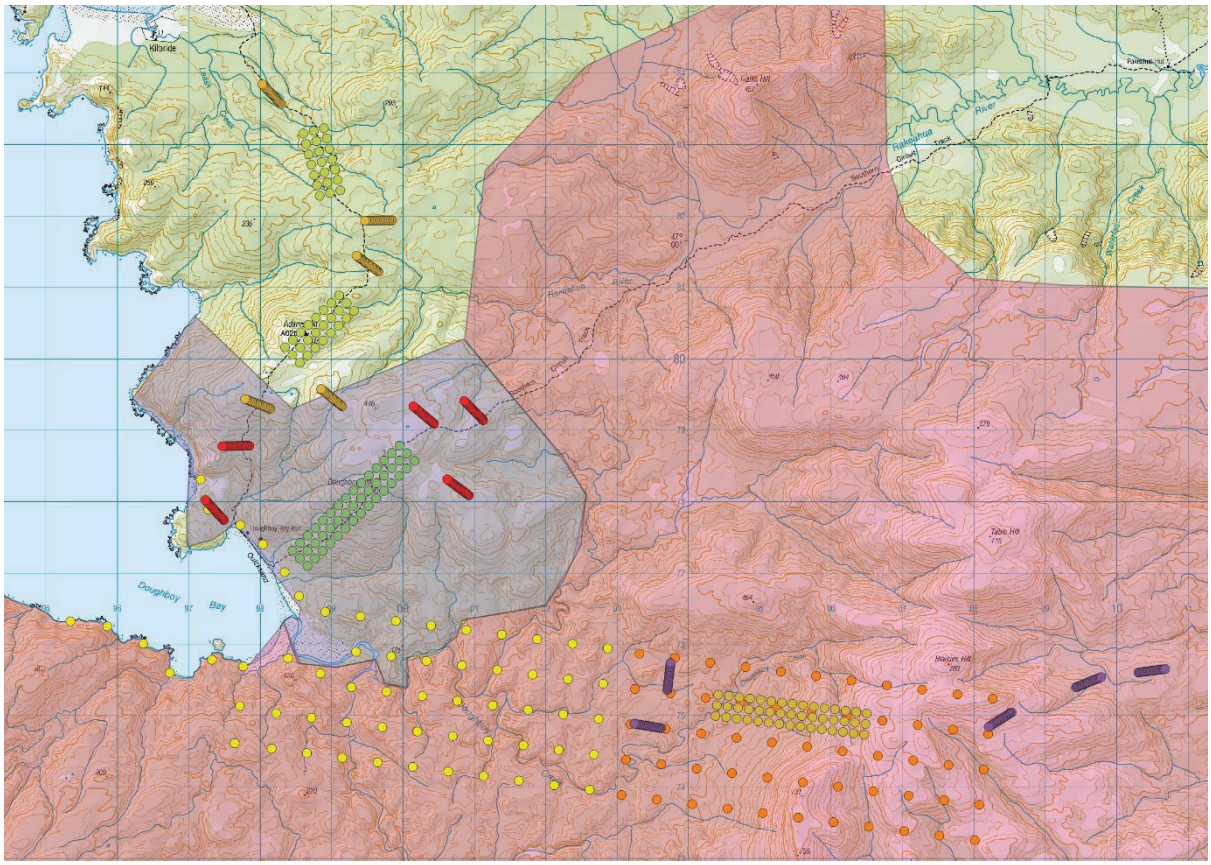
Attachments

- Map of Treatment Area and Aerial Application Area

Contacts		Phone	Radio Ch
Incident Controller	[redacted]		
Ground Operations Mgr			

Appendix. Maps.

Monitoring



Rat and feral cat monitoring lines.

Doughboy to Blakies Hill. The widely spaced grid is the cat camera grid. It will be run pre and post and then every 3 months to track reinvasion rates (end date March 2026 at this stage). The more intense grids are the rat camera grids, one in deer repellent, one in standard treatment and one non-treatment (this one is split in two for logistical reasons).

The blue, red and yellow lines are rat trap lines. These are spread to pick up the different vegetation types. They will be run pre-op, then shifted to the camera grids and run post op.

