

Application Form for Rat control in  
the Arthurs Pass area  
May 2019

Name of applicant: s 9(2)(a)

Company/organisation: Vector Control Services

Postal address: PO Box 453 Greymouth

Phone number: s 9(2)(a)

Email address: s 9(2)(a)

Prepared by:  
s 9(2)(a) March 2019



Department of Conservation  
*Te Papa Atawhai*

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## 1. Introduction

### 1.1 Overview

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

- Pesticide Use #140 1080 1.5g/kg Cereal Aerial

Permission is sought for toxic application starting on or after 01/05/19 and ending on or before 16/12/19. Non-toxic pre feed will be applied no earlier than 01/05/19

### 1.2 Treatment area

Arthurs Pass

130,482ha

### 1.3 Treatment block(s)

Arthurs Pass;

Block 1: 130,482ha.

Conservation Area	Hectares
Hawdon Flats Reserve	1,007.6
Arthur's Pass National Park	73,685.9
Camp Site Reserve No 2 Hut	4.5
Lake Sumner Marginal Strip	1.3
Conservation Area Head of Lake Sumner	380.2
Lochinvar Forest Conservation Area	2,344.6
Hurunui River Marginal Strip	4.4
Hurunui River Marginal Strip	1.6
Hurunui River Marginal Strip	0.8
Conservation Area Hawdon River	15.5
Cora Lynn Gravel Reserve	24.7
Conservation Area - Taramakau River / Otira River	889.3
Hurunui River Marginal Strip	2.3
Hurunui River Marginal Strip	3.0
Conservation Area - Otira-Kopara Forest	19,368.5
Lake Sumner Forest Park	28,901.5
<b>Total area: Land Administered by the Department</b>	<b>126,635.5</b>

### 1.4 Geographical location

The Arthurs Pass operational area is located between Arthurs Pass and Lake Sumner and is made of parts of Arthurs Pass National Park, Lake Sumner Forest Park and Otira-Kopara Forest conservation areas.

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It includes the headwater catchments of the Taramakau, Crooked and Trent Rivers on the West Coast from near Jacksons and extends to the edge of the Lakes Station in the Hurunui River near Lakes Sumner and Mason in the north. The boundary then extends eastward to include the Hurunui South Branch, North Esk, Poulter and Hawdon Rivers.

It encompasses parts or all of the Kaimata and Aicken Ranges on the West Coast and the Savannah, Poulter, Dampier, Polar and Crawford Ranges on the East Coast

NZ Topo50: BU20, 21 & 22, BV20, 21 & 22

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1.5  
Adjacent  
land tenure  
and uses

The surrounding land is used for conservation and recreation. Part of the Lake Sumner recreational hunting area is also included in the operational area.

Large high country stations and pastoral lease adjoin the control area from Lake Sumner to Bealey Spur in the Canterbury region.

Smaller dry stock farms and lifestyle sections are located adjacent to the control area in the Taramakau Valley in the West Coast region.

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1.6  
Nearby  
residential  
areas or  
facilities

Arthurs Pass is the closest town to the control area at approximately 8.2km. The smaller Bealey Spur and Otira residential areas are approximately 4km and 5km from the area respectively.

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1.7  
Community  
interests

There are no schools within 50km of the control area. Kidson and Paterson lodges located on the true left of the Hawdon River, below Mt White and are owned by Christchurch Boys **High and Saint Margaret's Colleges** respectively. They are used for education purposes in spring and summer.

Parts of the control area are high value recreational areas. The Taramakau, Andrews, Hawdon and Poulter have road access that allows access to walking tracks for tramping, fishing and hunting.

The Lake Sumner recreational hunting area is valued for its status as an area managed for recreational hunting purposes with no commercial wild animal recovery permitted.

Arthurs Pass area offers a remote back country experience for walkers and hunters with 28 huts and associated tracks within

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the control area. There is limited public access into the Hurunui South Branch.

All of the rivers are valued for fishing.

A reasonable level of skill is required for walkers and hunters to access the control area in winter.

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1.8  
Management  
history

Rat control and monitoring was established in the Hawdon River valley and the South Branch of the Hurunui River in 2003. Stoat control in the Poulter River valley was established in 2004. Stoat control (with rat by kill) is still undertaken in all three valleys to protect the Orange Fronted Parakeet (OFP).

The focus for rat and possum control has shifted from ground methods to undertaking aerial-1080 operations when monitoring and beech-seed fall levels indicate rat numbers are likely to increase beyond the threshold levels to sustain predator numbers that will have an adverse impact on the OFP, due to beech seed mast events.

This year the operational area has been expanded into areas that have not been controlled by aerial 1080 previously to provide a larger buffer to the OFP areas and provide a benefit to Great Spotted Kiwi.

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## 2. Outcomes and targets

2.1  
Conservation  
outcome(s)

1. To ensure the perpetuation of Orange-fronted parakeet throughout their present range.
  2. To reduce the Department of Conservation species ranking of OFP from Nationally Endangered.
  3. To restore and, wherever possible, enhance the abundance, distribution and genetic diversity of all kiwi species
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2.2  
Target(s)

- To reduce the ship rat populations below 5% rat tracking to allow orange-fronted parakeet populations to recover.
  - A viable orange-fronted parakeet population is present in the Hawdon, Andrews, Poulter and South Branch **Hurunui Valley's** at the conclusion of the 2019/ 2020 breeding season.
  - Orange-fronted parakeet encounter rates (from standardised monitoring lines) are not less than 2017 / 2018
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- Increase the success of Great Spotted Kiwi breeding by 2%
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### 3. Consultation and consents

#### 3.1 Consultation

All adjoining landowners/occupiers adjacent to the proposed operational boundary have been consulted. The outcomes of these meetings have been recorded in the attached consultation report.

Summary for Tangata Whenua and other individuals or groups consulted:

The Department of Conservation has undertaken consultation on effects with the affected Ngai Tahu rūnanga.

