

# Aerial 1080 Operational Plan Moehau 2021



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## Section A Project management

### 1. Project scope

This project includes possum and rat control in Moehau ecological area scheduled for spring 2021 as part of the Tiakina Ngā Manu (TNM) landscape scale predator control programme. 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
- Outcome monitoring

This project ends when lessons and recommendations from the Pestlink report have been followed up. This is expected to occur by December 2021.

### 2. Summary table of key documents

Document	Reference	Purpose
Project home page	DOC-6507597	A quick reference collation of documents created for or relevant to this project
Operational plan	DOC-6507600	A plan to guide the planning and implementation of the project.
Task List	DOC-6576025	Detailed list of DOC tasks and delegation to team members to complete the project.
Communication plan	DOC-6507603	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-6307714	Detail of work to be delivered by Project management company, part of project management contract agreement.
Statement of Works (SOW)	DOC-6397982	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--6507626	Register of conditions and performance standards to be met by the project;
Action Plan bait application	DOC-6576978	A collation of planning needed on bait application days

### 3. Objectives and targets

#### Outcome target

*To protect and maintain the health and integrity of the forest community within this ecosystem*

Forest health will be assessed using possum susceptible species as indicators.

To improve the breeding success of North Island Robin, Kereru, North Island Kaka, and to protect Archeys and Hochstetters frogs

#### Result target

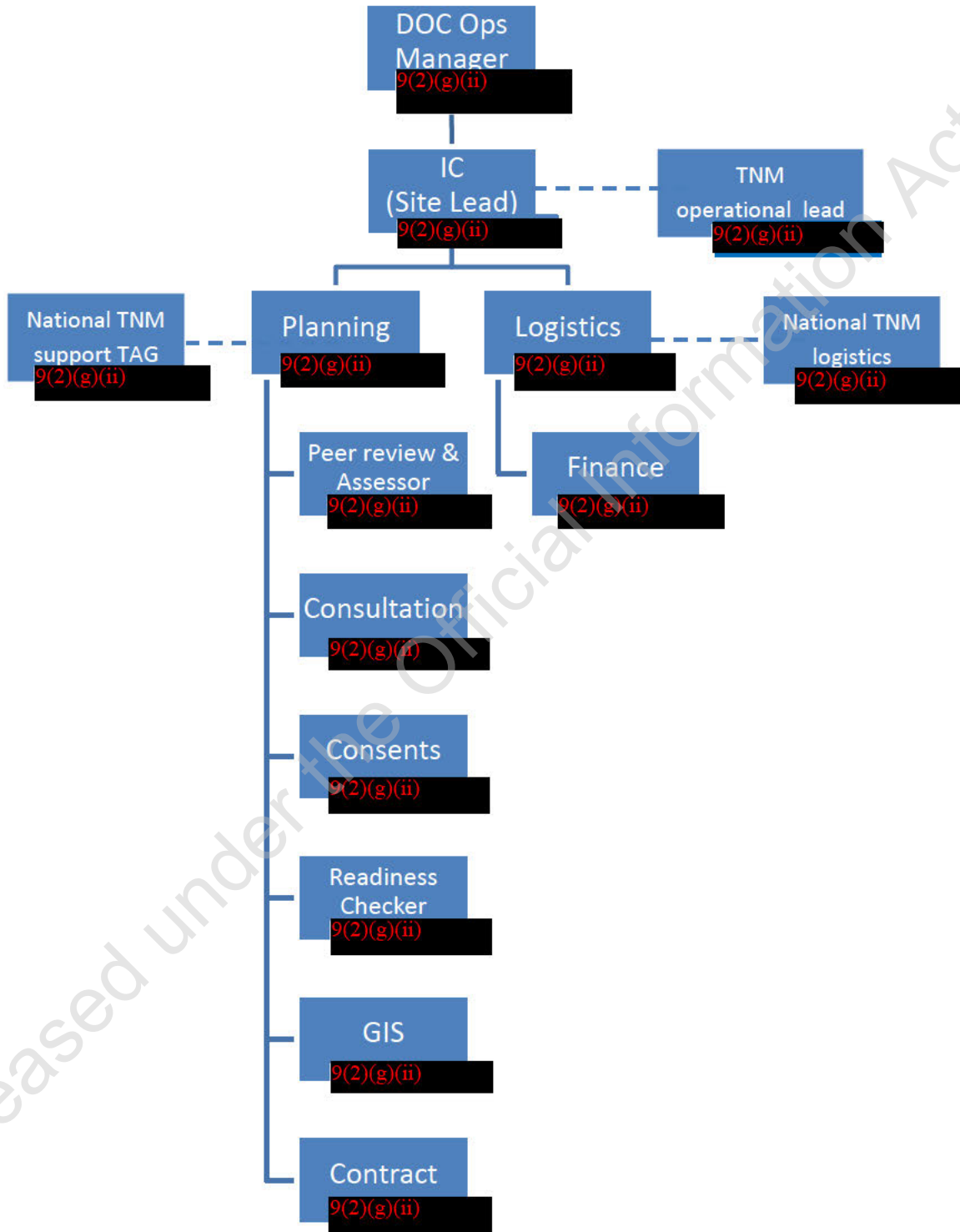
The result targets for this operation will be:

- a residual wax tag index of less than 1% (2 possums per 100 wax tag-nights) by 30 November 2021.
- Tracking tunnel index for rats less than 5% by November 2021