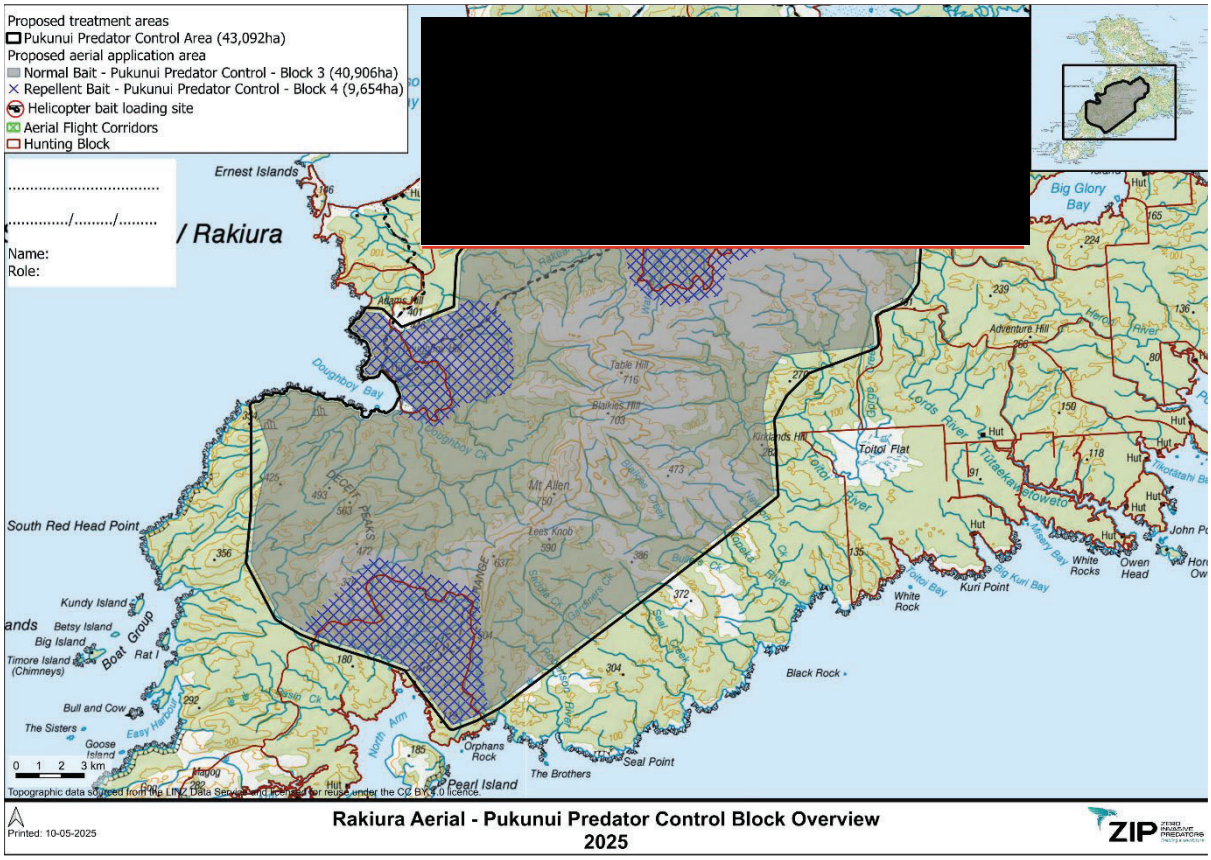
All cameras will capture kiwi to provide pre and post data comparison.