Pending OIA consultation

[Redacted]

See attached consultation record for a full summary

#### 3.2 Consents

The following documents are attached as Appendix 4:

- A copy of the CPH permission will be provided when received.
- Other (specify):

### 4. Methods

#### 4.1 Treatment block 1

Provide the detail for all proposed control methods and their pests in treatment blocks in a series of tables named:

Pesticides—aerial

Describe the pesticide use, covering the following points:

Pesticide use #140	Target pest
1080 1.5g/kg Cereal Aerial	Rats

Brand name of pesticide	1080 1.5g/kg Cereal Pestex
Lure/mask (& %)	Cinnamon 0.15% Pre feed Cinnamon 0.3% Toxic
Type of pre-feed (lure/dye)	Cereal Rs5
Number of pre-feeds (if any)	One
Sowing rates for pre-feed and toxic bait	3kg/ha pre feed 3kg/ha toxic
Other details about this method	A 50% overlap on aircraft swaths will be used in the Orange Fronted Parakeet area to ensure even coverage of baits. This will result in a 3kg/ha sowing rate in the OFP blocks only. The rest of the area will be sown at 1.5kg/ha. EDR will be used in part of the Lake Sumner RHA area sown at 1.5kg/ha.

4.2  
Justification  
for proposed  
method

Aerially sown 1080 cereal pellets provide a highly cost-effective means of rat control. All rats will be exposed to lethal bait doses. This method is an appropriate technique considering the size of the area, the terrain, previous control history and the expected rat density after a beech seed mast.

Given the area to be covered, support from affected parties and the success of previous aerial operations in parts of this area, this method is expected to result in the objectives being met. Alternatives to provide the required level of rat control and subsequent secondary poisoning of mustelids and feral cats is unlikely to meet the outcome required.

Risks to humans from bait handling and distribution will be low, through compliance with stringent safety and performance standards. Stringent conditions to protect public health will be imposed by the Medical Officer of Health and adhered to. Physical damage to the environment will be minimal.



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Adverse effects on non-target species can be managed through performance standards. Effects of aerial control on adjacent land occupiers and land use will be eliminated or mitigated through careful boundary management and communication.

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## 5. Further information

Details of contractor or principle

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:

Company/organisation:	DOC
Contact person:	s 9(2)(a)
Contact number:	s 9(2)(a)

Further information

Provide any other information or comments you would like to have considered.

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## 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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## ◆ INCLUDE ONE SHEET PER PESTICIDE USE ◆ COMPLETE SHADED AREAS ◆

Pesticide Use #140	Sodium fluoroacetate 1.5g/kg Cereal pellet Aerial (Pestex)	Target Pests: Possums, Rats
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Location of operation
<i>Arthurs Pass</i>



Caution Period
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 the area is decontaminated.
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. *[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

## Appendix 2: Maps

Both of the following must be supplied:

1. DOC permission map(s) as one or more image files (.JPG format preferred)
2. DOC Pesticide Summary shapefiles (not required for DOC pest operations)

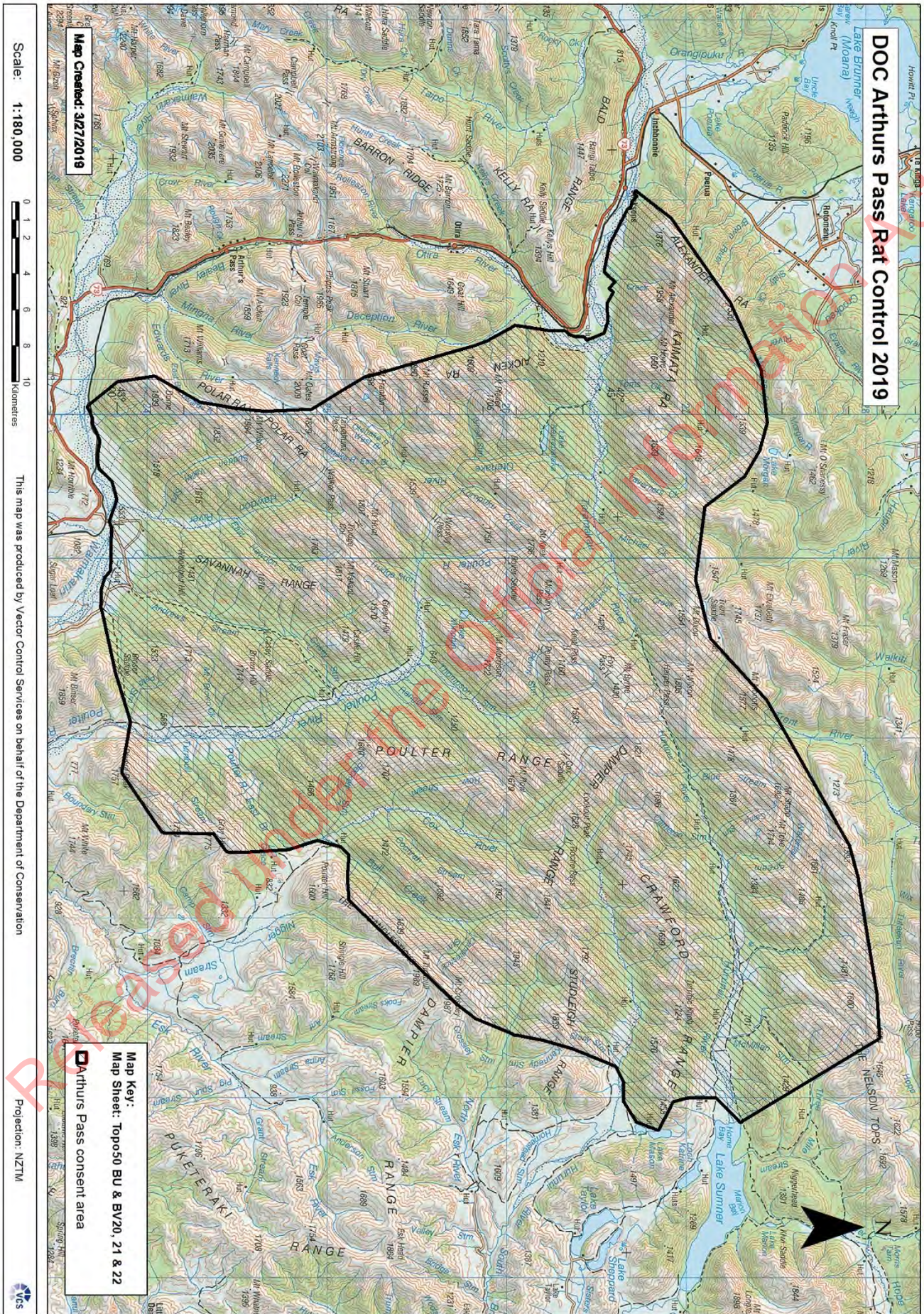
Your DOC permission map(s) must show the following as a minimum:

- 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
- 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
- Bodies of water (include rivers, streams, lakes, reservoirs, wetlands, coastal marine areas)
- Recreational facilities (tracks, huts, road ends, roads, picnic sites)
- Date map prepared

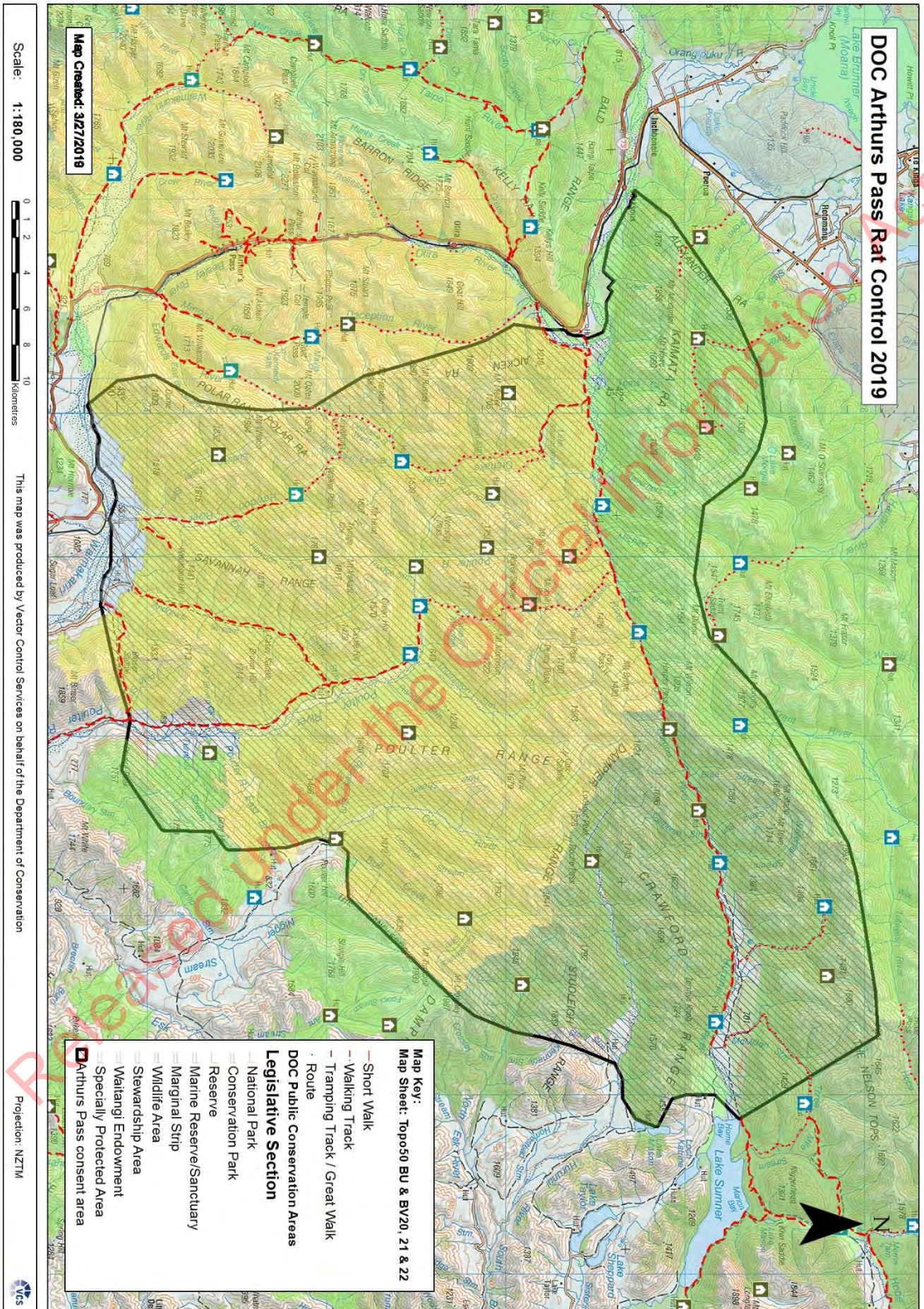
NOTE: 1:50,000 is the preferred scale. Use more than one map if the amount of detail becomes to visually cluttered to be clearly understood.

The DOC Pesticide Summary shapefile(s) will be published on the DOC Pesticide Summary website, initially as a proposed operation. It must be obvious which control methods are proposed for each treatment block. The shape files must also show all boundaries relating to the operation (treatment area/block, exclusion zones, no fly zone etc.) and warning sign locations. DOC pest operations are already captured in the Pesticide application so do not need to supply shapefiles with the application for DOC permission.