#### 4. Project team

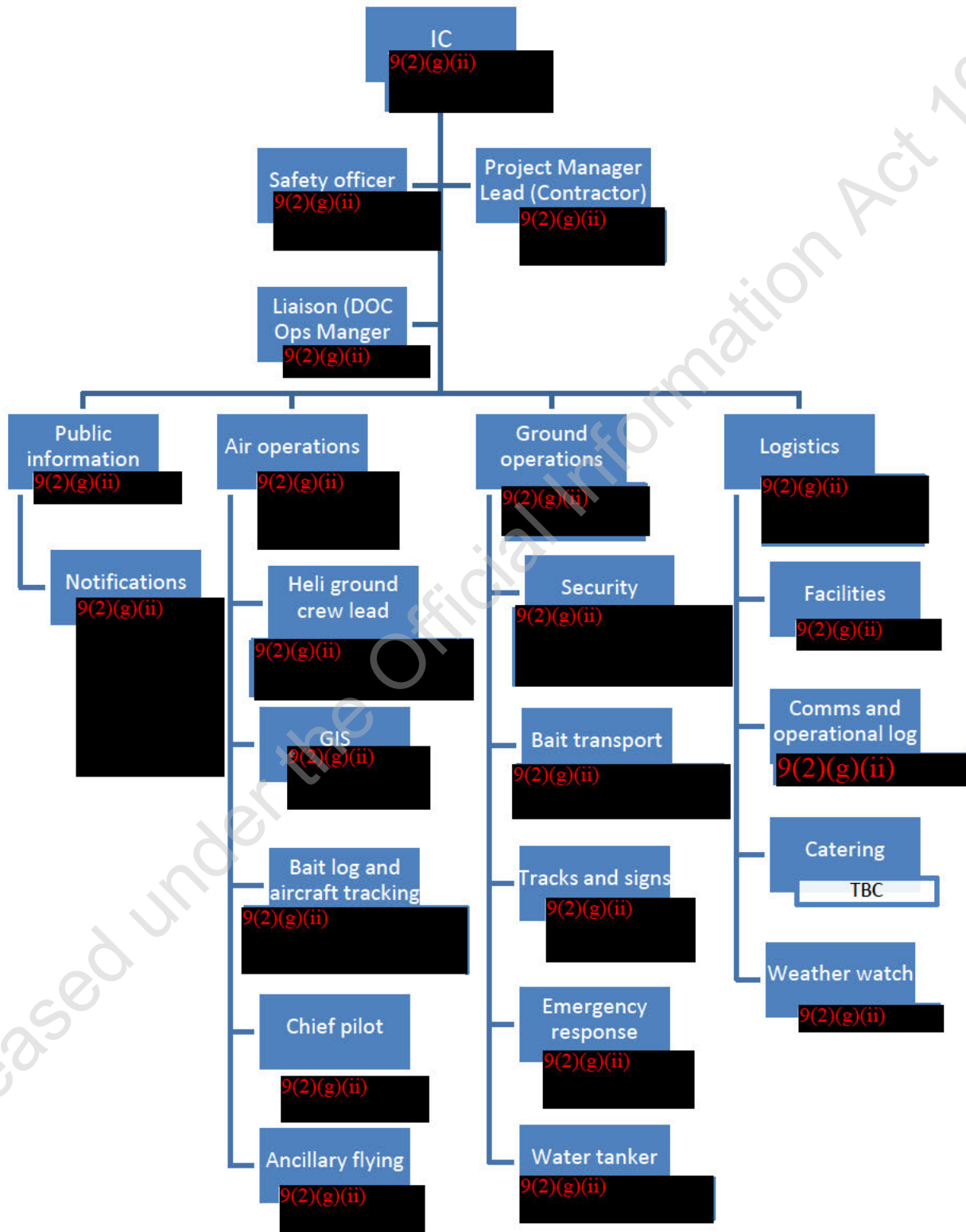
##### Planning/Pre-Operational phases

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 TNM Lead	To coordinate and support TNM operations across Regions.	Monitor progress, mentor and support site leads. Troubleshoot and build capacity. Transfer lessons to/from other operations.

National TNM Logistics	Provide Nationally contracted services and supplies to operations.	Bait supply, aerial works contractors, bucket calibrations, National security contracts.
National TNM TAG	Support TNM 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

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## 5. Contracts

9(2)(g)(ii) have been contracted to project manage this operation. 9(2)(g)(ii) have sub-contracted 9(2)(g)(ii) to undertake the aerial application of bait and 9(2)(g)(ii) to transport the bait 9(2)(g)(ii) to the loading site 9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii) to provide security at the loading zone 9(2)(g)(ii) are approved contractors on the TNM national contractor panel.

9(2)(g)(ii) worked on this block previously, in the 2012/13 operation, under contract to DOC.

TNM logistics will order the bait and have it transported from the factory to the 9(2)(g)(ii) store in 9(2)(g)(ii)

9(2)(g)(ii) the lead 9(2)(g)(ii) will liaise with 9(2)(g)(ii) Site Lead for DOC. 9(2)(g)(ii) will supervise the contract and ensure that all standards are met. Contract details are described in the Work Allocation [DOC-6307714](#) and SOW [DOC-6397982](#)

## 6. Consents required

Public Health Permission is required from Waikato District Health Board to apply the toxic bait.

DOC permission is required 9(2)(g)(ii). The application will be assessed by 9(2)(g)(ii) TNM Operations Support.

9(2)(g)(ii)

Consents from Thames Coromandel District Council are required for treating paper roads within the treatment area. The council consents will be obtained by DOC.

## 7. Consultation

Iwi

Relevant consultation and engagement are with all Iwi within the Hauraki Collective

- Ngāi Tai ki Tamaki
- Ngāti Hako
- Ngāti Hei
- Ngāti Maru
- Ngāti Pāoa
- Ngāti Porou ki Hauraki
- Ngāti Pūkenga
- Ngāti Rāhiri Tumutumu
- Ngāti Tamaterā
- Ngāti Tara Tokanui
- Ngāti Whanaunga
- Te Patukirikiri

As well as other Iwi/hapu who that have interest in the area

- Ngati Huarere
- Ngati Rongo U

This will include meetings, visits, phone calls and emails.

#### Adjoining landowners/occupiers

9(2)(g)(ii)

#### Key stakeholder groups

9(2) pig hunting groups 9(2)(a) have interest in this area for pig hunting.

### 8. Monitoring

Water monitoring will only take place if required by Waikato Health and /or landowners that are taking drinking water with the operational block have requested it.

Pre-Operational possum monitor will be carried out by a contractor selected from the TNM monitoring panel this monitor we be using wax tags over 10 lines to NPCA standards within the Moehau operational area.

A rat monitor will be carried out by staff using 140 tracking tunnels spread over 14 lines.

