

**Application for Use of Pesticide for  
Rodent Control in the Southern  
Abel Tasman National Park**

**May 2019**

**Name of joint  
applicants:**

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Limited

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<b>1. INTRODUCTION</b>	<b>2</b>
<b>2. OUTCOMES AND TARGETS</b>	<b>6</b>
<b>3. CONSULTATION AND CONSENTS</b>	<b>8</b>
<b>4. METHODS</b>	<b>9</b>
<b>5. FURTHER INFORMATION</b>	<b>11</b>
<b>APPENDIX 1: DOC PERFORMANCE STANDARDS</b>	<b>12</b>
<b>APPENDIX 2: MAPS</b>	<b>16</b>
<b>APPENDIX 3: COMMUNICATION RECORD</b>	<b>21</b>
<b>APPENDIX 4: CONSENTS</b>	<b>22</b>
<b>APPENDIX 5: ASSESSMENT OF ENVIRONMENTAL EFFECTS</b>	<b>23</b>

## 1. Introduction

### 1.1 Overview

In response to the 2019 major beech mast event and anticipated elevated rat numbers, an aerial 1080 operation for rat control is proposed for the southern part of Abel Tasman National Park, in an area from the Inland Track (Castle Rock to Holyoake Clearing) north to the southern reaches of Awaroa Inlet (see map Appendix 2).

This pest control will help protect the park's birdlife including South Island robins, bellbirds, tūi, wild and translocated kākā, kākārīki (yellow-crowned parakeet) and whio, as well as recently-released pateke, from attack during their critical spring nesting period, increasing adult and chick survival.

Other native fauna recorded in the area that may benefit from the proposed operation include native land snails *Powelliphanta hochstetteri hochstetteri* and *Rhytida o'connori* and other invertebrates.

This operation is to conform to the existing SOP and guidance for the application of 1080 baits in areas where kea may be present.

It is proposed that the following pesticide uses will be applied:

- Pesticide Use #1, 1080 loaded at 0.15% in 6g RS5 cereal pellets sown aerially, at a rate of 2kg/ha (standard operation).
- Pesticide Use #2, 1080 loaded at 0.15% in 6g RS5 cereal pellets hand laid, at rates of 2kg/ha.

Preferred timing of the operation is from 29<sup>th</sup> April (1<sup>st</sup> prefeed) ending 31 May, 2019.

Permission is sought for an operation starting on 29<sup>th</sup> April 2019 and ending on or before 28<sup>th</sup> April 2020.

### 1.2 Treatment area

Southern Abel Tasman National Park.

11,449 Hectares (PHU/DoC consent area)

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**1.3  
Treatment  
block(s)**

Southern Abel Tasman National Park Aerial – 11,449 Hectares.

Treatment Block 1: Rodent control area – 11,449 hectares.

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**1.4  
Geographical  
location**

The area to be treated lies in the southern half of Abel Tasman National Park, south of Awaroa Inlet to the Inland track between Canaan, Castle Rocks and Holyoake Clearing. The Pikikiruna Range forms the western boundary and generally the inland side of the Abel Tasman Coast track is the eastern boundary. This includes the upper parts of the Wainui, Awapoto, Awaroa and Falls River catchments

The nearest town is Motueka, 16 km to the south. The coastal village of Marahau is 3km from the southern operational boundary.

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**1.5  
Adjacent land  
tenure and  
uses**

Adjacent land to the treatment area is mostly part of the Abel Tasman National Park. There are only 2-3 spots where privately owned land is nearby.

The closest privately owned land is on the south east side of the Torrent River catchment, approximately 50m from the consent boundary. In most other cases there is a 200m to 2km buffer to any other private land.

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**1.6  
Nearby  
residential  
areas or  
facilities**

There are no permanent dwellings within the operational area.

The nearest semi-residential areas are the settlement on the south side of the Awaroa Inlet (1.4km from the consent boundary) and the small township at Torrent Bay (400m from the consent boundary).

These are predominately baches or temporary residences.

The treatment area does not affect any water supply catchments servicing these areas.

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**1.7  
Community  
interests**

There are several DoC tracks in the treatment area, along with 6 huts/shelters and 3 campsites included or immediately adjacent - refer to accompanying maps.

As the operation is to be conducted over the late autumn/early winter period, visitor use should be low.

The Inland track and Wainui tracks are not expected to have many, if any, users and the Wainui hut and Moa Park shelters are low use facilities most of the year.

The Awaroa school track and Old Steam Engine track are likely to have minimal, if any, use.

The Falls River track, behind Torrent Bay township, and Cleopatra's Pool track are likely to have high use. As both are an in/out track, we will have a ranger stationed at each track entrance during the sowing operation to warn people of the work and the presence of toxic baits.

The Abel Tasman Coast track, from Tonga Quarry to the northern side of Bark Bay, is to be sown over and cleared of baits. Whilst sowing is occurring staff will be stationed at each end to warn visitors and dissuade entry.

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**1.8  
Management  
history**

The Department of Conservation has undertaken possum control variously throughout parts of the Abel Tasman National Park, which include the Abel Tasman-Project Janszoon treatment area, since 2003.

In 2003 a DOC aerial 1080 possum control operation (3 kg/ha non-prefeed) was conducted throughout a 4,436 ha area focussed on the Evans Ridge/upper Wainui River area as part of a contiguous ground based control in the Canaan Downs S.R. area and Takaka Valley faces of ATNP.

In 2008 the above area was included in a 6,300 ha DOC aerial 1080 possum control operation (2 kg/ha 1080 and 1 kg/ha prefeed) that extended the north boundary with the addition of c. 1,000 ha at the upper Awaroa estuary area.

In 2014, in a parallel operation to the BfoB programme, an aerial 1080 possum and rat control operation (2 kg/ha 1080 and 1 kg/ha prefeed) was conducted over 12,359 hectares of the southern part of the park.