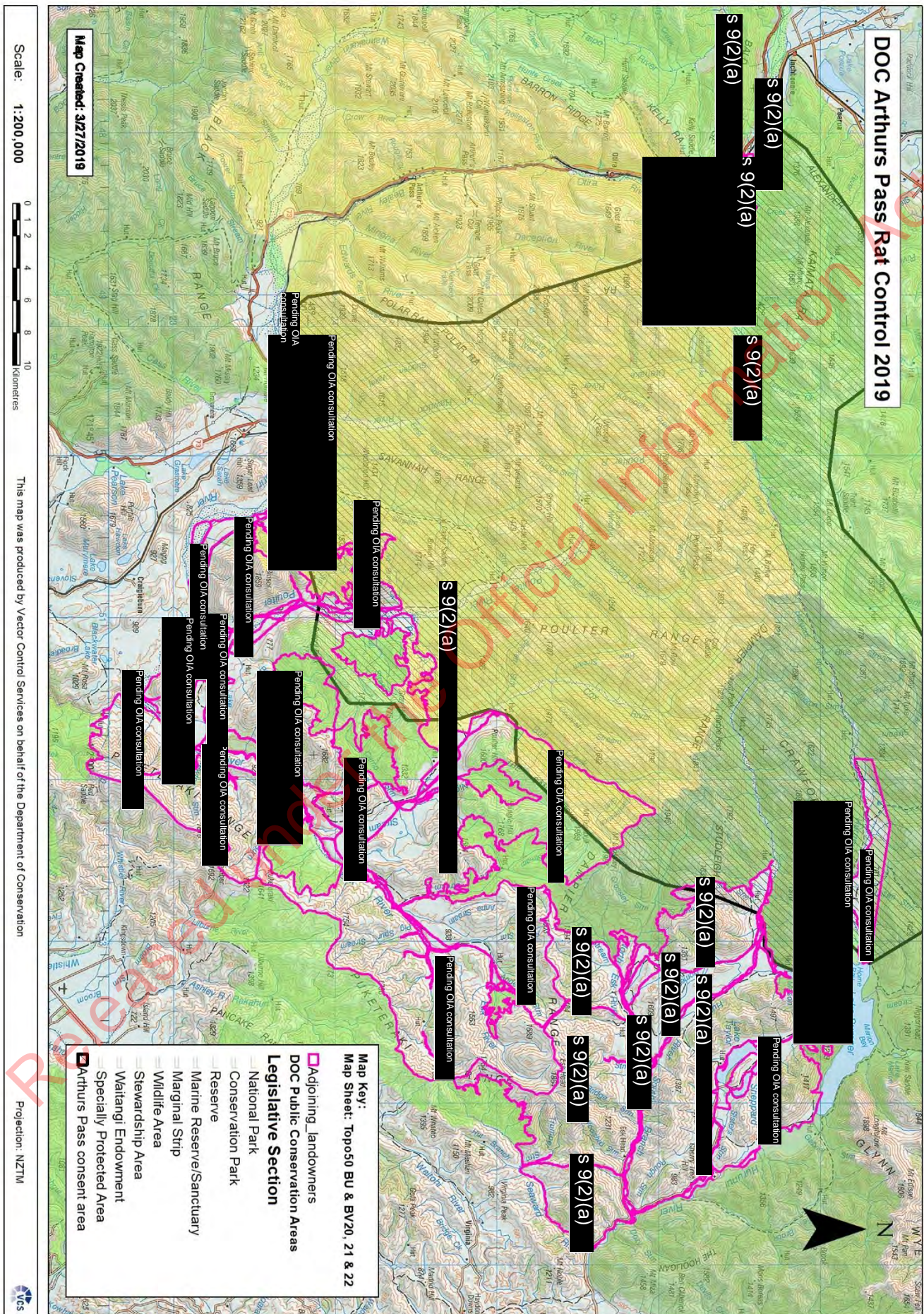




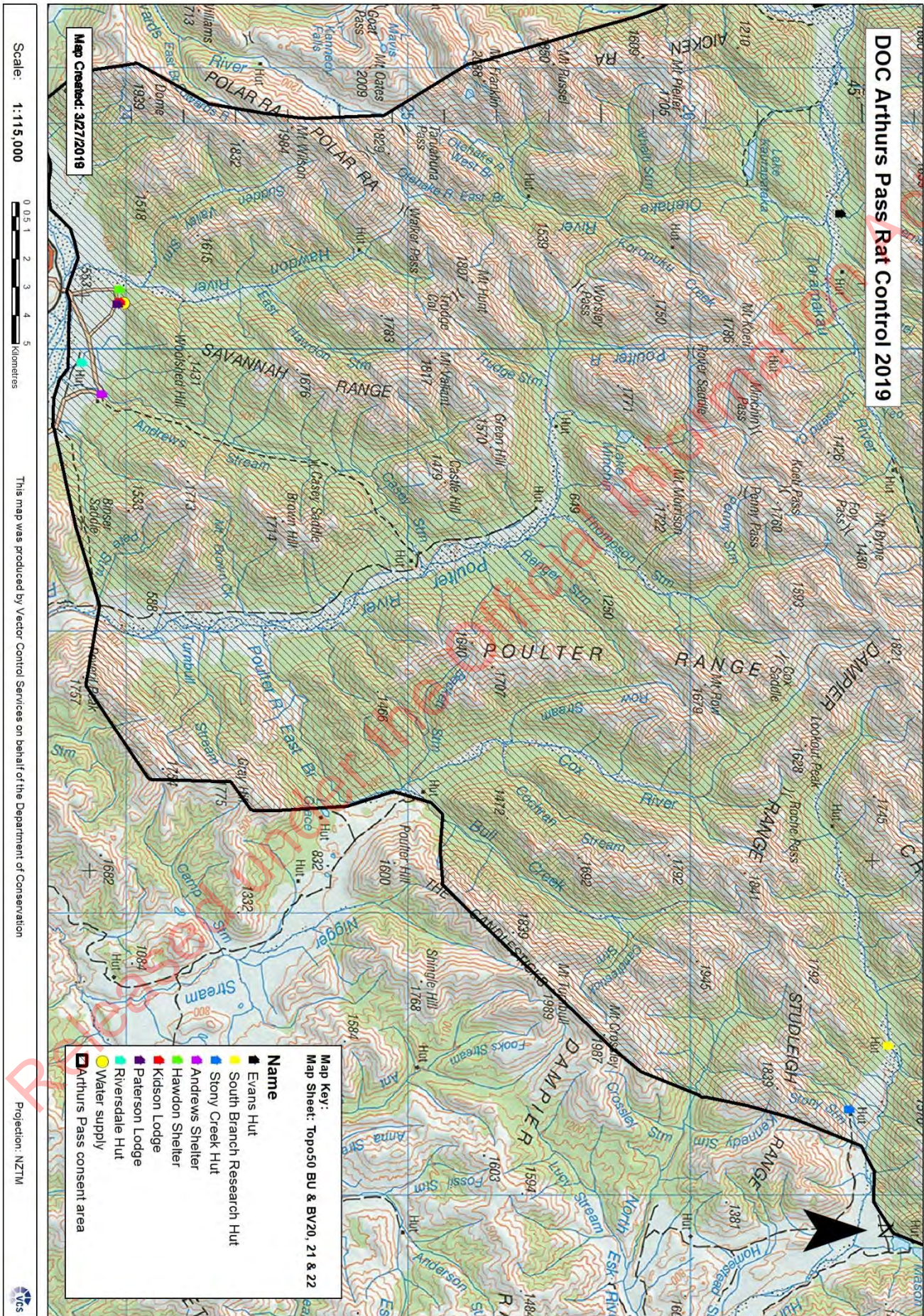




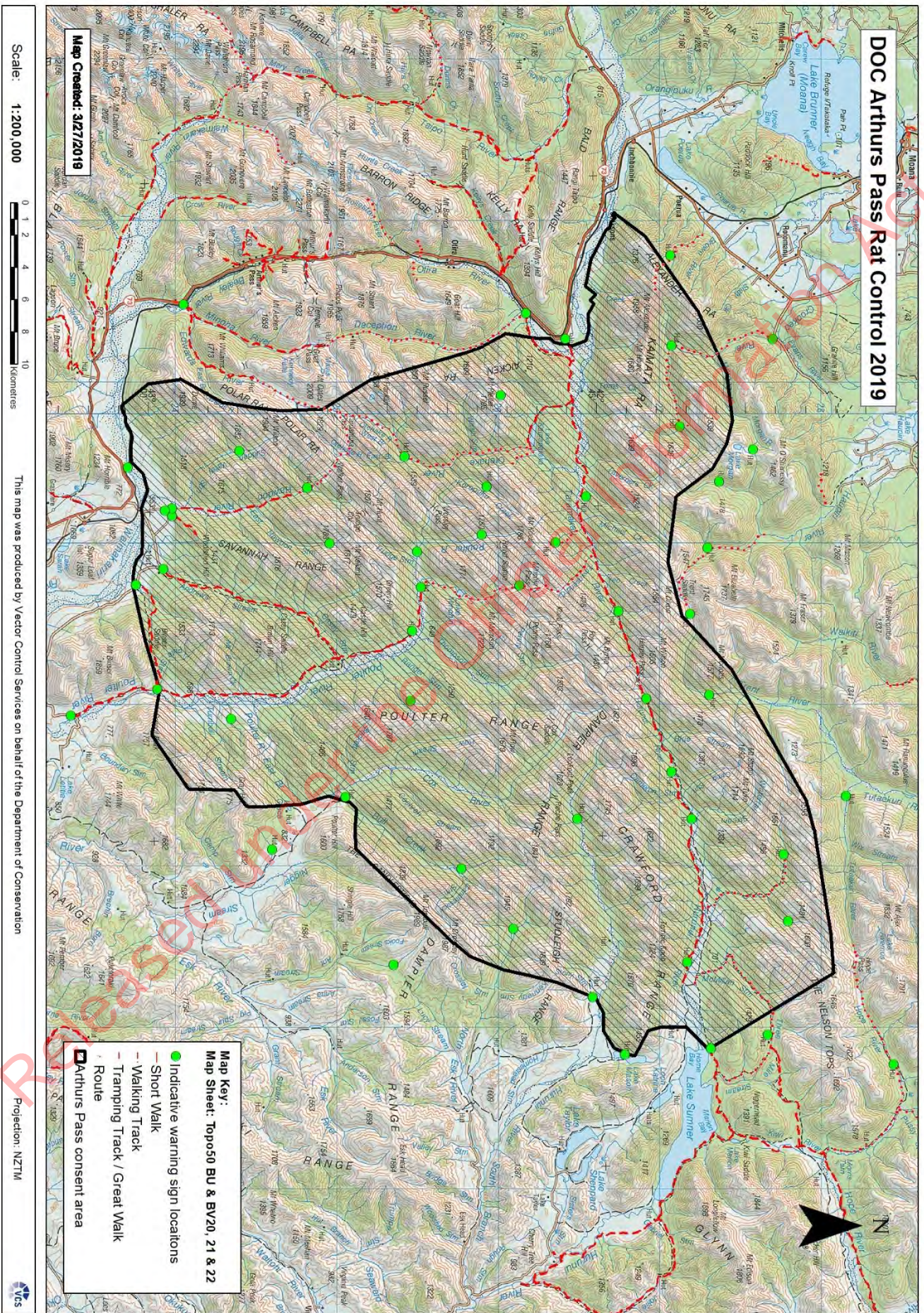












**DOC Arthurs Pass Rat Control 2019**

Map Created: 3/27/2019

Scale: 1:200,000

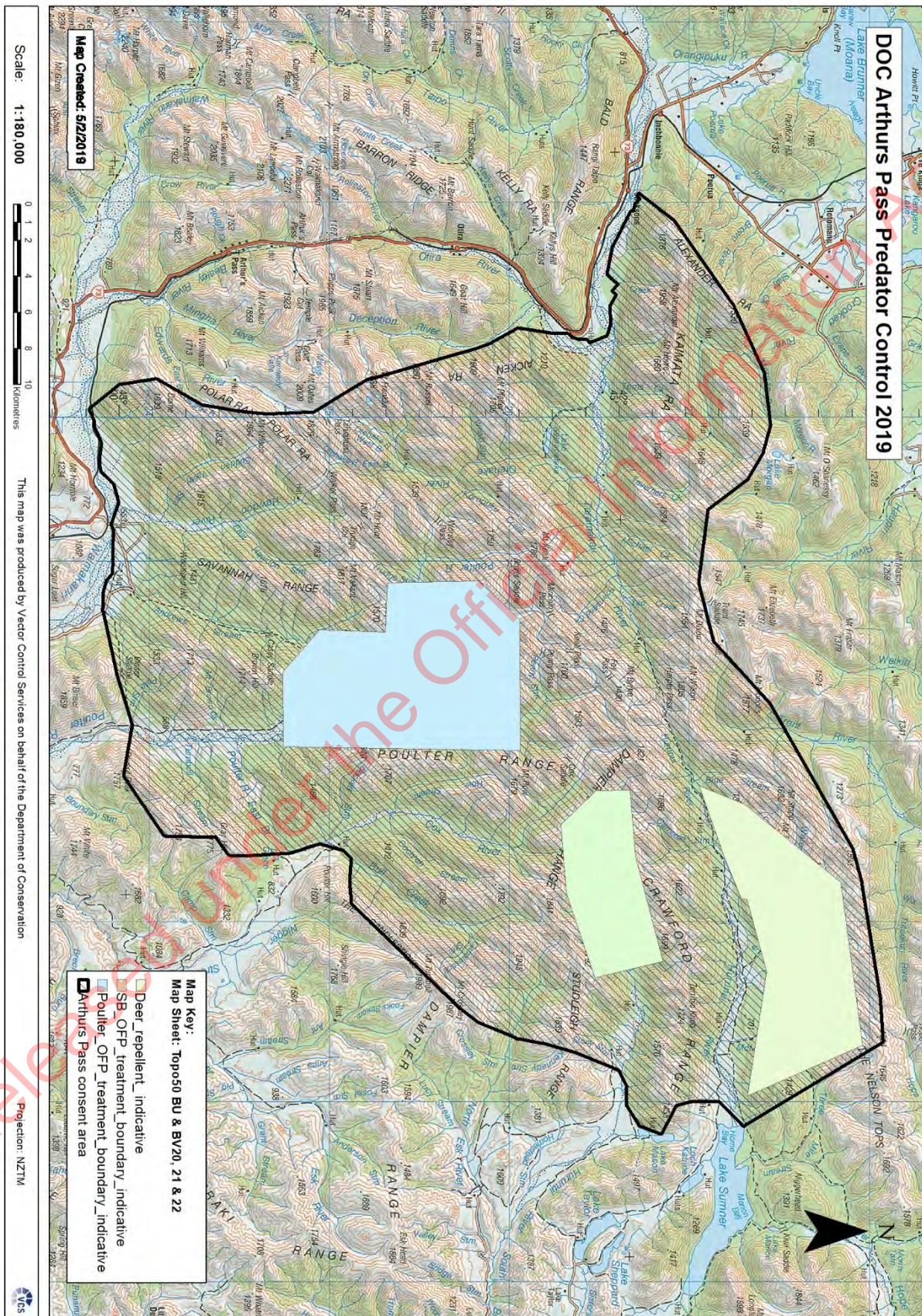


This map was produced by Vector Control Services on behalf of the Department of Conservation

Projection: NZTM

- Map Key:**  
 Map Sheet: Topo50 BU & BV20, 21 & 22
- Indicative warning sign locations
  - Short Walk
  - Walking Track
  - Tramping Track / Great Walk
  - Route
  - Arthurs Pass consent area







## 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

## ARTHURS PASS AERIAL 2019 SUMMARY OF CONSULTATION ON EFFECTS

### 1. Introduction

From December 2018 through to March 2019 staff of Department of Conservation and Vector Control Services (VCS) undertook consultation with landowners and interested parties in support of the Arthurs Pass Aerial Operation scheduled to commence in May 2019.

Given the method of control had been determined, consultation was therefore limited to effects and boundaries.

### 2. Methods of Consultation Employed

Consultation targeted the owners and occupiers of all properties either directly adjoining or located within the boundary of the control block as well as key stakeholders.

Affected landowners were identified using land parcel data extracted from ArcGIS and historic information. This information was compiled into a contacts database to manage information flow and to maintain a comprehensive record of the consultation undertaken.

All adjoining landowners and interest groups were either met with in person, sent an advisory letter/email and fact sheet or spoken to on the phone (with follow up email communication).

Record of Discussion (ROD) forms were completed during personal visits and telephone conversations. These have been entered into the electronic database and retained on file.