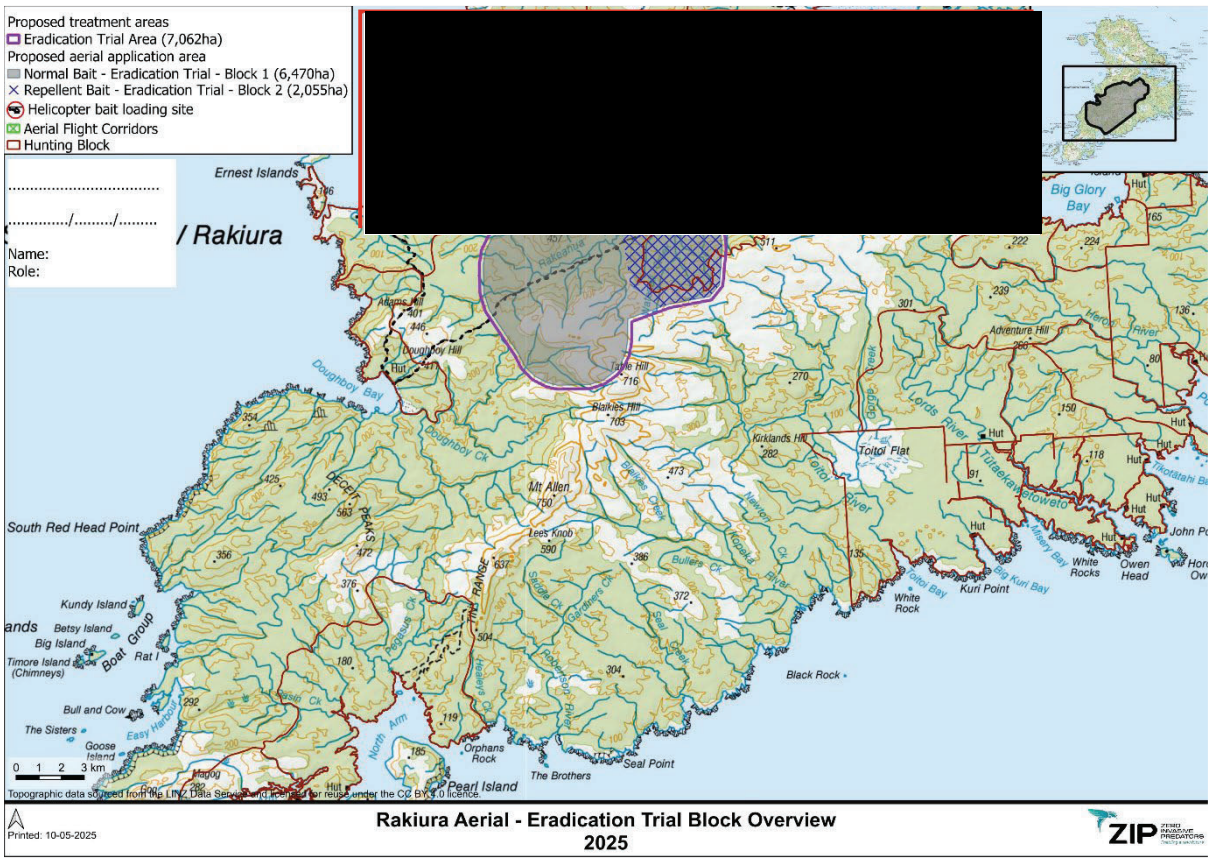
R

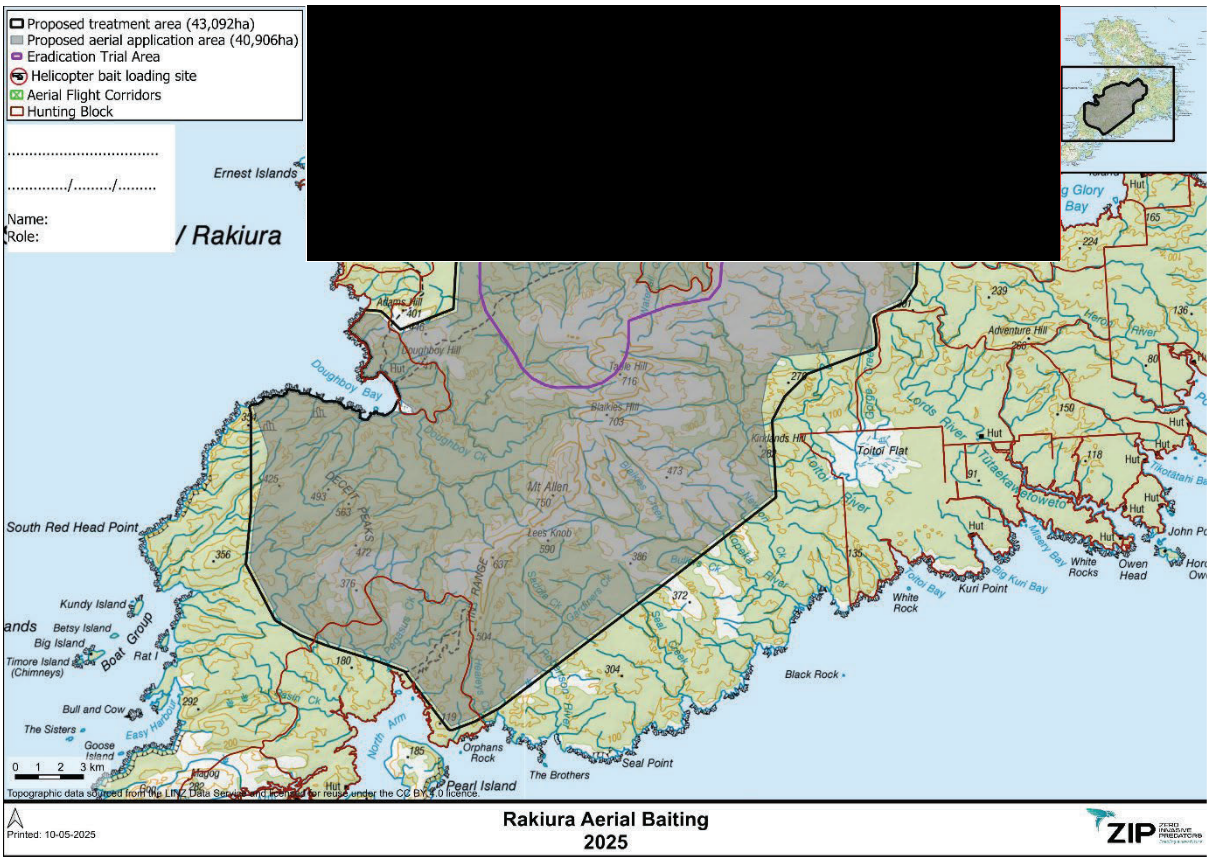
Control cat camera grid monitoring. (Uncontrolled control area)