### 9. Timeline and Milestones

This project aims to protect native flora and fauna from rats, possums and stoats. To achieve this the toxic baiting is scheduled to take place July to October of that year. To achieve this the project must be ready for implementation (prefeed baiting) by 1 July. 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 30 June 2021
3. Prefeed baiting complete by 1<sup>st</sup> September 2021
4. Toxic baiting complete by 1<sup>st</sup> October 2021
5. Operational Report complete by 15<sup>th</sup> December 2021

## 10. Project risks and mitigation

Risk	Consequence	Likelihood	Mitigation
Weather prolonging operations	Delay operation, second pre-feed required	Moderate	Timing of the operation will be important as if left too late end September early October the weather patterns can be very unpredictable
Protesters	Delay operation	High	Work with TNM security team, NZ Police and contractor
Bait to site	Delay operation	High	Transport plan and work with TNM security team, NZ Police and contractor
Contractor availability	Delay operation	Moderate	Good communication and working closely with the contractor monthly meetings

## 11. Project debrief and reporting

An operational debrief will be carried out on completion of the pre-feed application, and prior to the toxic run and a final debrief will be carried out within 3 weeks of completion of the toxic application

A Pestlink report for this project will be prepared and verified within 5 months of the completion of bait application 9(2)(g)(ii)

## 12. Project Compliance register

[DOC-6507626](#)

## Section B Operational

### 13. Site description

Moehau mountain is sacred to local iwi, its full name is Te Moengahau-o-Tamatekapua – the windy sleeping place of Tamatekapua, the Te Arawa chief and steersman who had a strong association with the mountain.

The summit of Moehau is the burial place of the great chief Tamatekapua who arrived in New Zealand with the first Polynesian navigators. The prow of his canoe is said to have been laid with him on Moehau.

With other iwi having strong connection and association with Moehau.

There are numerous Pa sites and middens on the coastal headlands and beaches surrounding Moehau, during the musket wars local tribes fought on these beaches and headlands, many of these sites are now Wahi Tapu.

An amazing variety of unique and rare plants and animals live here sharing a diverse range of habitats from coastal cliffs to sub-alpine grasslands. Moehau contains coastal pōhutukawa, kauri, tawa (*Beilschmiedia tawa*) and podocarp forests, within lowland and montane bioclimatic zones. Within Moehau forest can be found internationally significant ecological values including locally endemic Weta and stag beetles, Archey and Hochstetters frog, Coromandel striped gecko, Pateke (Brown Teal), Kaka, Bellbird, Grey Warbler, Kakariki (parakeets), Brown Kiwi, Long tailed and Shining cuckoo, North Island Robin, Kereru and Morepork.

Moehau is the northern limit for many southern montane species such as mountain toatoa and mountain cedar (pahautea). Moehau requires ongoing protection for nationally threatened and regionally rare plant species. Flora values include *Peraxilla tetrapetala* (Red mistletoe), *Prasophyllum hectorii* (swamp leek orchid), *Caladenia bartlettii*, *Pittosporum virgatum*, *Celmisia incana*, *Veronica punicea* (Hebe) and *Brachyglottis kirkii* var. *kirkii* (Kirk's daisy).

Land form values include the nationally unique Paritu pluton, a geographical feature of volcanic origin. Wind and rain sculpture the rugged peak of Moehau that rises steeply from the sea. At 892m it is the highest point on the Coromandel Peninsula.

#### Conservation Values

Moehau is a notable area which has been identified under the Natural Heritage Management System (NHMS) as a high priority site. This area is prioritised for management because of the high conservation values. In some instances, this relates to threatened biodiversity such the nationally vulnerable Coromandel Brown Kiwi *Apteryx mantelli*. In other cases, there are unique ecosystems present, such as the sub-alpine grasslands at the top.

#### *Threatened species*

##### Coromandel brown kiwi

Coromandel Brown Kiwi (CBK) are present in the operational area. CBK's are the rarest of the North Island brown kiwi taxa with an estimated 1700 birds across the Coromandel. Kiwi densities are highest in the northern regions of the Peninsula, making Moehau an important area for CBK.

### North Island Robin

About 100 North Island Robin from Pureora Forest park were released into the Moehau area, 61 of those birds were released on public conservation land on the eastern side of Mt Moehau at Stony Bay in 2009 and 2011. 30 birds were released in 2009 on 300 ha of privately owned land just south of Stony Bay. Moehau is the only place in the Coromandel region to have North Island Robin.

### Long-tailed bats

Long-tailed bats have been found in the Moehau ecological area and are likely the only native land mammal on the Coromandel. Searches continue for short-tailed bats, but none have been found to date.

### Threatened plants

*Brachyglottis kirkii* var. *kirkii* (Kirk's daisy) At Risk – Declining

*Peraxilla tetrapetala* (Red mistletoe) At Risk - Declining

*Prasophyllum hectorii* (swamp leek orchid) At Risk - Declining

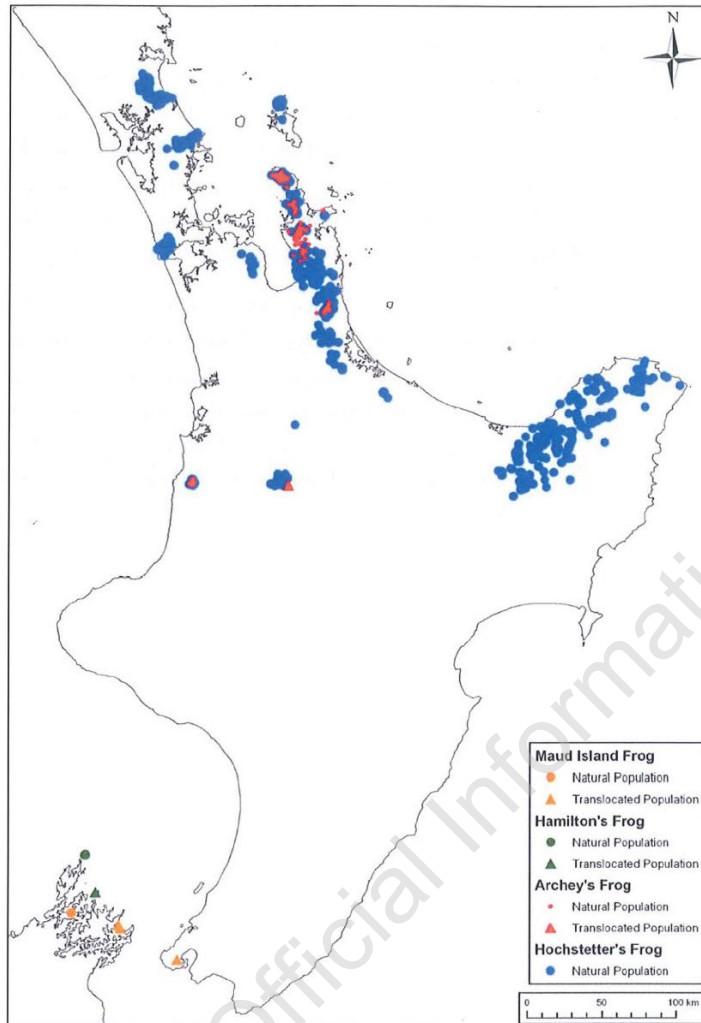
*Caladenia bartlettii* At Risk - Naturally Uncommon