### 3. Consultation with Landowners/Occupiers

All adjoining landowners have been spoken with and support the operation proceeding. Due to the location of the control area and the type of land use adjacent to the control area the number of adjoining properties is quite low.

While some adjoining landowners stated they do not support the use of aerially applied toxin they recognised the need to carry out predator control and the benefits it provides to the environment. There is a long history of control to manage predators in the Eastern water sheds, and TB control **has been ongoing on the West Coast since the mid 90's** so the method of control is not new.

Adjoining properties where permission was not granted to include land will have non sowing buffers applied to them.

### 4. Consultation with Recreational Groups

Pending OIA consultation

### 5. Consultation with Maori

Pending OIA consultation

## 6. Consultation with Department of Conservation

The operation consists of public land administered by the Department of Conservation (DOC), unoccupied Crown Land administered by LINZ and some privately owned land. Permission from the Department to use VTA will be required.

## 7. Identifying Water Supply Intakes

Two private huts used for education purposes have been identified as drawing water from the control area. An exclusion on the intakes will be required.

## 8. Domestic Animals and Livestock

Strategies around minimising the risk to dogs from secondary poisoning and downstream effects were discussed, along with the expected caution period for the risk to dogs from carcasses and the importance of keeping domestic stock out of the control area.

The areas adjoining this operation are large scale beef, sheep and deer farming operations on the East Coast and smaller dry stock farms on the West Coast.