In 2017, again in a parallel operation to the national BfoB programme, an aerial 1080 rat control operation (2 kg/ha

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1080 [with 5% swath overlap] and 2 kg/ha prefeed) was conducted over 9,649 hectares of the southern part of the park. This area was wholly within the 2014 treatment area.

The 2019 proposed treatment wholly includes that 2017 operational area and much of the 2014 operational area.

Areas on the east of the Awaroa River and within the DOC Golden Bay Area have been included in the DOC Golden Bay Area possum block system for commercial fur recovery. Intermittent fur recovery activity has taken place in these areas (notably around Awaroa). This area was included in a Northern Abel Tasman aerial operation, targeting possums, that was undertaken in 2016.

Project Janszoon has a fixed site kill trap programme for possum control occurring over 400 hectares around the Awaroa settlement area.

A community based possum (and stoat) trapping programme has operated between Boundary Bay and Akersten Bay over the past decade, delivered by the Abel Tasman Birdsong Trust. This is currently being extended into coastal areas as far north as Bark Bay.

All of the operational area is also under sustained control for stoats using a trapping network.

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## 2. Outcomes and targets

### 2.1 Conservation outcome(s)

This operation is primarily to protect a range of native bird species and threatened land snails.

Guiding control principles for the Project Janszoon restoration programme, and which direct this aerial operation proposal, are;

1. The key factor for selection of the recommended control method is the primary targeting of ship rats (*Rattus rattus*), during a beech mast with pre-existing high rat numbers, for the protection of existing common (e.g. SI robins, tomtits, yellow crowned parakeet) and threatened (e.g. kea, kaka) bird species, as well as the threatened land snails *Powelliphanta hochstetteri hochstetteri* and *Rhytida o'connori*.
2. Rat--focused control will be required over a minimum of c 9715 ha to ensure an adequate period of protection from reinvasion during critical breeding months.
3. The rat--focused control will be centred on the upland (> 600m ASL) zone of the management area. This is due to the predictions of rat population dynamics based on beech mast events and where beech (*Nothofagus*) species are the forest canopy dominant(s) at this area.
4. The rat--focused control will be initiated by rat population triggers and could occur at intervals which are less than the frequency of possum--control requirements for forest canopy/sub--canopy and threatened plant protection.

Additionally this work will support the aerial possum control that was carried out to the north of this area in 2016.

### 2.2 Target(s)

The objective of the Project Janszoon operation is to lower the rodent population to below 2% TTI - refer to AEE.

Specifically for this operation;

- *Rats are controlled to <2% TTI immediately following a control operation*
- *Below 600m altitude, rats remain <30% TTI, six months after treatment*
- *Above 600m altitude, rats remain <10% TTI, six months after treatment*

This will be assessed by the following means;

- The treatment area will be monitored using a network of 32 tracking tunnels, within two weeks after toxin application, and quarterly thereafter (i.e. August 2019, November 2019, February 2020, May 2020, etc).
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### 3. Consultation and consents

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#### 3.1 Consultation

As part of the development and implementation of the Project Janszoon Trust and its activities over the last 7 years, extensive consultation has been carried out by DoC and Project Janszoon staff. This has included;

- Iwi and rūnanga.
- Concessionaires and tourism operators.
- Local communities and interest groups.
- Operational neighbours.
- Local government and Public Health.
- Local schools.

It is within this environment of strong public interaction and information sharing that the proposed Southern Abel Tasman National park aerial operation sits.

For details of the specific actions carried out for this operation refer to Communications Plan & Consultation Record attached.

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#### 3.2 Consents

The following documents are attached as Appendix 4:

- Proof of public health permission application <sup>1</sup>
  - Copies of landowner/occupier consents (if obtained in writing)
  - Other:
  - Other:
- 

<sup>1</sup> The complete public health permission (including application form) must be sighted before DOC permission will be granted.

## 4. Methods

### 4.1 Treatment block 1 Southern ATNP rats

#### Pesticides—**aerial**

Pesticide use	Target pest
<b>HSR002424</b> 1080 0.15% in ACP RS 5 cereal pellet aerially applied	Rats

<b>Brand name of pesticide</b>	ACP RS 5, 1080 @ 1.5g/kg, 6gm cereal pellets
<b>Lure/mask (&amp; %)</b>	Cinnamon, 0.3% w/w
<b>Type of pre-feed (lure/dye)</b>	ACP RS5 6gm cereal pellets lured with cinnamon, un-dyed
<b>Number of pre-feeds (if any)</b>	One
<b>Sowing rates for pre-feed</b>	Prefeed 2.0kg/ha (+/- 10%) with 10% swath overlap
<b>Sowing rates for toxic bait</b>	Toxic 2.0kg/ha (+/-10%) with 10% swath overlap
<b>Other details about this method</b> The bulk of the area will be broadcast spread with some sensitive boundaries trickle fed e.g. ATNP coastline.	

#### Pesticides—**handlaying operations**

Pesticide use	Target pest
<b>HSR002424</b> 1080 0.15% in ACP RS 5 cereal pellet handlaying	Rats

<b>Brand name of pesticide</b>	ACP RS 5, 1080 @ 1.5g/kg, 6gm cereal pellets
<b>Lure/mask (&amp; %)</b>	Cinnamon, 0.3% w/w
<b>Type of pre-feed (lure/dye)</b>	ACP RS5 6gm cereal pellets lured with cinnamon, un-dyed
<b>Number of pre-feeds (if any)</b>	One at 2 kg/ha (+/- 10%)
<b>Sowing rates for pre-feed</b>	Prefeed 2.0kg/ha (+/- 10%)
<b>Sowing rates for toxic bait</b>	Toxic 2.0kg/ha (+/-10%)
<b>Other details about this method</b> To be used as required treating exclusion area buffers.	