*Pittosporum virgatum* At Risk - Naturally Uncommon

*Veronica punicea* (Hebe) At Risk - Naturally Uncommon

### Archey's frog

The Coromandel Peninsula is home to much of the threatened Archey's frog range. The only other places they are found include a small coastal forest block in the King Country, Maungatautari and captive facilities such as the Auckland Zoo. The Coromandel represents the national stronghold for Archey's frog (see below).



It has been proven that rat predation has a significant impact on Archey's frog populations, and that rat control has a positive impact (see Whareorino research).

### *Iconic species*

In addition to high priority threatened species, there are also iconic species throughout the block, the Moehau stag beetle, is one of the more unusual species that inhabit the mountain.

### *Kauri*

The Moehau ecological area includes impressive stands of Kauri. Kauri are a significant species, influencing community species composition through alterations to soil chemistry. Kauri are under threat from kauri dieback disease (*Phytophthora Taxon Agathis*), which has recently been confirmed on the Coromandel for the first time.

### *Freshwater fish*

Native freshwater fish have been recorded throughout the several catchments in the operational area including short jawed kokopu, banded kokopu, inanga, long finned and short finned eels, koura, torrent fish and red finned bullies inhabit the streams.

## Threats

Animal pest species present in the reserve are stoat, weasel, Norway rat, ship rat, mouse, hedgehog, cat, pig, rabbit and possum.

Introduced pests are having major impacts on Moehau flora and fauna. Possums are causing mortality of canopy trees like rata and kohekohe through defoliation. Possums have been managed since 1989 with trapping starting in Port Jackson and then moving southward. The first toxin used between 1995 and 2000 was brodifacoum in bait stations set out on a grid approximately 150m apart. DOC discontinued the use of brodifacoum in 2000 and possums have been controlled around parts of Moehau using other toxins approximately every 4 years, with a first aerial application of 1080 in 2012 over 4500ha achieving a result of 0% RTC.

Ship rats are abundant and together with mice, are opportunists, eating both vegetation and animal matter. Rats predate heavily on Weta, beetles, spiders, moths, stick insects, cicadas, native snails and frogs, slugs, and lizards. Seasonal food includes bird eggs and chicks. Rat numbers increased on Moehau once Mustelid trapping was initiated in 1995, rat control begun with trapping using victor traps in northern stony bay in 2002 and 2003 (Murphy 2004) followed by Diphacinone in bait stations laid on a grid approximately 75m apart in 2004. Since then low rat numbers have been maintained at Stony Bay using a 75m grid system over 1500 ha (reduced to 600ha in 2015 and then increased to 1000ha in 2017) using toxins including 1080.

Mustelids (weasels, ferrets and stoats) and feral cats are present. All four species threaten conservation values by preying on vertebrate and invertebrate populations, but the most destructive is the stoat. Stoats are adept tree climbers and, along with ship rats, will predate birds, nestlings, eggs, lizards and invertebrates within the canopy.

Mustelid especially stoats are affecting kiwi through chick predation, in 2000 a trapping grid was set up on Moehau covering approximately 1800hec, 1600 traps are laid 200m apart on selected ridges, roads etc. Since trapping was introduced to Moehau kiwi chick survival has averaged 77% of all chicks produced by tagged Kiwis over the years 2000 to 2005. (De Monchy2005).

Hedgehogs are also present, mainly preying on native invertebrates. The extent to which hedgehogs, rodents and pigs affect snails at this site is unknown.

Goats were first controlled by government hunters on Moehau in 1956 but sustained control at regular intervals did not occur until 1981 with their final removal occurring in 2005, since then only a couple of goats have been shot and their presence or how they got there was unknown, but most likely from neighbouring farms.

Cattle from neighbouring farms have historically grazed the accessible parts of Moehau have caused considerable damage to the understorey. In the last 10 years, boundary fences have been erected around most of the mountain except in the south west corner made up of the Tehope, Ongohi and Urarima catchments. Grazing is still occurring in parts of these areas and a completed boundary fence around Moehau will be a longer-term goal.

Cats are controlled around Moehau to protect Pateke from predation, 43 traps have been maintained since April 2011.

Pigs are present on Moehau and cause damage to the forest ecosystem. A seasonal ballot has been the control method for pigs in recent years.

Considerable forest modification has occurred in the last 100 years, goats, possums and cattle have depleted many species on the forest floor and in the canopy. Accessible areas of the mountain were logged or cleared for farmland also in this period, parts of the land cleared for farming is now regenerating.

#### Issues

Treatment area is under Treaty claim, which could raise some sensitive issues between local Iwi and the Department.

Some of the boundaries in the area around the operational area do have unfenced or sensitive areas, this concern could be mitigated through consultation or movement of the operational boundary and or stock.

There is the potential for torrential rain to wash carcasses down rivers and onto the coast from Fantail Bay to Te Hope, in such an event the area will be monitored and the public informed.

The Coromandel has an anti-1080 movement, so opposition to this operation will be likely, and we would expect protest action at the loading site.

Neighbouring landowners rely on rainwater for domestic supply, and streams for stock water.

Conflict with local pig hunting groups and the lack of access after the operation will be considered during the consultation process, bait and carcass monitoring will be put in place in order to possibly shorten the stand down period of the area after the operation is conducted.