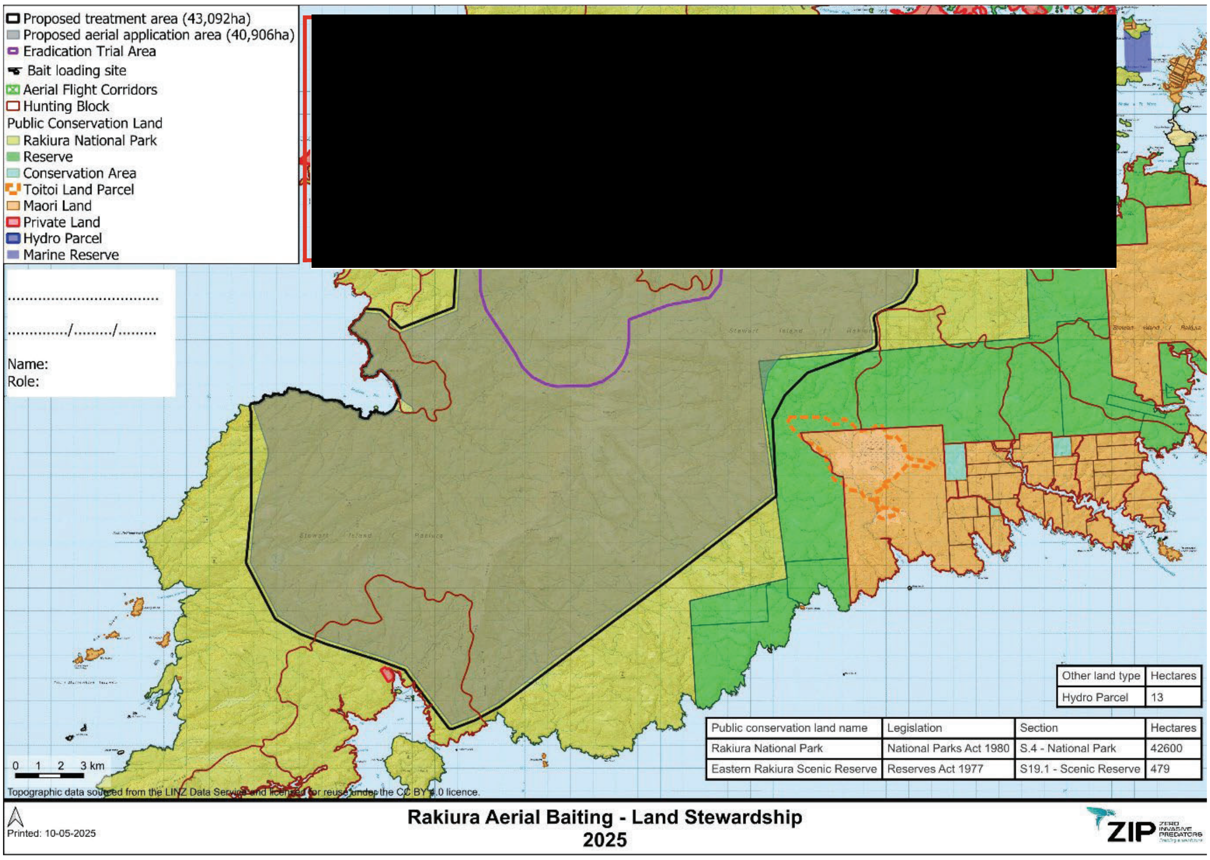
R

Consent maps


Proposed treatment areas
Pukunui Predator Control Area (43,092ha)
Proposed aerial application area
Normal Bait - Pukunui Predator Control - Block 3 (40,906ha)
Repellent Bait - Pukunui Predator Control - Block 4 (9,654ha)
Helicopter bait loading site
Aerial Flight Corridors
Hunting Block
Name:
Role:
/ Rakiura
Ernest Islands
South Red Head Point
Kundy Island
Betsy Island
Big Island
Boat Group
Rat I
Timore Island (Chimneys)
Bull and Cow
The Sisters
Goose Island
Easy Harbour
North Arm
Orphans Rock
Pearl Island
The Brothers
Seal Point
Black Rock
White Rock
Kuri Point
Big Kuri Bay
Owen Head
Big Glory Bay
Adventure Hill
Table Hill
Blakiles Hill
Kirklands Hill
Mt Allen
Lees Knob
Toitoi Flat
Doughboy Bay
Doughboy Ck
Lords River
Tutaekaka
Browetc
Hut
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Printed: 10-05-2025
Rakiura Aerial - Pukunui Predator Control Block Overview
2025
ZIP