**4.2  
Justification  
for  
proposed  
method:**  
Southern Abel  
Tasman.

This operation is part of an on-going multi-year large-scale possum and rat control programme funded by the private restoration initiative Project Janszoon. The imperatives for possum and rat control are described in the Project Janszoon Ecological Restoration Strategy (2012) where control of both these pests is required during both the Secure and Restore phases of the project. *Refer Project Janszoon Possum & Rat Control in Abel Tasman National Park, Operational Plan 2014-2024.*

The primary objective of this Southern Abel Tasman NP aerial operation is to control rats (namely ship rats, *Rattus rattus*) to reduce predation pressure on native birds, snails and invertebrates; and to help maintain and improve populations of highly vulnerable plant species and forest communities, and giant land snails in the area, through the associated by-kill of possums.

Rat control is fundamental for the protection of several iconic threatened species e.g. yellow crowned parakeet; and will reduce direct predation on a range of other native bird species such as SI robin and tomtits. The secondary kill on stoats will benefit such key species as kea and kaka.

This landscape-scale rodent control will augment and support intensive ground-based predator control at several high priority multi-pest management sites undertaken by Project Janszoon and DoC.

Monitoring of rats numbers across the treatment area has been ongoing since November 2012. Since the October 2017 aerial operation, which saw TTI plunge to +/- 2% TTI, rat numbers have been steadily rising and at last count (Feb 2019) were at a mean of 23% (range 19 to 27%). The Wainui/Evans Ridge site was at 20% in the February 2019 survey.

Aerially applied 1080 laced cereal bait is the only cost effective method of rat control in this area. This rationale has been fully explored in the AEE supplied in support of this work.

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## 5. Further information

### Details of contractor or principal

If the operation will be contracted to another company, or if this application is being made on behalf of a principle organisation please provide the following details:

<b>Company/organisation:</b>	Principal: Department of Conservation & Project Janszoon Trust Company Ltd  Contractor: Tasman Pest Control Ltd
<b>Contact person:</b>	DoC: § 9(2)(a)  TPCL: § 9(2)(a)
<b>Contact number:</b>	PO Box 97 Motueka 03 5281810  PO Box 17, Brightwater § 9(2)(a)

### Further information

Refer: *Abel Tasman Project Janszoon Rat and Possum Control AEE 2014.*

Refer: *Project Janszoon possum-rat control Operational Plan, 2014-2024.*

Refer: DOC-2612859 *Code of practice for aerial 1080 in Kea habitat.*

## Appendix 1: DOC Performance Standards

*Insert the appropriate sheet of Department of Conservation (DOC) Performance Standards for each pesticide use proposed for the operation. Complete all areas shaded grey on the sheet. This includes retaining the additional performance standards and information needs in the grey boxes that you propose for the operation.*

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<b>Pesticide Use #1</b>	<b>Sodium fluoroacetate 1.5g/kg Cereal pellet Aerial (0.15% 1080 Pellet)</b>	<b>Target Pests: Possums, Rats</b>
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<b>Location of operation</b>
<i>[Insert name of treatment block(s)/area here]</i>



<b>Caution Period</b>
The estimated caution period for this operation is <i>[assessor to complete]</i> months after last date of bait application and is subject to compulsory bait and carcass monitoring. This estimated caution period cannot be reduced to less than 4 months, and must be extended if the endpoints for monitoring have not been met at the end of the period.

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**Performance Standards**

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*Compulsory for **all** operations*

1. For operations targeting rats, prefeed with this pesticide use.
2. The DOC Code of practice for aerial 1080 in kea habitat [DOC-2612859](#) must be followed.
3. Flight paths to and from the bait loading zones by aircraft equipped with loaded or uncleaned bait sowing equipment must avoid: stocked paddocks, residential dwellings, and any other 'no fly zones' specified by consent providers.
4. An aircraft must not, when flying to or from the treatment area, fly over a public drinking water supply or waterway that is less than 100 metres upstream of a point of extraction from a water source for a drinking water supply (not being a water supply exclusively for stock).
5. For operations targeting possums, baits will have a mean size in excess of 6g and 95% of baits should weigh more than 4g.
6. The baits must be dyed green or blue.
7. The boundaries of the bait preparation and loading site are marked and loading site signs [docdm-181171](#) erected. At the end of every day of the operation (including the final day), the loading site and any storage area must be fenced so that people do not inadvertently enter the site and stock cannot gain access to the area. The fence and signs remain in place until you judge that there is no longer a risk to stock.
8. If there is any likelihood that farm stock has been exposed to 1080, the owner must be advised as soon as possible and stock removed from the area.
9. The product must only be used as specified on the manufacturer's product label.

*Compulsory for this operation (delete those that you won't be applying to your operation)*

10. Bait sowing rate must be no greater than 5kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes).
11. Designate a "Safety Officer" on loading site who audits and ensures adherence to safety standards.
12. Use bait sowing buckets with retractable legs.
13. *[Add further standards as required. These could include local performance standards as well as any recommendations from [Current Agreed Best Practice](#) that you want to apply to your operation. Attach conditions from other consents as separate pages.]*

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**Information Needs**

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*Compulsory for **all** operations*

Nil

*Compulsory for this operation*

1. *[Add as required.]*

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**Operational Planning & Design Considerations**

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- Apply bait in coldest months of year.
- For operations targeting possums, do not repeat aerial operations within 4 years using the same bait.
- Current Agreed Best Practice – Possum Control – Aerial Application of 1080 Cereal Pellets [docdm-341728](#)
- Current Agreed Best Practice – Rat Control – Aerial Application of 1080 Cereal Bait [docdm-29375](#)

My approval dated *[date]* is subject to these performance standards being met. Compliance monitoring may occur.

\_\_\_\_\_  
*[Name]* Director, Operations

<b>Pesticide Use #2</b>	<b>Sodium fluoroacetate 1.5g/kg Cereal pellet Handlaying (0.15% 1080 pellet)</b>	<b>Target Pests: Possums, Rats</b>
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<b>Location of operation</b>
<i>[Insert name of treatment block(s)/area here]</i>



<b>Caution Period</b>
The estimated caution period for this operation is <i>[assessor to complete]</i> months after last date of bait application and is subject to compulsory bait and carcass monitoring. This estimated caution period cannot be reduced to less than 4 months, and must be extended if the endpoints for monitoring have not been met at the end of the period.