Most properties have unfenced boundaries between their land and the control area. The boundary has been amended to avoid placing stock at risk on the properties where stock winter near unfenced areas adjacent to the control area. Areas where stock could be removed to assist with completing the operation were also identified and mitigation strategies discussed should these offers be accepted and agreeable to both parties.

## 9. Requests for Change

Requests were made to amend the boundary around identified risk areas for stock on land adjoining their properties and to remove some private property from the control area.

A private hut was also identified within the control area and excluded with the associated private land.

Group	Name	Issues	Purpose of consultation	How	Who's responsible	Target dates	Actual Dates
<i>Label each target audience with a general group (e.g. landowner, recreation group, consent approver) to allow the plan to be sorted.</i>	<i>State the name of the individual or organisation</i>	<i>Match issue(s) from Introduction to each target audience. Use Alt+Enter between issues for the same audience.</i>	<i>Select which purpose(s) applies to each target audience, from: -Consultation not planned -What can we do about the effects of our plan on you? -Obtain their landowner or occupier consent -Obtain their Section 95 non-notified approval Use Alt+Enter between purposes for the same audience.</i>	<i>Select which method(s) you will use to consult with each target audience, e.g.: -Visit -Working Group -Public Meeting -N/A Use Alt+Enter between methods for the same audience.</i>	<i>Person tasked to complete consultation, or N/A for audiences where consultation is not planned.</i>	<i>Use format that allows sorting. State N/A for audiences where consultation is not planned. Use date format that allows sorting. State N/A for audiences where consultation is not planned.</i>	<i>Dates when actual communication took place</i>
Iwi	Pending OIA consultation	Effects of proposed operations on tangata whenua values	What do you think of our available options for pest control?	Visit	S 9(2)(a)	End Feb 2019	