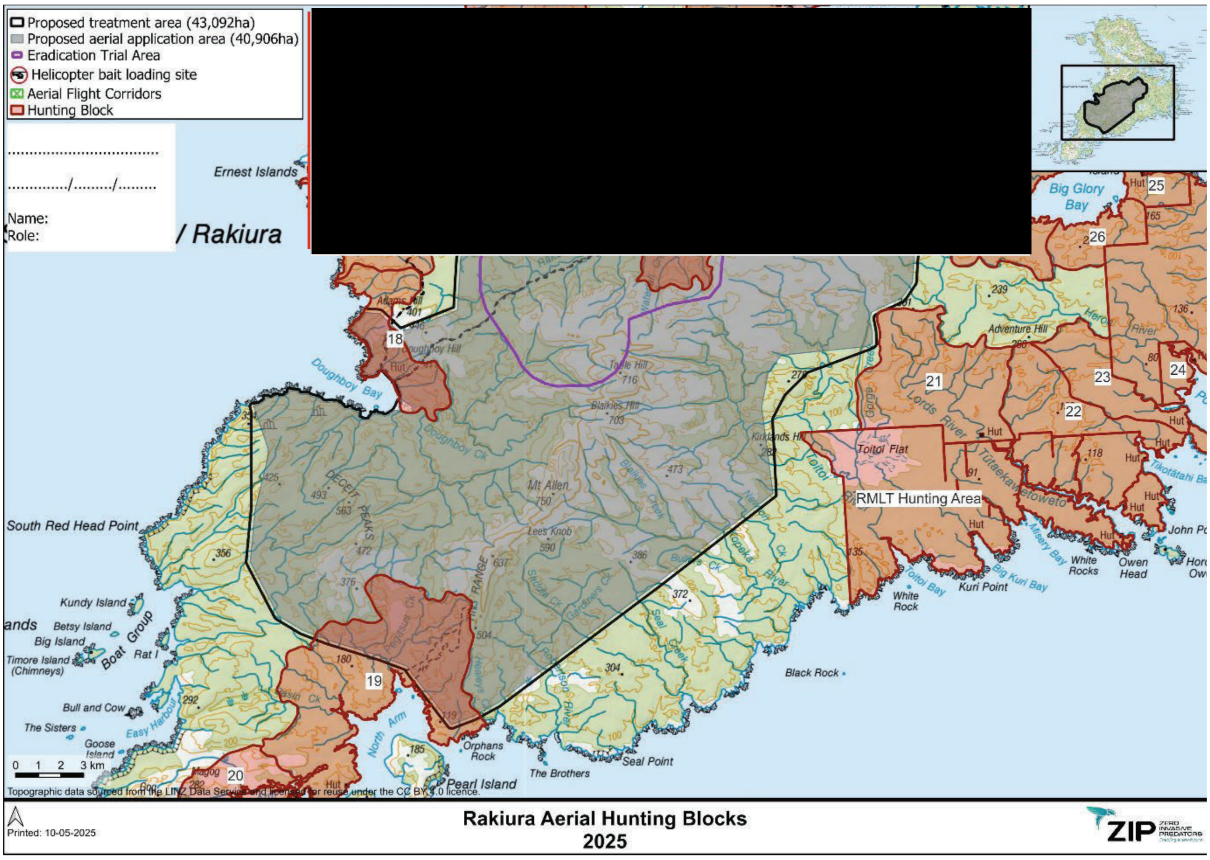

Proposed treatment areas
Eradication Trial Area (7,062ha)
Proposed aerial application area
Normal Bait - Eradication Trial - Block 1 (6,470ha)
Repellent Bait - Eradication Trial - Block 2 (2,055ha)
Helicopter bait loading site
Aerial Flight Corridors
Hunting Block
Name:
Role:
/ Rakiura
Ernest Islands
South Red Head Point
Kundy Island
Betsy Island
Big Island
Boat Group
Rat I
Timore Island (Chimneys)
Bull and Cow
The Sisters
Goose Island
Easy Harbour
North Arm
Orphans Rock
Pearl Island
The Brothers
Seal Point
Black Rock
White Rock
Kuri Point
Big Kuri Bay
Owen Head
Big Glory Bay
Adventure Hill
Table Hill
Blakiles Hill
Kirklands Hill
Mt Allen
Lees Knob
Toitoi Flat
Doughboy Bay
Doughboy Ck
Lords River
Tutaekaka
Browetc
Hut
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Printed: 10-05-2025
Rakiura Aerial - Eradication Trial Block Overview
2025
ZIP


Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Helicopter bait loading site
Aerial Flight Corridors
Hunting Block
Name:
Role:
/ Rakiura
[redacted]
Ernest Islands
Doughboy Bay
Mt Allen
Toitoi Flat
South Red Head Point
Kundy Island
Betsy Island
Big Island
Boat Group
Timore Island (Chimneys)
Bull and Cow
The Sisters
Goose Island
Easy Harbour
North Arm
Orphans Rock
Pearl Island
The Brothers
Seal Point
Black Rock
White Rock
Kuri Point
White Rocks
Owen Head
Lords River
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Printed: 10-05-2025
Rakiura Aerial Baiting
2025
ZIP

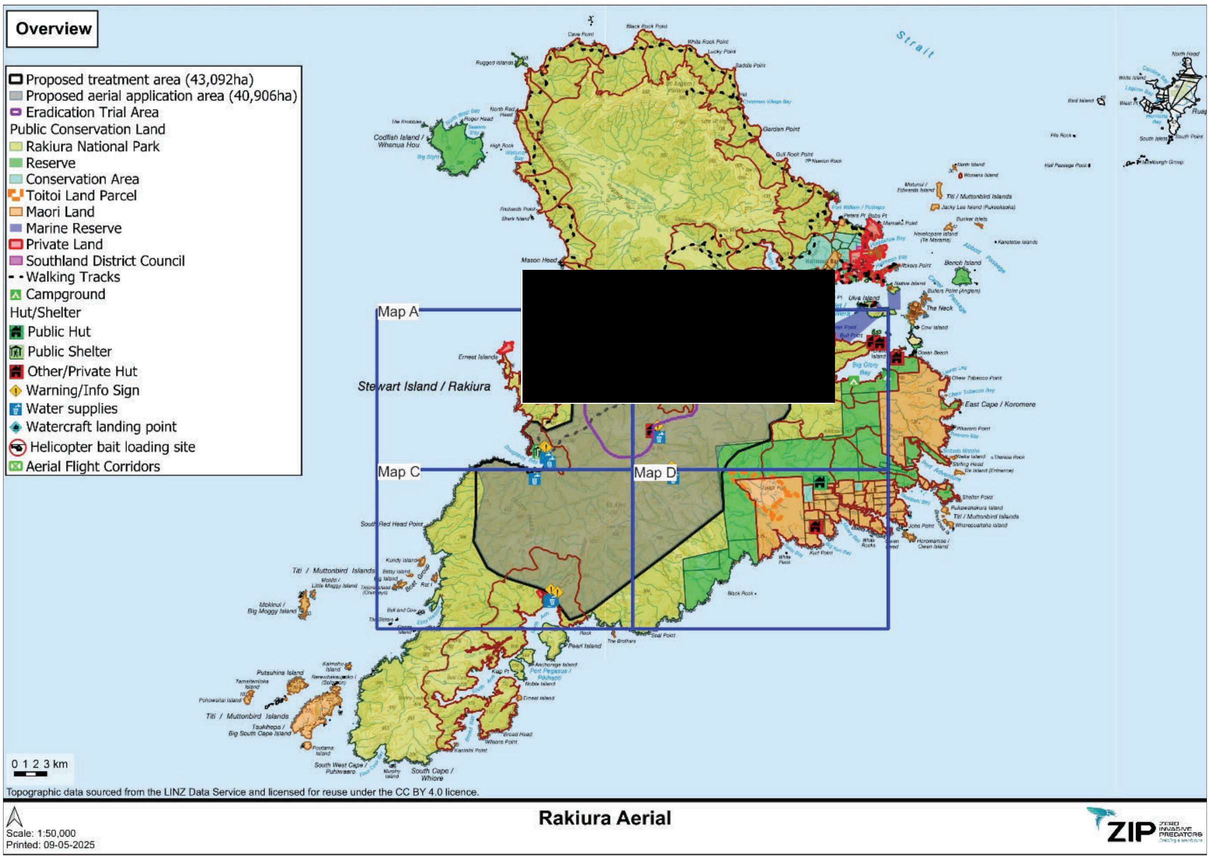

Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Bait loading site
Aerial Flight Corridors
Hunting Block
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Private Land
Hydro Parcel
Marine Reserve
Name:
Role:
[redacted]
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Printed: 10-05-2025
Rakiura Aerial Baiting - Land Stewardship
2025
ZIP