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**Performance Standards**

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- Compulsory for **all** operations*
1. For operations targeting rats, prefeed with this pesticide use.
  2. For operations targeting possums, baits will have a mean size in excess of 6g and 95% of baits should weigh more than 4g.
  3. The baits must be dyed green or blue.
  4. The product must only be used as specified on the manufacturer's product label.
- Compulsory for this operation (delete those that you won't be applying to your operation)*
5. The DOC Code of practice for aerial 1080 in kea habitat [DOC 2612859](#) must be followed.
  6. *[Add further standards as required. These could include local performance standards as well as any recommendations from [Current Agreed Best Practice](#) that you want to apply to your operation. Attach conditions from other consents as separate pages.]*

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**Information Needs**

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- Compulsory for **all** operations*
- Nil
- Compulsory for this operation (delete those that you won't be applying to your operation)*
1. Monitoring: For operations targeting possums, follow best practice for pre and post control result monitoring to estimate percentage kill and report results in operational report.
  2. Monitoring: Monitor for native non-target animals in operational area, send samples for residue testing and report search effort and results in operational report. The Vertebrate Pesticides Residue Database SOP [docdm-33461](#) applies.
  3. *[Add as required ]*

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**Operational Planning & Design Considerations**

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- Current Agreed Best Practice – Possum Control – Handlaying 1080 Cereal Pellets [docdm-29797](#).

My approval dated <i>[date]</i> is subject to these performance standards being met. Compliance monitoring may occur.
_____ <i>[Name]</i> Operations Manager