Iwi	Pending OIA consultation	Effects of proposed operations on tangata whenua values	What do you think of our available options for pest control?	Visit	S 9(2)(a)	End Feb 2019	13/02/2019
Iwi		Effects of proposed operations on tangata whenua values	What do you think of our available options for pest control?	Visit		End Feb 2019	21/12/2018
Iwi		Effects of proposed operations on tangata whenua values	What do you think of our available options for pest control?	Phone/Email		End Feb 2019	30/01/2019
Landowner-adjointing		Effects of proposed operations on adjoining property, farming operations, and risk to stock	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information		End Jan 2019	11/02/2019



Landowner- adjoining	S [redacted] 9(2) [redacted] Pending [redacted] OIA [redacted] consultat [redacted]	Effects of proposed operations on adjoining property, farming operations, and risk to stock	To obtain landowner/occupie r consent, to discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	S 9(2)(a) [redacted]	End Jan 2019	22/01/2019; 24/01/2019; 11/03/2019
Landowner- adjoining	S 9(2)(a) [redacted] Pendi [redacted] ng [redacted] OIA [redacted]	Effects of proposed operations on adjoining property, farming operations, and risk to stock	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	[redacted]	End Jan 2019	22/01/2019; 24/01/2019
Landowner- adjoining	S 9(2) (a) [redacted] (Owner Pendi [redacted] g OIA [redacted] consult [redacted] S 9(2)(a) [redacted] [redacted] (Manager), S [redacted] 9(2) [redacted] (Farm Advisor)	Effects of proposed operations on adjoining property, farming operations, and risk to stock	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	[redacted]	End Jan 2019	26/2/2019

Landowner- adjoining	S 9(2)(a) [REDACTED]	Effects of proposed operations on adjoining property, farming operations, and risk to stock	To obtain landowner/occupie r consent, to discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	S [REDACTED] 9(2) [REDACTED] & West Coast Rep	End Jan 2019	22/01/2019; 29/01/2019
Landowner- adjoining	S 9(2) (a) [REDACTED]	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	VCS	End Feb 2019	26/02/2019
Landowner- adjoining	S 9(2)(a) [REDACTED] [REDACTED]	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	VCS	End Feb 2019	4/3/2019

Landowner- adjoining	S [REDACTED] 9(2)	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	VCS	End Feb 2019	21/02/2019
Concessionaire	S 9(2)(a) [REDACTED]	Effects of proposed operation on farming operations, and risk to stock	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	VCS	End Feb 2019	21/02/2019
Concessionaire	S 9(2) (a) [REDACTED]	Effects of proposed operation on farming operations, and risk to stock	To discuss what we can do about the effects of the plan on you	Visit to talk through any concerns followed by a mail out of key facts and other supporting information	S 9(2)(a) [REDACTED]	End Feb 2019	21/02/2019

Government	LINZ	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Email to talk through any concerns followed by a mail out of key facts and other supporting information	S 9(2)(a)	End Feb 2019	5/2/2019
Local government	Hurunui District Council	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Email to talk through any concerns followed by a mail out of key facts and other supporting information	S 9(2)(a)	End Feb 2019	8/2/2019
Local government	Selwyn District Council	Effects of proposed operation on adjoining property	To discuss what we can do about the effects of the plan on you	Email to talk through any concerns followed by a mail out of key facts and other supporting information		End Feb 2019	8/2/2019

Hunting	Pending OIA consultation S 9(2)(a)	Use of 1080 in the Recreational Hunting Area (RHA) and its implication on the ungulate population.	To discuss what we can do about the effects of the plan on you	Meeting to talk through any concerns followed by a mail out of key facts and other supporting information	S 9(2)	End Feb 2019	28/01/2019
Police	S 9(2)(a)	Public concern about 1080	To discuss what support may be needed throughout the operation	Visit	S 9(2)	End Feb 2019	5/3/2019

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## 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.

MOH Consent to be supplied once received

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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.

### Effects on non-target native species

Target benefit species	<p><u>THREATENED</u>  <i>Cyanoramphus malherbi</i>  <i>Apteryx haastii</i></p>	<p><b>Orange fronted kākāriki</b>            Great spotted kiwi, roroa</p>
Non-target species	<p><u>THREATENED</u>  <i>Anas superciliosa</i>  <i>Cyanoramphus malherbi</i>  <i>Larus bulleri</i>  <i>Xenicus gilviventris</i> “northern”  <i>Chlidonias albobristatus</i>  <i>Nestor notabilis</i>  <i>Apteryx haastii</i>  <i>Charadrius bicinctus bicinctus</i>  <i>Hymenolaimus malachorhynchus</i>  <i>Nestor meridionalis meridionalis</i>  <i>Podiceps cristatus australis</i></p>	<p>Grey duck  <b>Orange fronted kākāriki</b>            Black-billed gull            Northern rock wren            Black-fronted tern            Kea            Great spotted kiwi, roroa            Banded dotterel            Blue duck, whio            South Island kaka            Southern crested grebe</p>
	<p><u>AT RISK</u>  <i>Anthus novaeseelandiae</i>  <i>Haematopus finschi</i>    <i>Petroica australis australis</i>  <i>Falco novaeseelandiae</i>  <i>novaeseelandiae</i>  <i>Mohoua ocreocephala</i>  <i>Eudynamys taitensis</i>  <i>Phalacrocorax carbo</i>  <i>novaehollandiae</i></p>	<p>New Zealand pipit            South Island pied oystercatcher            South Island robin            Eastern falcon              Mohua, yellowhead            Long-tailed cuckoo            Black shag</p>
	<p><u>NON-RESIDENT NATIVE</u>  <i>Phalacrocorax melanoleucos</i>  <i>melanoleucos</i></p>	<p>Little pied cormorant</p>
	<p><u>NOT THREATENED</u>  <i>Acanthisitta chloris chloris</i>  <i>Anas gracilis</i>  <i>Anas rhynchotis</i>  <i>Anthornis melanura melanura</i>  <i>Aythya novaeseelandiae</i></p>	<p>South Island rifleman            Grey teal            Australasian shoveler            Bellbird            New Zealand scaup</p>