Other land type	Hectares
Hydro Parcel	13

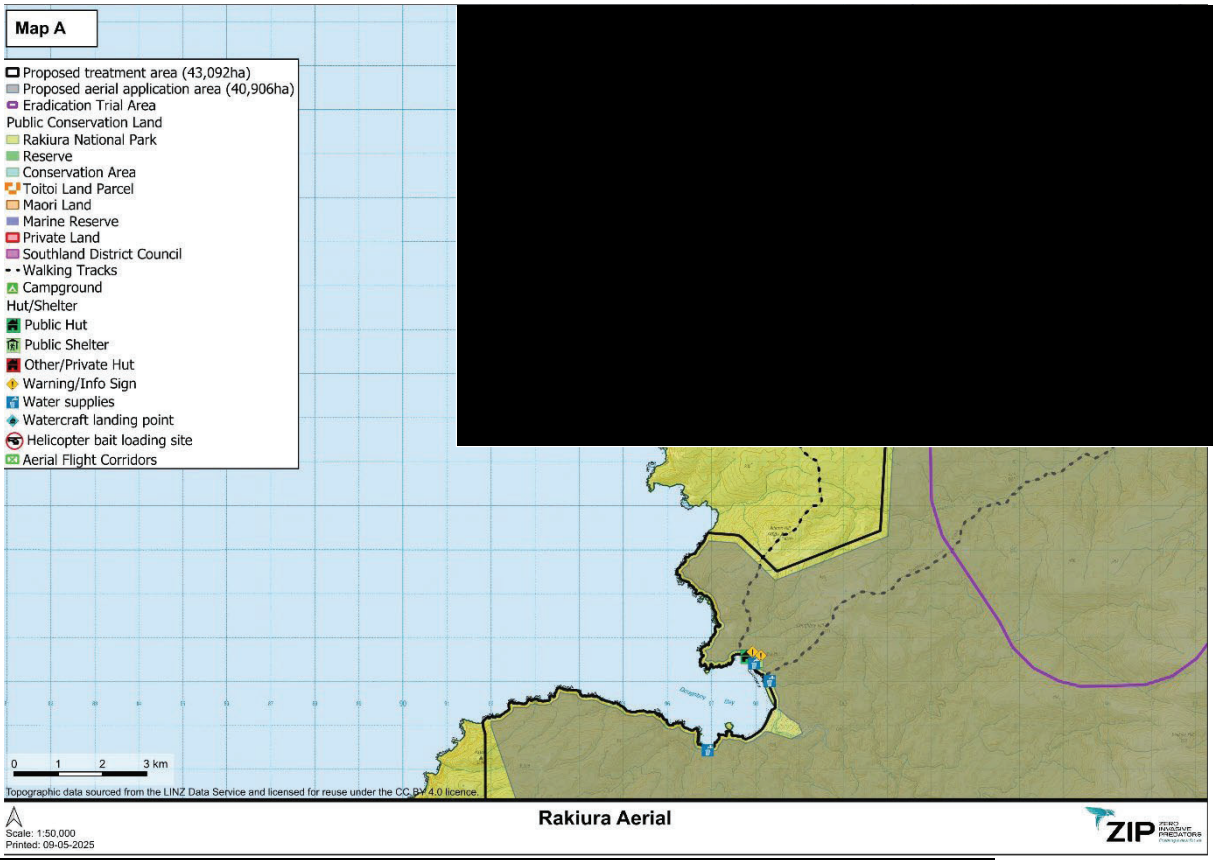
Public conservation land name	Legislation	Section	Hectares
Rakiura National Park	National Parks Act 1980	S.4 - National Park	42600
Eastern Rakiura Scenic Reserve	Reserves Act 1977	S19.1 - Scenic Reserve	479