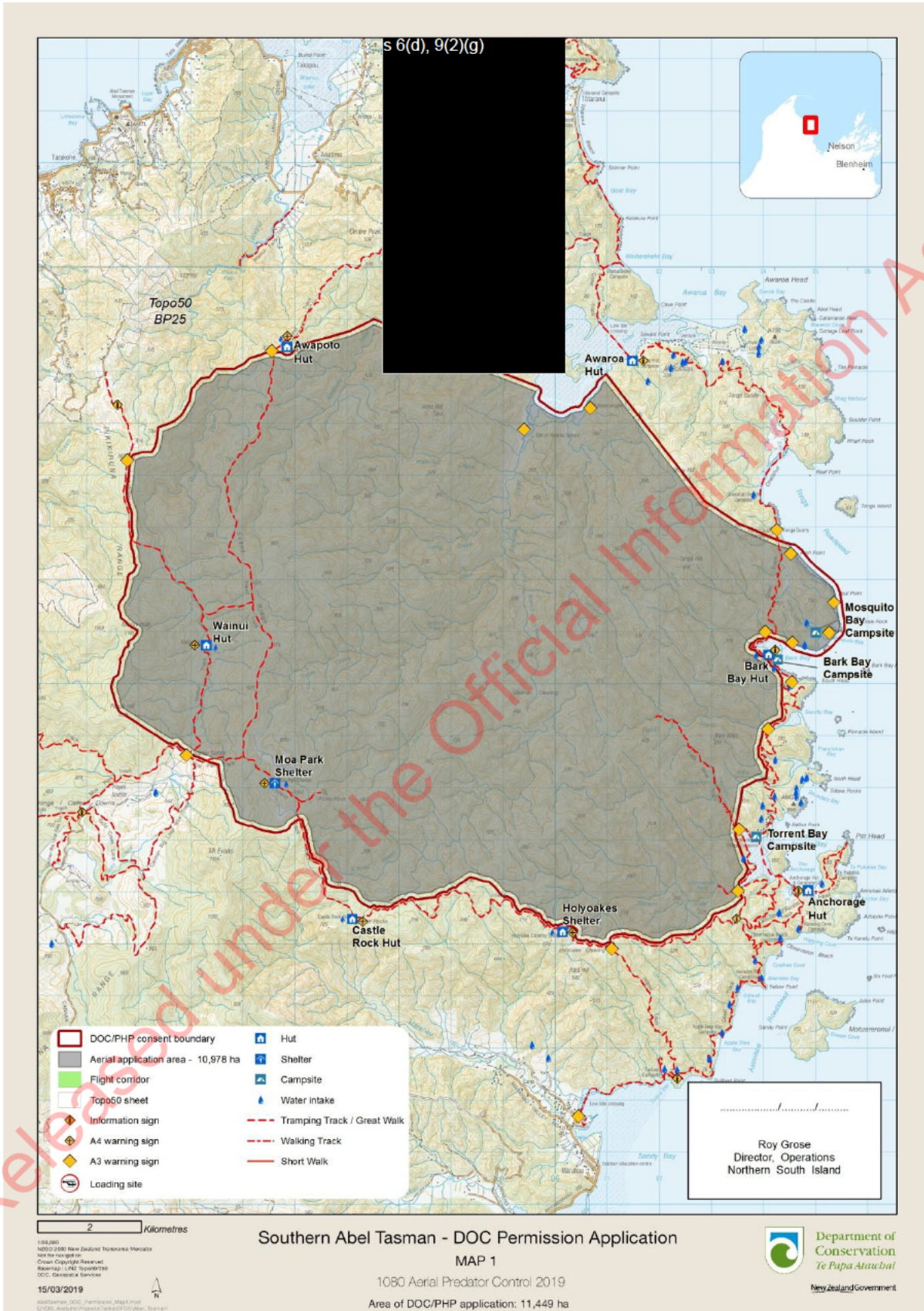


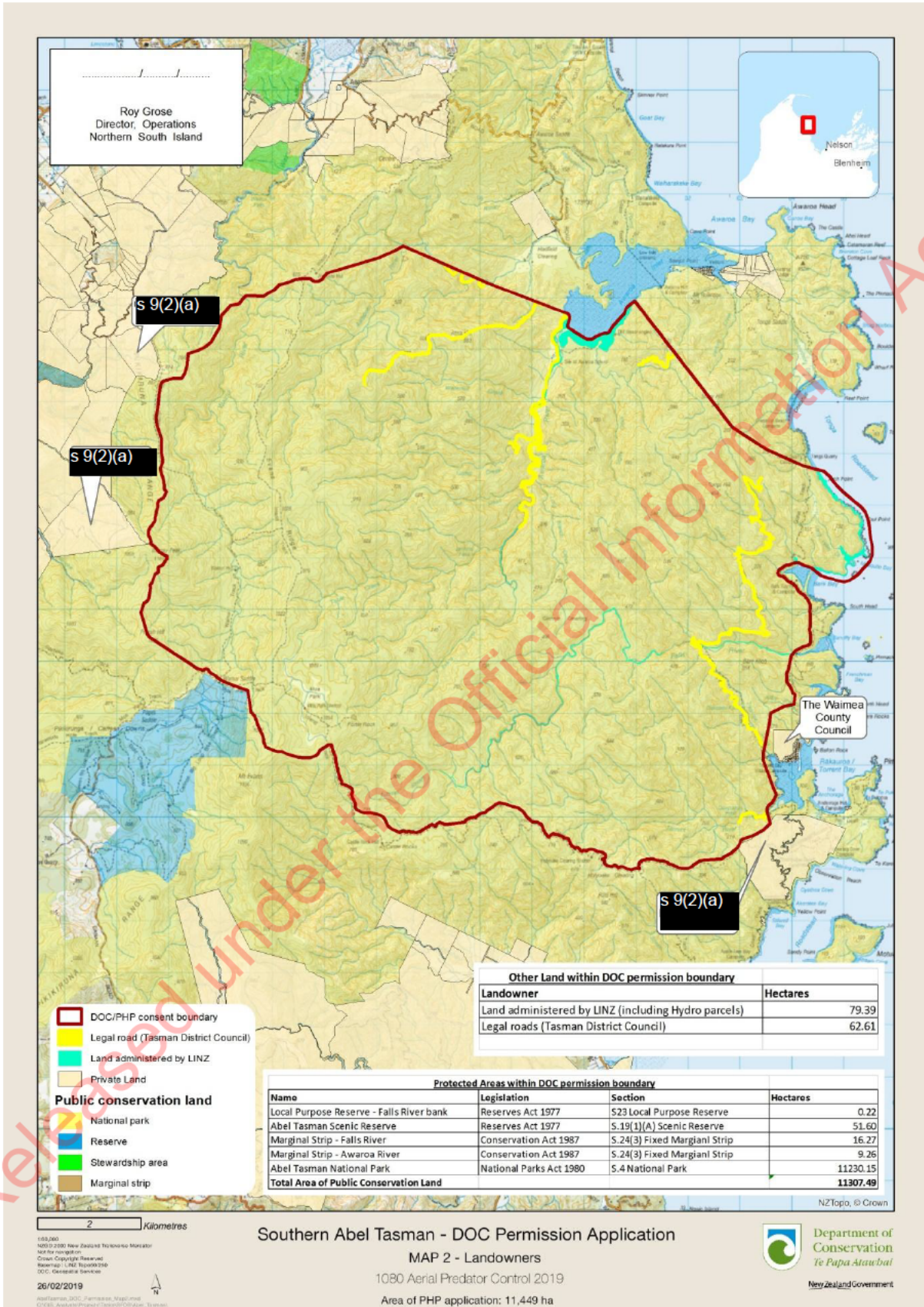
## Appendix 2: Maps

Your map(s) must show the following as a minimum:

- NZTM Topo50 Map reference (e.g., BN34)
- The external boundary of the treatment area or those treatment blocks included in this operation
- Legal boundaries of land managed by DOC
- Name of treatment area
- Financial year of operation
- Land tenure and adjacent owners, including leased land
- Any areas excluded from the treatment area (such as around public water supplies, pā sites)
- Location of any warning signs and public information signs
- Location of normal points of entry where warning signs must be a minimum size of A3
- Any water catchments or bodies of water (include rivers, streams, lakes, reservoirs, wetlands, coastal marine areas)
- Recreational facilities (tracks, huts, road ends, roads, picnic sites)
- Date map prepared

NOTE: 1:50,000 is the preferred scale. Use more than one map if the amount of detail becomes to visually cluttered to be clearly understood.