<i>Chrysococcyx lucidus lucidus</i>	Shining cuckoo	Not threatened
<i>Circus approximans</i>	Swamp harrier	Not threatened
<i>Cyanoramphus auriceps</i>	Yellow-crowned parakeet	Not threatened
<i>Egretta novaehollandiae</i>	White-faced heron	Not threatened
<i>Gallirallus australis australis</i>	Western weka	Not threatened
<i>Gerygone igata</i>	Grey warbler	Not threatened
<i>Hemiphaga novaeseelandiae</i>	New Zealand pigeon, kereru	Not threatened
<i>Himantopus himantopus leucocephalus</i>	Pied stilt	Not threatened
<i>Hirundo neoxena neoxena</i>	Welcome swallow	Not threatened
<i>Larus dominicanus dominicanus</i>	Southern black-backed gull	Not threatened
<i>Mohoua novaeseelandiae</i>	Brown creeper	Not threatened
<i>Ninox novaeseelandiae novaeseelandiae</i>	Morepork	Not threatened
<i>Petroica macrocephala macrocephala</i>	Yellow-breasted tomtit	Not threatened
<i>Phalacrocorax melanoleucos brevirostris</i>	Little shag	Not threatened
<i>Prosthemadera novaeseelandiae novaeseelandiae</i>	Tui	Not threatened
<i>Rhipidura fuliginosa fuliginosa</i>	South Island fantail	Not threatened
<i>Tadorna variegata</i>	Paradise shelduck	Not threatened
<i>Todiramphus sanctus vagans</i>	New Zealand kingfisher	Not threatened
<i>Vanellus miles novarhollandiae</i>	Spur-winged plover	Not threatened
<i>Zosterops lateralis lateralis</i>	Silvereye	Not threatened

Effect of operation on native species

The proposed operation will have a significant beneficial effect on the health of the indigenous forest ecosystem in general and on specific plant and animal taxa.

Studies of native forests and birds have shown the widespread benefits of using 1080 to control rats and, subsequently possums and mustelids. The ecosystems response to the effective control of rats will vary between species due to the subtle impact rats have through the disruption to the lifecycles of native plants and animals.

The impacts of rats in the ecosystem vary from the consumption of seeds, predation of insects, **bird's** eggs, chicks and nesting adult birds resulting in a ripple effect throughout the forest. The effects of rats on the ecosystem extend from disrupting plant recruitment, predation of birds and insects that assist with pollination, to sustaining high mustelid populations that also predate on bird and insect species present in the control area.

The ecosystem as a whole is disrupted by the presence of rats, not just the orange fronted **kākāriki** and great spotted kiwi this operation is planned to benefit. Improving the breeding success of birds and nesting adult survival during beech seed mast events through the effective control of rats and other predators, improves biodiversity and benefits the ecosystem.

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Research suggests the direct effect of 1080 toxins on invertebrates is likely to be minimal while removing known predators.

It is possible deaths could occur in some bird species though population recovery is normally within one breeding season. The relatively low sowing rate of 3kg/ha, coupled with the 6 gram RS5 pellet size will effectively target rats.

**The disturbance of “normal” predator-prey relationships** between the introduced and native fauna caused by the aerial poisoning of rats and possums with 1080 is not clearly understood in terms of cause and effect, but the overall net effect on the ecosystem is one of profound benefit due to the successful control of rats, possums and the subsequent control of mustelids.

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Performance standards and information needs	The operation will use 6 gram RS 5 cereal baits sown at 3kg per hectare to comply with the DOC Code of practice for aerial 1080 in kea habitat DOC-2612859. Where required appropriate exemptions will be sought from the Department.
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## Effects on non-target domestic and feral animals

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Non-target species	Cattle, deer, chamois, goats, sheep, horses, dogs, cats, rats, mice and <b>mustelid's</b> are all found within or near the operational area.
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Effects of operation on domestic and feral animals

All of the identified species listed are at risk from direct or secondary poisoning from 1080. 1080 poses a high risk to dogs and stock, with dogs being especially vulnerable to secondary poisoning. 1080 poisoned carcasses are toxic to dogs and may last for up to 6 months after control; however a risk will remain until carcasses have completely broken down.

Other domestic animals on the adjoining properties are cattle, sheep, horses, deer and cats. All of these animals are potentially susceptible to direct or secondary poisoning however this is highly unlikely. Direct poisoning would only be possible by access to the baits by either mis-application or stock accessing the block. Mitigation strategies are in place with the adjoining landowners to reduce the opportunities for this. These include moving stock back one fenced paddock

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from the edge of the control area where possible, and ensuring a non sowing buffer is in place where cattle may have access to bait during the boundary inspection. An aerial inspection of the boundary prior to applying toxic baits will also be undertaken to ensure stock are not in the control area. Over flights are also quickly recognised during inspection of the parallel boundary sowing aircraft GPS data immediately after the conclusion of bait application on boundaries. If an overflight occurs management strategies are in place to initiate further remedial actions should any overflights be identified.

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Performance standards and information needs

VCS will erect warning signs at all points of entry identified during the consent process to identify access points to land administered by the department. Warning signs will clearly identify the risks to dog owners. Signs will include a map of the operational area at main access points. The locations of all warning signs are recorded using GPS.

Bait and carcass monitoring will be undertaken and warning signs will remain in place until carcasses have completely broken down. Baits will be caged to prevent any interference and provide an accurate assessment of breakdown. VCS will record the location of all bait and carcass monitoring sites with a GPS and take photographs at the time of installation and removal.

The operation **will be included in the department's quarterly pesticide summary** to inform holders of hunting permits of where and when pesticides have been laid on public land. VCS will also **upload a map of the operational area onto it's webpage** for the public access.

Huts will also be checked for occupants when the warning signs are installed the day before toxic bait application. Any occupants will be briefed on the planned activity.

**DOC audit staff will audit VCSs' compliance with consent and contractual conditions.**

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## Further information

Further  
information

N/A

## References

The following published references were used in developing this AEE:

- K Broome, P Fisher & A Fairweather, (Compilers). Sodium fluoroacetate. A Review of Current Knowledge. Version 1.11. DOCDM-25427: Fairweather A. (Comp.) Department of Conservation Pesticide Information Reviews. Northern Regional Office, Hamilton N.Z. (Unpublished)
- Application Form for Aerial 1080 Predator Control in the Hawdon, Andrews, Poulter and South Hurunui Valleys November 2017 – March 2018. D Turner
- Records of discussions with adjoining and internal landowners

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## Appendix 6:

If you need to add further appendices please copy and paste the entire heading above and then change the appendix number and title. This will ensure that the formatting is retained and the text will be transferred to the Table of Contents.

After completion of this form please remember to update the Table of Contents (right **click on the table of contents for the 'update field' option**).

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