#### Other management at the site

##### Past management:

Year	Operation Name	Control Method	Pestlink Ref.
2020-2021	Ship rat Control in Te Mauri o Moehau 2020	Baitstation	NYC
2017-2018	Possum, Ship rat Control in Te Mauri o Moehau 2017	Aerial 1080	1718WHT01
2015-2016	Ship rat Control in Te Mauri o Moehau	Baitstation	1516HAU03
2012-2013	Possum, Ship rat Control in Te Mauri o Moehau 2013	Aerial 1080	1314HAU01
2006-2007	Possum, Ship rat Control in Moehau West - Cape Colville	Hand lay – Feratox, Feracol	0607HAU02
2005-2006	Possum, Ship rat Control in North East Moehau rat block	Baitstation – 1080, Racumin	0506HAU01
2004-2005	Possum Control in Te Mauri o Moehau - Urarima (2004/05)	Baitstation - 1080	0405HAU09
2003-2004	Goat Control in Moehau (2003/04)	Hunt - Ground	0405HAU12
2003-2004	Ship rat Control in Northeast Moehau rat block	Hand lay - Racumin	0405HAU07



2003-2004	Ship rat Control in Northeast Moehau rat block (2003/04)	Baitstation – Diphacinone Hand lay - Racumin	0405HAU06
2002-2003	Goat Control in Moehau (2002/03)	Hunt - Ground	0405HAU10
2002-2003	Ship rat Control in Northeast Moehau rat block (2002/03)	Trap - Kill	0405HAU05
2002-2003	Possum Control in Te Mauri o Moehau (2002/03)	Baitstation - Feratox	0304HAU03
2002-2003	Ship rat Control in Te Mauri o Moehau - Poley Shag Bay/Stock Track	Trap - Kill	0203HAU22
2001-2002	Possum Control in Te Mauri o Moehau 2001/02	Baitstation - Feratox	0809HAU02
2000-2001	Possum Control in Te Mauri o Moehau - Urarima (2000/01)	Hand lay – Cyanide Trap - leghold	0405HAU08
2000-2001	Goat Control in Moehau 2000/01	Hunt - Ground	0203HAU31
2000-2001	Possum Control in Te Mauri o Moehau - Western Block	Baitstation - Talon	0203HAU13
2000-2001	Possum Control in Te Mauri o Moehau - Fletchers Bay Block	Baitstation - Feratox	0203HAU12
2000-2001	Possum, Ship rat Control in Te Mauri o Moehau - Mt Homebush	Baitstation - Cholecalciferol	0203HAU01
1999-2000	Possum Control in Te Mauri o Moehau- Eastern Block	Baitstation - Talon	0203HAU02
1998-1999	Goat Control in Moehau 1998/99	Hunt - Ground	0203HAU32
1998-1999	Possum Control in Te Mauri o Moehau - Mt Homebush-Fletcher Bay/Ongohi	Baitstation - Talon	0203HAU14
1997-1998	Possum Control in Te Mauri o Moehau (1997/98)	Baitstation - Talon	0304HAU12
1997-1998	Goat Control in Moehau 1997/98	Hunt - Ground	0203HAU41
1996-1997	Goat Control in Moehau 1996/97	Hunt - Ground	0203HAU42
1995-1996	Goat Control in Moehau 1987 - 1996	Hunt - Ground	0203HAU43
1986-1987	Goat Control in Moehau 1979 - 1986	Hunt - Ground	0203HAU44

There is no other management planned for this site at this stage.

## 14. Control Design

This project is focussed on the aerial application of 1080 baits over the treatment area of 4,674ha. Toxic bait is aiming to be delivered in ideal weather conditions during the month of July/August 2021 and within 20 days of pre-feeding. This time has been chosen as the best time to conduct the operation as possums and rats are more vulnerable to poisoning in winter/early spring where alternative food sources are seasonally low. If delayed by bad weather a decision on the need to repeat pre-feeding will be taken beyond 40 days.

Future pest control operations in this area will depend on initial control levels achieved from this operation and on the rate of re-invasion from adjacent areas. It is expected that the possum population will take at least five years before they begin to have a measurable effect on the indicator species. Aerial operations are planned to be carried out every four years over the next 50-year period, with 800ha within the Moehau ecological area being treated for rats, occurring once yearly except the year of aerial treatment

One application of 1.5 kg (6 gram baits) per hectare of pre-feed cereal bait will be sown by helicopter for the aerial operation. Following the pre-feed, 1080 will be applied at a rate of 1.5 kg (6 gram baits) per hectare for the Moehau ecological area. The timing of the sowing of the 1080 baits will require a weather window of three fine nights to achieve maximum toxin uptake.

## 15. Method(s)

The pesticide uses are:

- 0.15% 1080 cereal pellets aerially applied.

Pre-feeding at 1.5kg/ha will be followed within 20 days by toxic baiting at the same rate.

## 16. Block and treatment area boundaries

The Moehau treatment area is located at the northern tip of the Coromandel peninsula. The nearest township is Colville, approximately 7 km south of the operational boundary and Coromandel Town is 55km by road. The operational area is approximately 4,674ha and has sea on the eastern boundary and farmland (private and conservation concession) to the north and west. The Southern boundary is in private ownership and consists largely of forested communally owned land and farms.

There are four DOC campgrounds adjacent to treatment area, 2 in the west, 1 in the north and 1 in the east. The eastern campground Stony Bay will be closed for the duration of the operation.

The road to the Stony Bay campground is a 7km windy gravel road owned by Thames-Coromandel District council. Road is used by campers and leasee farmer. We will seek consent to have a 50m buffer from Stony Bay road supported by trickle sowing.