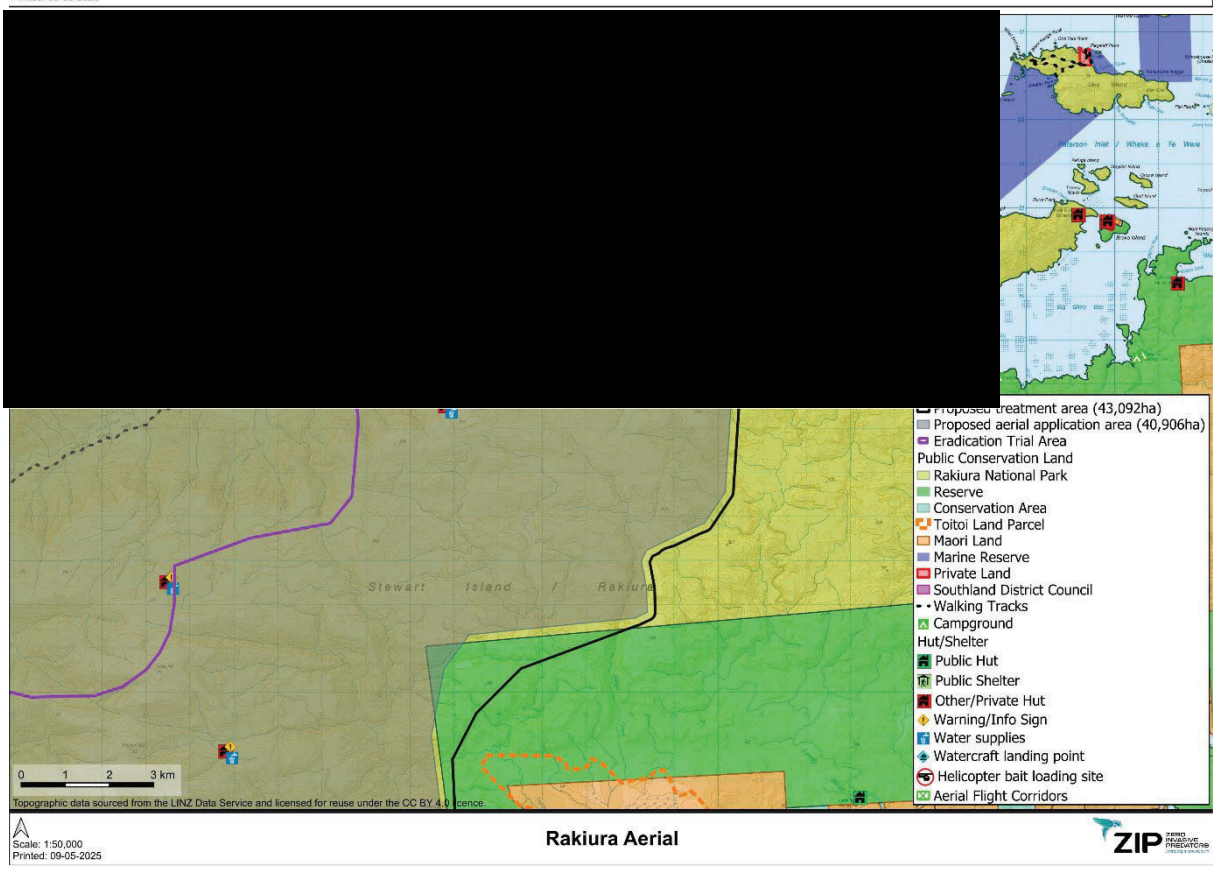


Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Helicopter bait loading site
Aerial Flight Corridors
Hunting Block
....
............/........./........
Name:
Role:
/ Rakiura
[redacted]
Ernest Islands
Big Glory Bay
South Red Head Point
Doughboy Bay
Mt Allen
Toitoi Flat
RMLT Hunting Area
Kundy Island
Betsy Island
Big Island
Boat Group
Timore Island (Chimneys)
Bull and Cow
The Sisters
Goose Island
Easy Harbour
North Arm
Orphans Rock
Pearl Island
The Brothers
Seal Point
Black Rock
White Rock
Kuri Point
Big Kuri Bay
White Rocks
Owen Head
John Point
Adventure Hill
18
19
20
21
22
23
24
25
26
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Printed: 10-05-2025
Rakiura Aerial Hunting Blocks
2025
ZIP



Overview
Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Marine Reserve
Private Land
Southland District Council
Walking Tracks
Campground
Hut/Shelter
Public Hut
Public Shelter
Other/Private Hut
Warning/Info Sign
Water supplies
Watercraft landing point
Helicopter bait loading site
Aerial Flight Corridors
[redacted]
Map A
Map C
Map D
Stewart Island / Rakiura
Codfish Island / Whenua Hou
East Cape / Koromere
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Rakiura Aerial
Scale: 1:50,000
Printed: 09-05-2025
ZIP


Map A
Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Marine Reserve
Private Land
Southland District Council
Walking Tracks
Campground
Hut/Shelter
Public Hut
Public Shelter
Other/Private Hut
Warning/Info Sign
Water supplies
Watercraft landing point
Helicopter bait loading site
Aerial Flight Corridors
0 1 2 3 km
Topographic data sourced from the LINZ Data Service and licensed for reuse under the CC BY 4.0 licence.
Scale: 1:50,000
Printed: 09-05-2025
Rakiura Aerial
ZIP


Stewart Island / Rakiura
Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Marine Reserve
Private Land
Southland District Council
Walking Tracks
Campground
Hut/Shelter
Public Hut
Public Shelter
Other/Private Hut
Warning/Info Sign
Water supplies
Watercraft landing point
Helicopter bait loading site
Aerial Flight Corridors
0 1 2 3 km
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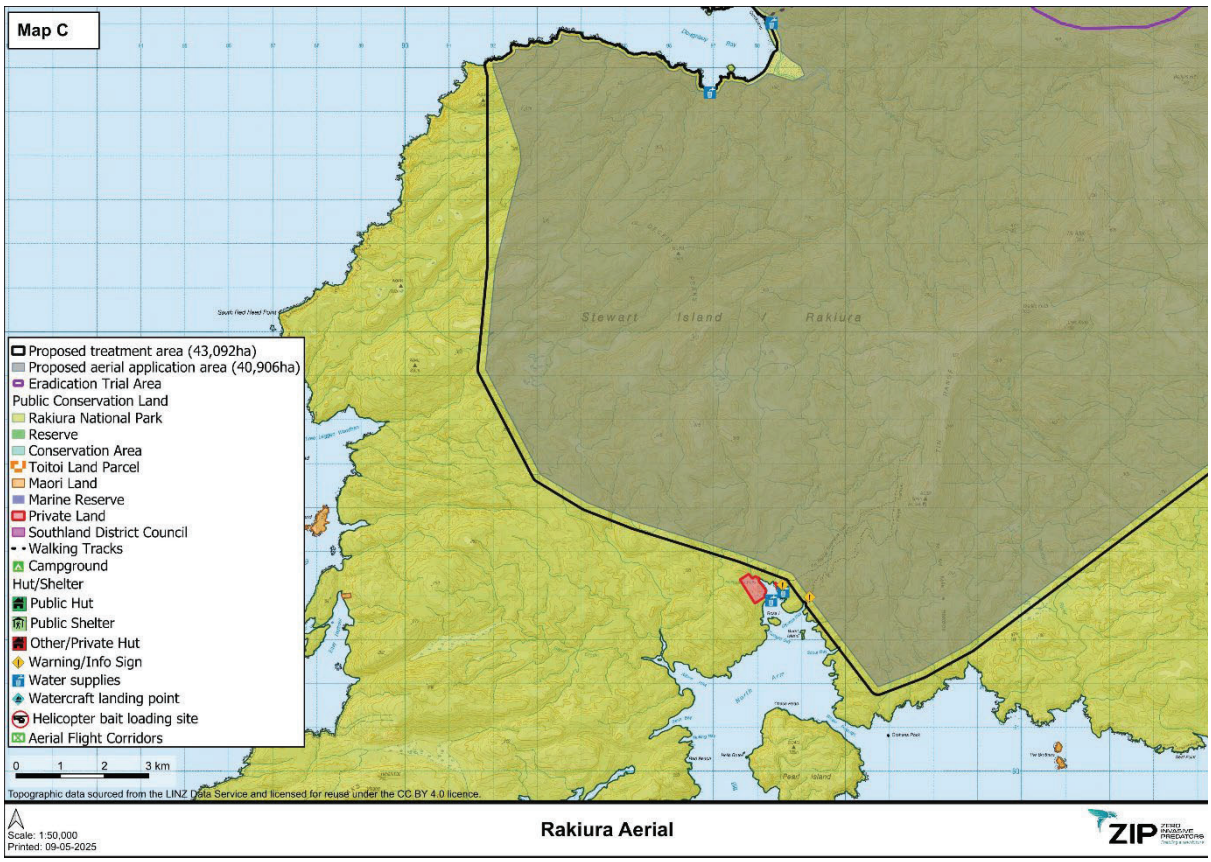
Scale: 1:50,000
Printed: 09-05-2025
Rakiura Aerial
ZIP