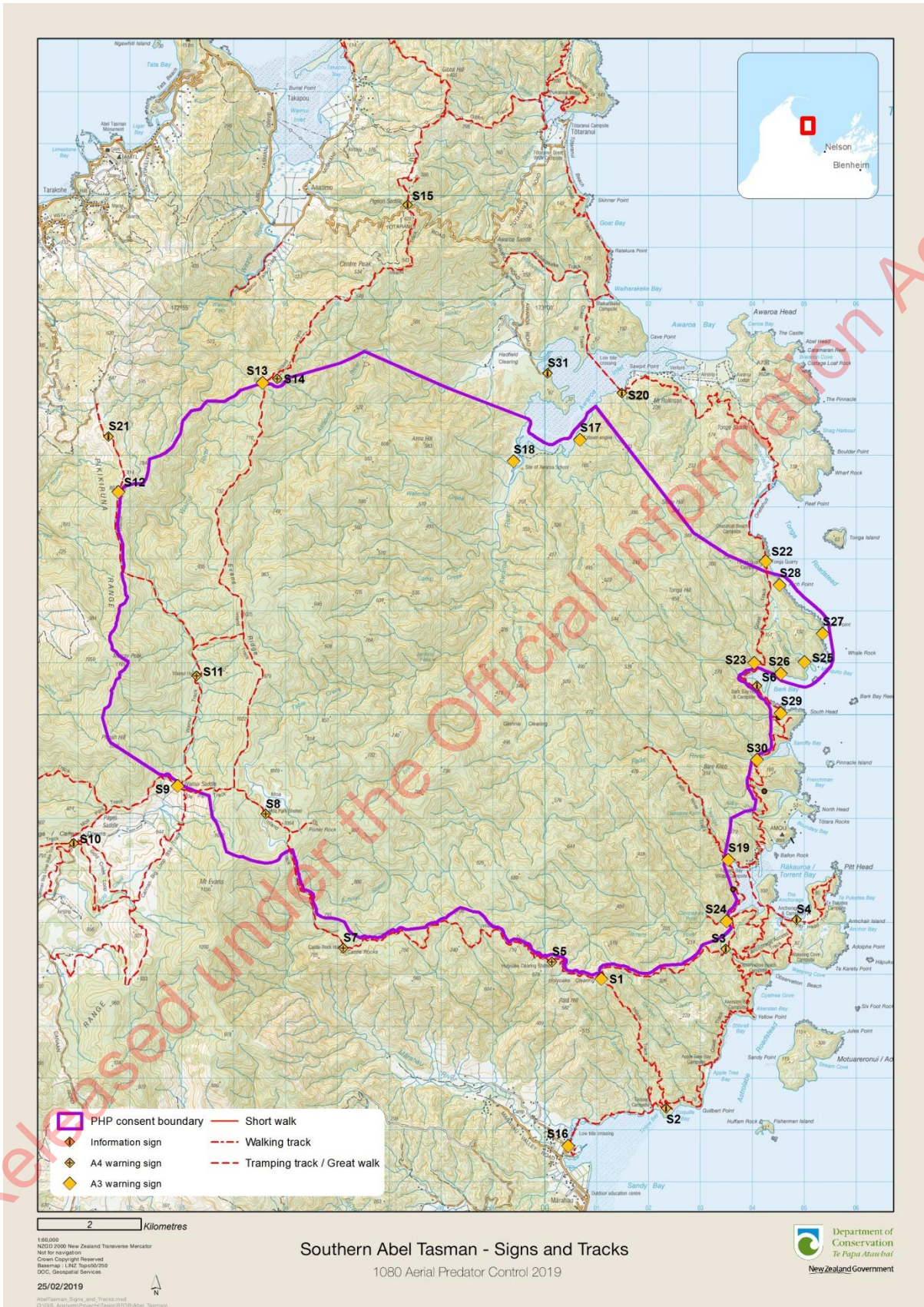






Southern Abel Tasman - Huts and water intakes  
 1080 Aerial Predator Control 2019





## Appendix 3: Communication Record

*This records every individual or group who has been consulted about the proposed operation. If using the DOC Communication Plan/Record template, insert the Communication Record you created. The required contents are the following pages:*

- *Introduction*
- *Consultation on options (if applicable)*
- *Consultation on effects (if applicable)*
- *Toolbox*

*If using another format, information must include:*

- *The decision on consultation*
- *Who was consulted*
- *Actual dates when consultation was undertaken*
- *Outcomes of consultation, including any complaints and how they were addressed*
- *Any landowner/occupier consent conditions*
- *References to which resources were used for each target audience*

Refer 2019 Southern ATNP Aerial Communications Log.

## Appendix 4: Consents

*Insert copies of all consents you specified in Section 3.2.*

*Landowner/occupier consents are recorded in the Consultation record whether or not written consent is obtained.*

Refer attached application to NMDHB HPO for VTA Permission.

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## Appendix 5: Assessment of environmental effects

Complete this section if an Assessment of Environmental Effects (AEE) is required by the DOC manager approving the permission. An AEE that has been prepared on the DOC RMA AEE template (docdm-96227) for a resource consent application can be attached instead if it covers all the pesticides uses in this application.

### Effects on non-target native species

#### Target benefit species

Detailed list of threatened native species that may be present in area:

COMMON NAME	SPECIES	THREAT RANK
Australasian bittern	<i>Botaurus poiciloptilus</i>	Nationally endangered
Kea	<i>Nestor notabilis</i>	Nationally endangered
Banded dotterel	<i>Charadrius bicinctus bicinctus</i>	Nationally vulnerable
Blue duck, whio	<i>Hymenolaimus malachorhynchus</i>	Nationally vulnerable
Caspian tern	<i>Hydroprogne caspia</i>	Nationally vulnerable
South Island kaka	<i>Nestor meridionalis meridionalis</i>	Nationally vulnerable
New Zealand falcon	<i>Falco novaeseelandiae</i>	Nationally vulnerable
Brown Teal/Pateke	<i>Anas chlorotis</i>	At Risk
Banded rail	<i>Gallirallus philippensis assimilis</i>	Declining
New Zealand pipit	<i>Anthus novaeseelandiae</i>	Declining
South Island rifleman	<i>Acanthisitta chloris chloris</i>	Declining
South Island fernbird	<i>Bowdleria punctata</i>	Declining
Marsh crake	<i>Porzana pusilla affinis</i>	Relict



Other common native bird species include:

COMMON NAME	SPECIES
Bellbird	<i>Anthornis melanura</i>
Black backed gull	<i>Larus dominicanus</i>
Brown creeper	<i>Finschia novaeseelandiae</i>
Fantail	<i>Rhipidura fuliginosa</i>
Grey warbler	<i>Gergone igata</i>
Long-tailed cuckoo	<i>Eudynamis taitensis</i>
Morepork	<i>Ninox novaeseelandiae</i>
Shining cuckoo	<i>Chalcites lucidus</i>
Silvereye	<i>Zosterops lateralis</i>
South Island tomtit	<i>Petroica macrocephala macrocephala</i>
South Island robin	<i>Petroica australis</i>
Tui	<i>Prothemadera novaeseelandiae</i>
Western weka	<i>Gallirallus australis australis</i>
Yellow-crowned parakeet	<i>Cyanoramphus auriceps</i>

Other native fauna recorded in the area that may benefit from the proposed operation include native land snails *Powelliphanta hochstetteri hochstetteri* and *Rhytida o'connori* and other invertebrates.