The treatment boundaries are available in:

Q:\GIS\_Users\Whitianga\Data\Biodiversity\Possum\_Control\Moehau\_Possum\_Control\Aerial 2021-22\Shapefiles

9(2)(a)

9(2)(g)(ii)

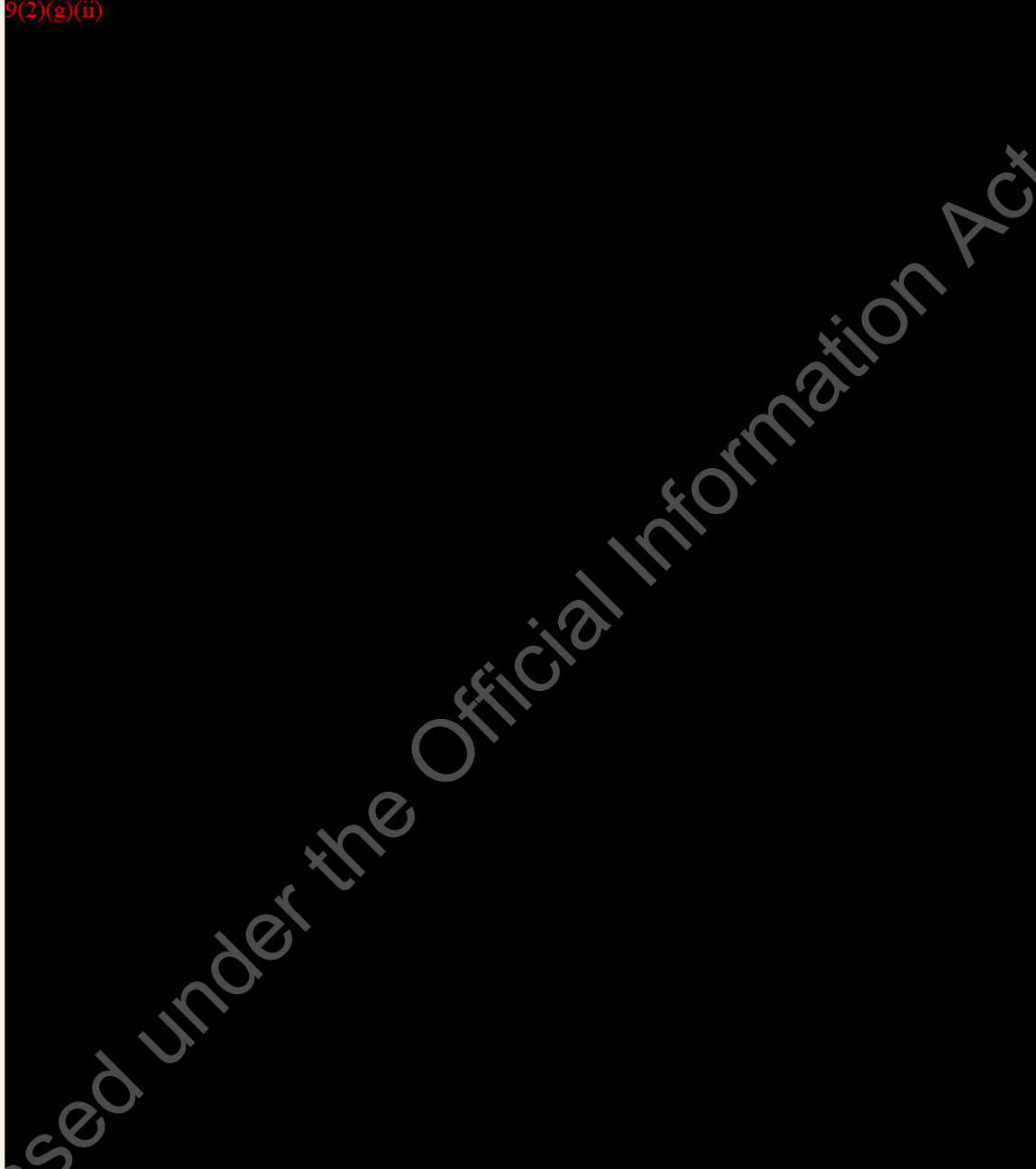
There is a section of boundary in the south-west that is not fenced, the cattle graze the DOC forest within the treatment area. Negotiation is required 9(2)(a) to remove the stock from these areas and graze alternate paddocks until caution period is over.

Sensitive boundary in the north 9(2)(g)(ii) that has stock will have an 100m buffer supported by trickle sowing.

9(2)(g)(ii)



9(2)(g)(ii)



Moehau - RFQ  
Prefeed - 6 g @ 1.5 kg per ha  
Toxic - 6 g @ 1.5 kg per ha  
Total area: 4,674 ha  
Aerial Predator Control 2021



NZGD 2000 New Zealand Transverse Mercator  
Not for publication nor navigation | 1:50,589  
Crown Copyright Reserved | NZTopo, © Crown  
DOC, Geospatial Services | 28/05/2020  
New Zealand Government

© DOC, Auckland/Project/Te Papa Atawhai, Crown Copyright, Programme 2020/RFQ, Moehau/RFQ, Moehau/RFQ, Moehau

## 17. Loading sites & other set up

9(2)(g)(ii)

An incident control point will be established in a caravan located within sight of loading operations.

## 18. Security

9(2)(g)(ii)

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. 9(2)(g)(ii)

## 19. Public safety

The communication plan outlines all the target audiences for notification about the operation. The record contained within that plan shows who was contacted when and by what means. A public notice in the Hauraki Herald will be placed two weeks before our 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.

Stony Bay campground will be closed for the duration of the operation. There are three public walking tracks within the treatment area, Fantail Bay track, Stony Bay mountain bike track and the Coastal walkway track. The coastal walkway and Mountain bike track will be closed during the toxic bait application and baits will be cleared from all tracks as soon as practical after toxic baiting.

9(2)(g)(ii)

There are two campgrounds which take their water from within the treatment area and are with the 3km radius, these water supplies will be disconnected.

- Stony Bay campground
- Fantail Bay campground

## 20. Bait, storage and transport

### Bait Type

This project will use 0.15% 1080 Pellets using RS5 16mm (6 g) baits. Baits will be 'double' cinnamon lured (0.3%). A total of 7.8 tonne of prefeed and 7.8 tonne of toxic bait is required for this operation. Prefeed bait is required to be in 9(2)(g)(ii) store by 1<sup>st</sup> July with toxic available by 25<sup>th</sup> July. Bait will be bulk packaged in 300kg bags with 2 bags per pallet.

## Bait Transport

Bait will be loaded by forklift from 9(2)(g)(ii) store onto 9(2)(g)(ii) truck and trailer the morning prior to each application. 9(2)(g)(ii)

Loads will be covered by waterproof tarpaulins.