Map C
Stewart Island / Rakiura
Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Marine Reserve
Private Land
Southland District Council
Walking Tracks
Campground
Hut/Shelter
Public Hut
Public Shelter
Other/Private Hut
Warning/Info Sign
Water supplies
Watercraft landing point
Helicopter bait loading site
Aerial Flight Corridors
0 1 2 3 km
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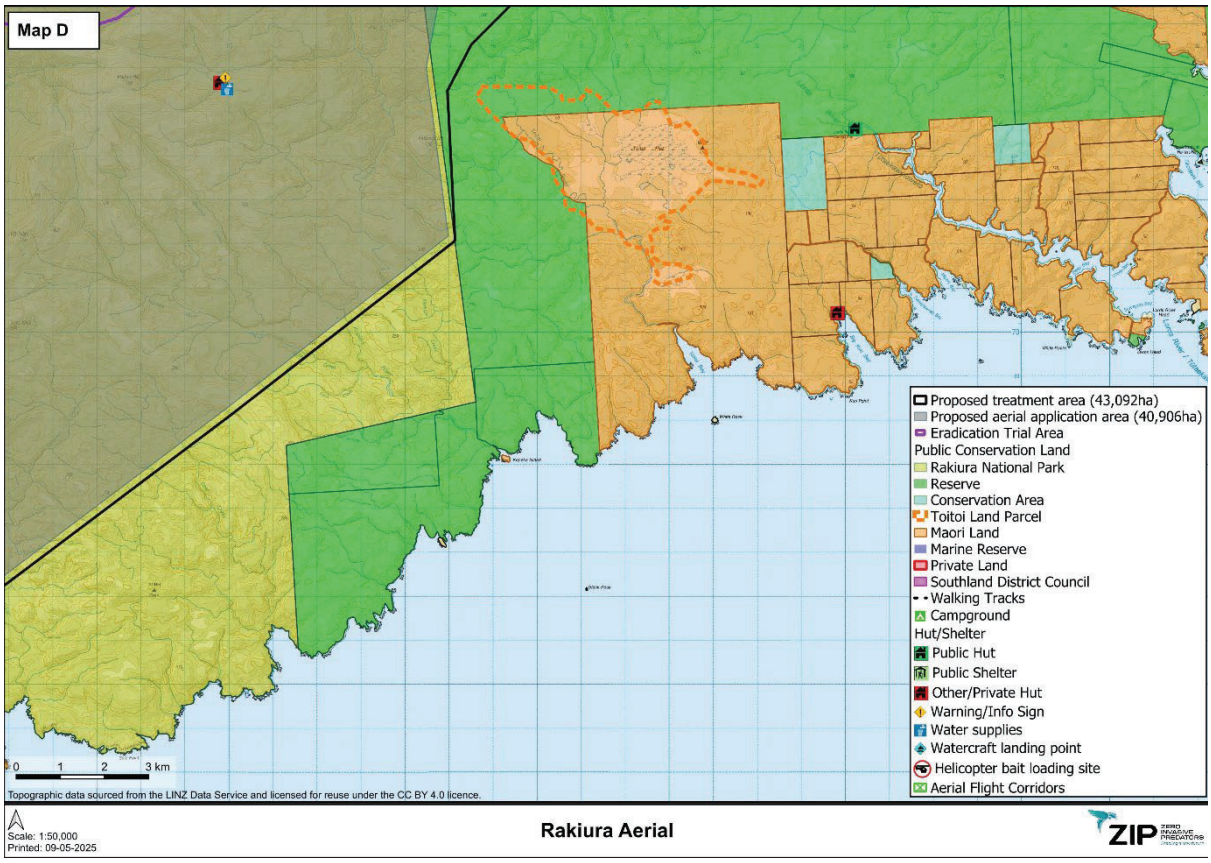
Scale: 1:50,000
Printed: 09-05-2025
Rakiura Aerial
ZIP


Map D
Proposed treatment area (43,092ha)
Proposed aerial application area (40,906ha)
Eradication Trial Area
Public Conservation Land
Rakiura National Park
Reserve
Conservation Area
Toitoi Land Parcel
Maori Land
Marine Reserve
Private Land
Southland District Council
Walking Tracks
Campground
Hut/Shelter
Public Hut
Public Shelter
Other/Private Hut
Warning/Info Sign
Water supplies
Watercraft landing point
Helicopter bait loading site
Aerial Flight Corridors
0 1 2 3 km
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Scale: 1:50,000
Printed: 09-05-2025
Rakiura Aerial
ZIP