It is acknowledged that some individual birds and insects may be poisoned, but these numbers should be exceedingly low. Extensive monitoring of tomtit populations in Tongariro Forest before and after a 1080 operation in 2001 showed that no adverse impacts occurred. Research shows that native bird populations increase significantly when similar controls for possums and rats are undertaken.

The cereal bait has been specifically developed to be attractive to possums and rats and to be unattractive to birds by the nature of the bait size, colour (green or blue) and lure (orange and cinnamon smell) which deters the great majority of non-target animals. Bait quality control also reduces the risk to many birds by reducing the incidence of bait fragments being produced.

**Non-target species**

Refer to *Abel Tasman Project Janszoon Rat and Possum Control AEE (2013) DOCDM-1308727* for additional information regarding non-target species potentially at risk from aerial 1080 in the treatment area.

- Kea - *Nestor Notabilis* (Nationally endangered)

See also [DOC-2612859](#) code of practice for aerial 1080 in Kea habitat.

- Rifleman - *Acanthisitta chloris* (Declining)
  - Kakariki – *Cyanoramphus novaeseelandiae* (Relict)
  - Morepork – *Ninox novaeseelandiae* (Not threatened)
  - Tomtit – *Petroica macrocephala* (Not threatened)
  - New Zealand Falcon – *Falco novaeseelandiae* (Nationally vulnerable)
  - Fernbird - *Bowdleria punctata* (Declining)
  - Kereru – *Hemiphaga novaeseelandiae* (Not threatened)
  - Robin – *Petroica australis australis* (Not threatened)
  - Weka - *Gallirallus australis* (Not threatened)
- 

**Effect of operation on native species**

**Kea**

Kea are found throughout the South Island, more commonly in alpine environments, but at certain times of the year they frequent the lowland forest environments.

Their population is assessed nationally as somewhere between 5,000-15,000 birds. They are vulnerable to a range of introduced mammalian predators, due to ground nesting and an extended nesting cycle.

Kea are recognised by Ngāi Tahu as a taonga species and are classified as 'nationally endangered'. The species typically range over tens of kilometres, with a potential dispersal range of hundreds of kilometres. Kea breed in most years and have a long nesting cycle, with egg laying beginning in August and chicks fledging in December.

Stoats are the main predator; particularly in the year following masts. Other predators have an impact; with nest cameras recording visits by stoats, possums, ship rats, house mice, and weka.

The delivery of aerial 1080 operations in areas identified as existing kea habitat are managed under a DOC Code of Practice.

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The Abel Tasman National Park includes a diverse range of habitat spanning alpine areas and mixed podocarp/beechn lowland forest to wetland and coastal environments.

Kea are known to be present throughout the Abel Tasman National Park but the number of breeding pairs is estimated to be low.

Whilst it is well established that kea are vulnerable to 1080 poisoning, evidence suggests that it is kea that have been exposed to artificial food, at rubbish dumps or from tourists, which are more likely to eat toxic baits and be susceptible to subsequent poisoning. This appears to have been the case when twenty out of 150 radio-tagged kea died during ten monitored 1080 operations between 2008 and 2013. The twenty deaths were confined to three 1080 aerial operations, all in Westland 'beech gap' forests where a high proportion of kea are exposed to artificial food at rubbish dumps and from tourists (See AEE for further detail).

The kea in the Abel Tasman National Park are considered to not be habituated to humans and have very limited, if any, access to artificial food sources. Therefore it is less likely the kea in this area will actively seek out and sample 1080 toxin pellets.

Kea can be very productive in the absence of predators but nest success is very low during stoat irruptions. Without pest control management it is predicted that kea will become functionally extinct in the Abel Tasman National Park within the next 50-100 years primarily due to episodic mast-driven stoat plagues. It is likely kea would persist in Abel Tasman only as a low density sink population maintained by young kea dispersing into the area.

Currently rat tracking tunnels are running at close to 30-45% at some monitoring sites, indicating a subsequent stoat population irruption is imminent. By-kill of stoats from aerial 1080 operations targeting rodents during mast years is currently the best tool available to protect kea from stoat irruptions and is highly likely to prevent the high rates of stoat predation on nests and adults that would otherwise occur.

Whilst the 'rodent crash phase' is the most dangerous time for native species, since effective rat and/or possum control could potentially result in more predation pressure from reinvading stoats, Project Janszoon has deployed a landscape wide stoat

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trapping network (over 14,500ha) which will minimise prey switching occurring. Hence the aerial operations are designed to cause simultaneous stoat and rat population crashes and the stoat trapping is designed to control reinvading stoats (See AEE).

Other native bird populations are expected to benefit from the operation following reduced predation as a result of the reduced populations of possums and rats. Although this operation may result in some non-target deaths of individual birds, research has shown that 1080 operations have a net positive effect where non-target deaths in the short-term are counter balanced by better survival of the population in the longer term (Powlesland *et al.* 1998).

### **Kaka**

The Department and Project Janszoon are running a captive breeding programme for kaka, with the intention to release birds into the park.

As the current population of captive birds can be held until after the proposed aerial operation is complete (and bait determined to no longer be toxic/lethal) there will be no impacts and no other mitigation actions are required.

### **Whio**

Nine Whio, or Blue Duck, (*Hymenolaimus malacorhynchus*) have so far been released into Abel Tasman National Park (ATNP).

The available evidence indicates that Whio are not at risk from “standard” aerial 1080 operations (1-2 kg/ha [6g-12g RS5 pellets] with one pre-feed per drop – every 2-4 years) (Kate Steffens pers. comm.)

Whio, including captive-raised females, have now been monitored through three 1080 Operations in the Wangapeka and none were found to have died from 1080 ingestion.

Other studies carried out to determine Whio survival following aerial 1080 operations found that no Whio were killed by 1080 poisoning (Fairweather *et al* 2018), and Veltman *et al* (2014) noted that there is a very small risk that individual Whio will die from 1080 poisoning.