## 21. Incidents and emergencies

An emergency response plan will be developed 9(2)(g)(ii) and will be included in the Action Plan for

- Suspected poisoning
- Over sows (Bait misapplication)
- Dropped bucket
- Fire
- Medical emergency
- Unauthorised personal/public on loading site
- Mechanical issues

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 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 hold CSL's for 1080. The over sow scenario will be practiced during the prefeed baiting.

## 22. 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.

## 23. Bait spreading

### Pre-feeding

Pre-feeding using non-toxic RS5 cinnamon lured 16mm (6g) bait will begin in the first suitable weather window on or after 1st July. Pre-feed baits will be sown at a rate of 1.5kg/ha using 9(2)(g)(ii) helicopters taking loads of 600kg. 9(2)(g)(ii) sowing buckets have a calibrated useable swath width of 180m so GPS flight lines will use this spacing.

## Toxic Baiting

Toxic baiting will follow at the first available weather opportunity at least 10 days after pre-feeding. Toxic bait will be sown at 1.5kg/ha. A forecast of at least 2 fine nights with less than 10mm accumulated rainfall for that period will be required.

## 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. 9(2)(g)(ii) will supply a loader and driver, baits will be loaded by a 5 person 9(2)(g)(ii) team off the truck and trailer. The loading system will be debriefed at the end of pre-feeding and improvements made for the toxic 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 from the poison store and used on the operation.
- A log of all communications and actions during and incident should one occur.

## 24. Demobilisation

### Clean up and disposal

Empty bags will be bundled into wool fadges on site and returned to the 9(2)(g)(ii) store for later disposal. The 9(2)(g)(ii) truck decks will be inspected and swept before back-loading empty pallets and bags to the 9(2)(g)(ii) store at the completion of toxic baiting. The helicopter bucket and loader 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 9(2)(g)(ii) store for cleaning.

## Section C Task specifications

Task specification    Install warning signs			
Operation: Moehau Aerial 1080		Dates:	
This task is delegated to:		9(2)(g)(ii)	
Crew	Phone	Radio Ch	
9(2)(g)(ii)			
Details of task			
Install warning signs to meet the standards below.			
Check warning sign location			
Update sign register with locations of any extra signs			
Included in scope			
Preparing signs			
Install warning signs			
Outside Scope			
Sign register maintenance			
Inspection and maintenance of signs			
Standards			
<input type="checkbox"/> Signs located as per sign register.			
<input type="checkbox"/> GPS locations of signs collected and recorded.			
<input type="checkbox"/> Additional signs are installed where necessary and entered into sign register			
<input type="checkbox"/> Signs are mounted in plain view for people entering block at eye level where possible and securely fastened			
<input type="checkbox"/> Signs are not attached to existing DOC recreation signage in the area.			
<input type="checkbox"/> Signs are visible and legible at all times.			
Equipment			
<input type="checkbox"/> Hammer & galv nails		<input type="checkbox"/> Wooden stakes, posts & backing boards	
<input type="checkbox"/> Portable radio		<input type="checkbox"/> Spade & rammer	
<input type="checkbox"/> Battery drill and screws		<input type="checkbox"/> GPS with waypoints loaded	
<input type="checkbox"/> Signs		<input type="checkbox"/> Maps	
Attachments			
<ul style="list-style-type: none"> <li>Map of treatment area</li> </ul>			
Contacts	Phone	Radio Ch	
Incident Controller	9(2)(g)(ii)		
Ground Operations Mgr	9(2)(g)(ii)		
Safety officer	9(2)(g)(ii)		



Task specification    Check warning signs		
Operation: Moehau Aerial 1080		Dates:
This task is delegated to:		9(2)(g)(ii)
Crew	Phone	Radio Ch
9(2)(g)(ii)		
9(2)(g)(ii)		
Details of task		
Check warning signs to meet the standards below. Checks to be carried out weekly for the first two weeks, monthly until caution period finished		
Check warning sign location		
Update Pesticides App with locations of any extra signs		
Included in scope		
Check warning signs Sign register maintenance Inspection and maintenance of signs		
Outside Scope		
Preparing signs		
Standards		
<input type="checkbox"/> Signs located as per sign register. <input type="checkbox"/> GPS locations of signs collected and recorded. <input type="checkbox"/> Additional signs are installed where necessary and entered into sign register <input type="checkbox"/> Signs are mounted in plain view for people entering block at eye level where possible and securely fastened <input type="checkbox"/> Signs are not attached to existing DOC recreation signage in the area. <input type="checkbox"/> Signs are visible and legible at all times.		
Equipment		
<input type="checkbox"/> Hammer & galv nails <input type="checkbox"/> Portable radio <input type="checkbox"/> Battery drill and screws <input type="checkbox"/> Signs	<input type="checkbox"/> Wooden stakes, posts & backing boards <input type="checkbox"/> Spade & rammer <input type="checkbox"/> GPS with waypoints loaded <input type="checkbox"/> Maps	
Attachments		
<ul style="list-style-type: none"> <li>• Map of treatment area</li> <li>•</li> </ul>		
Contacts	Phone	Radio Ch
Incident Controller	9(2)(g)(ii)	
Ground Operations Mgr	9(2)(g)(ii)	
Safety officer	9(2)(g)(ii)	

Task specification Establish Loading site			
Operation: Moehau Aerial 1080		Dates:	
This task is delegated to:		9(2)(g)(ii)	
Crew	Phone	Radio Ch	
9(2)(g)(ii) (TBC)			
Details of task			
Establish the loading site to meet the standards below before baiting.			
Included in scope			
Marking out work zones & signage Establishing shelters and facilities Furniture, power supplies Liaison with Security			
Outside Scope			
Vegetation removal and road works Comms and computer equipment Bait and fuel supplies			
Standards			
<input type="checkbox"/> Site established as per diagram. <input type="checkbox"/>			
Equipment			
<input type="checkbox"/>		<input type="checkbox"/>	
Attachments			
<ul style="list-style-type: none"> <li>Map of Loading site</li> <li></li> </ul>			
Contacts	Phone	Radio Ch	
Incident Controller	9(2)(g)(ii)		
Air Operations Mgr	9(2)(g)(ii)		
Security	9(2)(g)(ii)		