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However, because the birds in ATNP are captive-raised and consequently habituated to eating pellets, their survival will be monitored through the upcoming 1080 operation.

The whereabouts of each bird will be determined with a trained Whio-dog immediately before the proposed drop and these sites would then be resurveyed without a dog 10 days after the drop had taken place (dogs are highly susceptible to 1080 pellets).

During this post 1080 survey, Whio faeces will be checked for green colouration (green dye from 1080 pellets) and bird presence noted. If required, a follow-up dog-survey would be conducted four months after the drop.

### **Pāteke**

Pāteke were reintroduced to Abel Tasman National Park in May 2017, with further releases in May 2018 and December 2018 amounting to 123 birds in total. The reintroduction at Hadfield Clearing/Awaroa bears testament to progress made in revitalising the pāteke captive programme, and the opportunities provided by restored habitat subject to pest-control management.

With respect to the May 2019 Southern ATNP 1080 operation what is the threat of poisoning pāteke?

The LD50 relating to 1080 for pāteke is unknown. Very little information exists regarding pāteke's interaction with 1080 cereal baits.

The extent of knowledge that exists within the scientific and species management community is well illustrated in the accompanying in-depth Mitigation Plan, Appendix 5: Correspondence relating to Pāteke and 1080.

The discussion provided very few hard facts; with much of the comment and advice based on speculation and assumption. While a message of caution and implementation of mitigation methods is justifiably prominent, there was support for the Southern ATNP 1080 operation and future similar activity to

test pāteke resilience, and unanimous recognition that pāteke will be subject to, and must coexist with, effective pest control afforded through 1080 applications.

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The shortest distance from Hadfield Clearing, the area where most birds are resident, to the proposed 2019 Southern ATNP 1080 treatment area is approximately 800m. However, birds are currently resident (as at mid-Feb 2019) within 450m of the treatment area on ponds southwest of Hadfield Clearing.

Only one bird is known to be currently resident within the proposed treatment site.

Based on the current knowledge of pāteke distribution and preferred habitat, the 2019 Southern ATNP 1080 operation can be considered to pose a low threat with respect to bird wellbeing.

However, to minimise harmful effects of 1080 to pāteke, the exclusion of suitable habitat (primarily coastal and estuarial wetland) from the 1080 treatment area with appropriate buffer distances should be considered.

Therefore the following mitigation measures are proposed:

Short Term (for the 2019 aerial operation):

- Implement a buffer/exclusion around pāteke in the proposed aerial drop area based on:
  - Location of all transmitters determined immediately prior to bait sowing.
  - Searches for pāteke (with dogs?) in areas in the aerial drop zone where they've been known to exist immediately prior to bait sowing.
  - Consider results of feed trials with captive pāteke. While not conclusive for wild birds, it may prove useful in determining the appropriate extent of the exclusion.
- Monitor survival of transmitters pāteke; and, if other individuals are previously detected, search exclusion area following the operation.

Long Term (assuming a possum-triggered aerial operation in 2021)

- Shift to using feeders only for the required period of transition to wild food from May 2019. This will provide a 9-10 month window with no supplemental food leading up to the next aerial operation.
  - Investigate non-pellet food formulations for future releases.
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- Work with the recovery group to optimize release of pāteke. Assuming we won't release pāteke directly before the next aerial operation, consider accelerating releases in 2019 and 2020 to reach release targets.
- Ensure appropriate monitoring is available for the next aerial operation, potentially by delaying the use of the remaining 20 transmitters until 2020.
- Continue learning from other operations happening in the presence of pāteke

### **NZ Fur Seal**

NZ Fur Seals are present along the Abel Tasman coastline, with a significant breeding colony located on Tonga Island.

As this proposed aerial operation is going to involve the treatment of approximately 4 km of the coast line (with bait applied down to the MHWS mark) in the vicinity of Tonga Island, between Bark Bay and Tonga Quarry, there are likely to be exposure of seals to bait.

Advice from Department marine mammal advisors and other staff who have undertaken baiting operations along the coastline or on off-shore islands where seals are present, centres around 2 main risks;

1. Ingestion of bait, and
2. Effects from noise i.e. helicopters.

#### Ingestion of bait

The advice provided is that there is potential for seal pups to be inquisitive and possible ingest baits. There has been no study on the toxic effects and no known LD50 information.

The general period pups are present in a breeding colony is over late spring/summer (from 1 November onwards). As the area to treat is not a known breeding area and it is intended to treat the site prior to November 1 there is unlikely to be any interaction of young seals with bait.

The mitigation action proposed to limit any likely effect is to walk and search the coastline (where possible) and remove any bait found along the open rocky coastal area.

This search will be limited by sea cliffs, deep guts, and possibly adult seals being present, so will not cover the entire coastline - only as much as is safe to check.

We have agreed a seal monitoring plan with Manawhenua ki Mohua, in that we will note the location of any seals (when undertaking the bait check and clearance) that are potentially exposed to 1080, and undertake a follow-up monitor.

Effects from noise

There have been documented situations where disturbance from a low flying helicopter has caused panic and stampedes by seals. This is chiefly a problem at breeding colonies, as young seals are crushed in the rush to the water.

As the area proposed to be treated is not a breeding colony area, and the period in which the operation is planned falls outside the breeding season for seals, there should be no effect on pups or young seals.

The more likely effect is on individual adult seals hauled out along the coastline that is intended to be treated. Advice provided on mitigation options is that so long as the animals 'see/hear' the helicopter from a distance, rather than having it just appearing above it, then they are either not disturbed at all or they have time to make their way to water unhurried.

The mitigation measure for this aerial operation is provided by the operational QA requirement to fly the coastline (also applicable to the whole boundary of the treatment area) with at least one (1) parallel swathe. This would place the helicopter above but slightly inland (approx 80m) of the open rocky coastline. Only one pass is required so there should only be a short term and hopefully limited effect on any seal hauled out along that section of the coastline.

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Refer *Abel Tasman Project Janszoon Rat and Possum Control AEE 2014* attached.