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Task specification <b>Aerial Contractor Planning Visit</b>		
<b>Operation:</b> Moehau Aerial 1080	<b>Dates:</b>	
<b>This task is delegated to:</b>	9(2)(g)(ii)	
<b>Crew</b>	<b>Phone</b>	<b>Radio Ch</b>
9(2)(g)(ii)		
9(2)(g)(ii)		
<b>Details of task</b>		
Establish a common understanding of how the bait will be flown.		
<b>Included in scope</b>		
<ul style="list-style-type: none"> <li>• Checking contractor's equipment against that shown in SOW</li> <li>• Discussion of aerial application boundaries, treatment area boundaries and exclusion zones</li> <li>• Discussion of loading site location and layout</li> <li>• Communications</li> <li>• Safety hazards and issues</li> <li>• Logistics of fuel, equipment and helicopter positioning</li> </ul>		
<b>Outside Scope</b>		
Bucket calibration		
<b>Standards</b>		
<input type="checkbox"/> The contractor understands what is expected of him/her in the contract schedule. <input type="checkbox"/> Loading site location and probable layout are agreed. <input type="checkbox"/> Communication channels and time requirements for signalling drop days are understood by both parties. <input type="checkbox"/> Aerial application boundaries and proposed flight line orientation are agreed <input type="checkbox"/> Safety standards are agreed, and flying hazards identified <input type="checkbox"/> Equipment presented in the quote is serviceable <input type="checkbox"/> GPS/GIS & radio systems proposed for use (Contractor or DOC supplied) are compatible and fit for purpose.		
<b>Equipment</b>		
<input type="checkbox"/> Set of operational maps showing the final and correct treatment area boundary and aerial application boundary	<input type="checkbox"/> The Operational plan <input type="checkbox"/> Photos of loading sites <input type="checkbox"/> Contract & SOW	
<b>Attachments</b>		
•		
<b>Contacts</b>		
	<b>Phone</b>	<b>Radio Ch</b>
Incident Controller	9(2)(g)(ii)	
Air Operations Mgr	9(2)(g)(ii)	
GIS	9(2)(g)(ii)	

**Task specification Track and Road Clearing**

**Operation:** Moehau Aerial 1080 **Dates:**

**This task is delegated to:** 9(2)(g)(ii)

Crew	Phone	Radio Ch
9(2)(g)(ii) (TBC)		

**Details of task**

Clear baits from designated walking tracks

Day 1: Stony Bay road, Coastal Walkway, Mountain Bike Track, Fishermans Track and Fantail Bay track to be walked and cleared of baits going over the track

Day 2 –tracks to be repeated

**Included in scope**

- Clearing baits off designated walking tracks and road
- 

**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.
- 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**

- |   |   |
|---|---|
| <input type="checkbox"/> Gloves         | <input type="checkbox"/> First Aid Kit        |
| <input type="checkbox"/> Key Fact Packs | <input type="checkbox"/> Portable radio & PLB |
| <input type="checkbox"/> Plastic bags   | <input type="checkbox"/> MSD sheets           |

**Attachments**

- Map of Treatment Area and Aerial Application Area

**Contacts**

	Phone	Radio Ch
Incident Controller	9(2)(g)(ii)	
Ground Operations Mgr	9(2)(g)(ii)	

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## Task specification for: Carcass and Bait Monitoring

Operation: Moehau Aerial 1080 Operation

Dates:

This task is delegated to:

9(2)(g)(ii)

Crew

Phone

Radio Ch

9(2)(g)(ii)

9(2)(g)(ii)

### Details of task

Carry out carcass and bait monitoring

### Included in scope

- Two possum carcasses and 3 - 6 toxic baits are to be monitored for decay at each of two locations indicated on the map attached to this task specification.
- Possums have been sourced off-site & are in the freezer in the workshop.

### Outside Scope

- Two monitoring sites are to be set up
- At the first opportunity and within 48hrs of the toxin operation a CSL holder and accompanying staff member are to navigate to the monitoring points, set up cages and place 1 possums and 3-6 1080 baits inside.
- Mesh cages should be located under vegetation that is most typical of the densest cover in the treatment area and on coldest aspect (southern) where possible.
- The baits must be enclosed within the small mesh cages inside of the large cage at each site.
- Both possum carcasses and baits MUST be in contact with the ground.
- Photos are to be taken directly above (looking down at) the cages once set-up is complete. Subsequent photos must be taken from the same position.
- GPS and mark sites with flagging tape so cages can be easily located for later checks.

### Standards

- A CSL holder MUST supervise the set-up of Carcass & Bait Monitoring at each site
- Gloves MUST be worn when handling baits
- Staff MUST have instant access to the product Label
- Staff MUST have access to the safe handling sheet, MSDS and product label (all carried by team leader)
- Caged possum carcasses MUST be in contact with the ground
- Cage must be securely pegged to the ground to prevent access from pigs
- Baits MUST be in contact with the ground, in a small mesh cage within the larger cage
- Bait must be enclosed with wire mesh no coarser than 8x8mm holes

<input type="checkbox"/> Carcasses may be sourced from anywhere but must be fresh (or frozen when fresh) and have no major open wounds.		
<b>Equipment</b>		
<input type="checkbox"/> 1080 Cereal baits – 3 - 6 for each monitoring site <input type="checkbox"/> 2 Possum Carcasses <input type="checkbox"/> 2 large Mesh Cages <input type="checkbox"/> 2 small Mesh Cages <input type="checkbox"/> Pegs <input type="checkbox"/> Mallet <input type="checkbox"/> Cable ties	<input type="checkbox"/> GPS –loaded with co-ordinates for monitoring sites (see: <input type="checkbox"/> Map <input type="checkbox"/> Camera <input type="checkbox"/> Ziplock bags <input type="checkbox"/> Gloves <input type="checkbox"/> High Vis Vests <input type="checkbox"/> Pink flagging	
<b>Attachments</b>		
<ul style="list-style-type: none"> <li>Map</li> </ul>		
<b>Contacts</b>	<b>Phone</b>	<b>Radio Ch</b>
Incident Controller	9(2)(g)(ii)	
Ground Operations Mgr	9(2)(g)(ii)	

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