



Department of Conservation
Te Papa Atawhai

12 September 2019

Director-General
Department of Conservation
1 Arthurs Point Road
Arthurs Point
Queenstown

CC: permissions@epa.govt.nz
Delivery Planner (Biodiversity)

ATTENTION: s9(2)(g)(ii)

PERMISSION ID 6032917:
DART ROUTEBURN CAPLES – RAT CONTROL OPERATION

Permission is granted under:

- *Section 95A of the Hazardous Substances and New Organisms Act 1996*
- *Sections 53 and 54 of the Wildlife Act 1953*
- *Section 38 of the Conservation Act 1987*
- *Sections 5 and 51A of the National Parks Act 1980*

for the Director-General of the Department of Conservation or any person acting under his authority (including contractors) to apply:

- Sodium fluoroacetate 1.5g/kg cereal pellet, aerial and hand-laid (including deer repellent)

on or after 12 September 2019 until 30 April 2020 and undertake the actions approved under the above Acts on the lands managed and administered by the Department of Conservation and, as appropriate, the other lands listed below and shown on the **attached map**:

1. 2821.57ha of the Mount Aspiring National Park, a National Park under the National Parks Act 1980
2. 8627.97ha of the Caples Conservation Area, a Stewardship Area under section 25 of the Conservation Act 1987
3. 2592.82ha of the Lower Dart Conservation Area, a Stewardship Area under section 25 of the Conservation Act 1987
4. 649.77ha of the Conservation Area – Ka Whenua Roimata (Ngai Tahu Giftback), a Stewardship Area under section 25 of the Conservation Act 1987
5. 81.52ha of the Conservation Area – Dan's Paddock, a Stewardship Area under section 25 of the Conservation Act 1987
6. 0.17ha of the Conservation Area – Routeburn, a Stewardship Area under section 25 of the Conservation Act 1987
7. 816.94ha of Land administered by LINZ (hydro parcel)
8. 49.6ha of Legal Roads (Queenstown-Lakes District Council)

This operation is approved for the purpose of controlling rats to protect and enhance the populations of native species present in the treatment area including kea, mohua, kakariki, kaka, South Island robin and bats. It is recognised that this operation may kill other pests.

The operation may include two applications of bait if operational targets are not achieved from the first application. If this second application is considered necessary, it must take place before 1 April 2020.

The permission is given subject to the requirement that the operation:

- Is carried out generally as described in the Application Form submitted July 2019
- Meets the conditions shown in the attached sheets of DOC Performance Standards for Pesticide Use Numbers #1 and #140 (Condition 2 being deleted). Condition 2 is replaced with a requirement that the DOC Code of Practice for aerial 1080 in kea habitat (DOC-2612859) is followed, with the exception of standards 1 and 3. Deer repellent EDR is to be added and the sowing rates are 2.6kg/ha. These exemptions have been made based on specialist advice.
- Meets the conditions shown in the attached sheets of DOC Performance Standards for Pesticide Uses Numbers #2 and #141
- Has a readiness check completed to the satisfaction of the Director Operations, Southern South Island prior to each application of toxic bait.

Notwithstanding that the permission holder must comply with these requirements, it is acknowledged that there is a possibility indigenous animals may be killed and so this permission authorises such deaths for the greater protection of indigenous species.

Auditing may occur to establish whether those conditions are being met. If not, the permission will be revoked and further action may ensue.

s9(2)(g)(ii)

s9(2)(g)(ii) Director National Operations

Pursuant to a written delegation from:

- The Chief Executive, Environmental Protection Authority for section 95A of the Hazardous Substances and New Organisms Act 1996
- The Director-General of Conservation for sections 53 and 54 of the Wildlife Act 1953
- The Director-General of Conservation for section 38 of the Conservation Act 1987
- The Minister of Conservation for sections 5 and 51A of the National Parks Act 1980

Enc: **Map(s):**

See below

DOC Performance Standards:

#1 [DOC-6032326](#)

#140 [DOC-6032324](#)

#2 [DOC-6032328](#)

#141 [DOC-6032327](#)

Application Assessment Report:

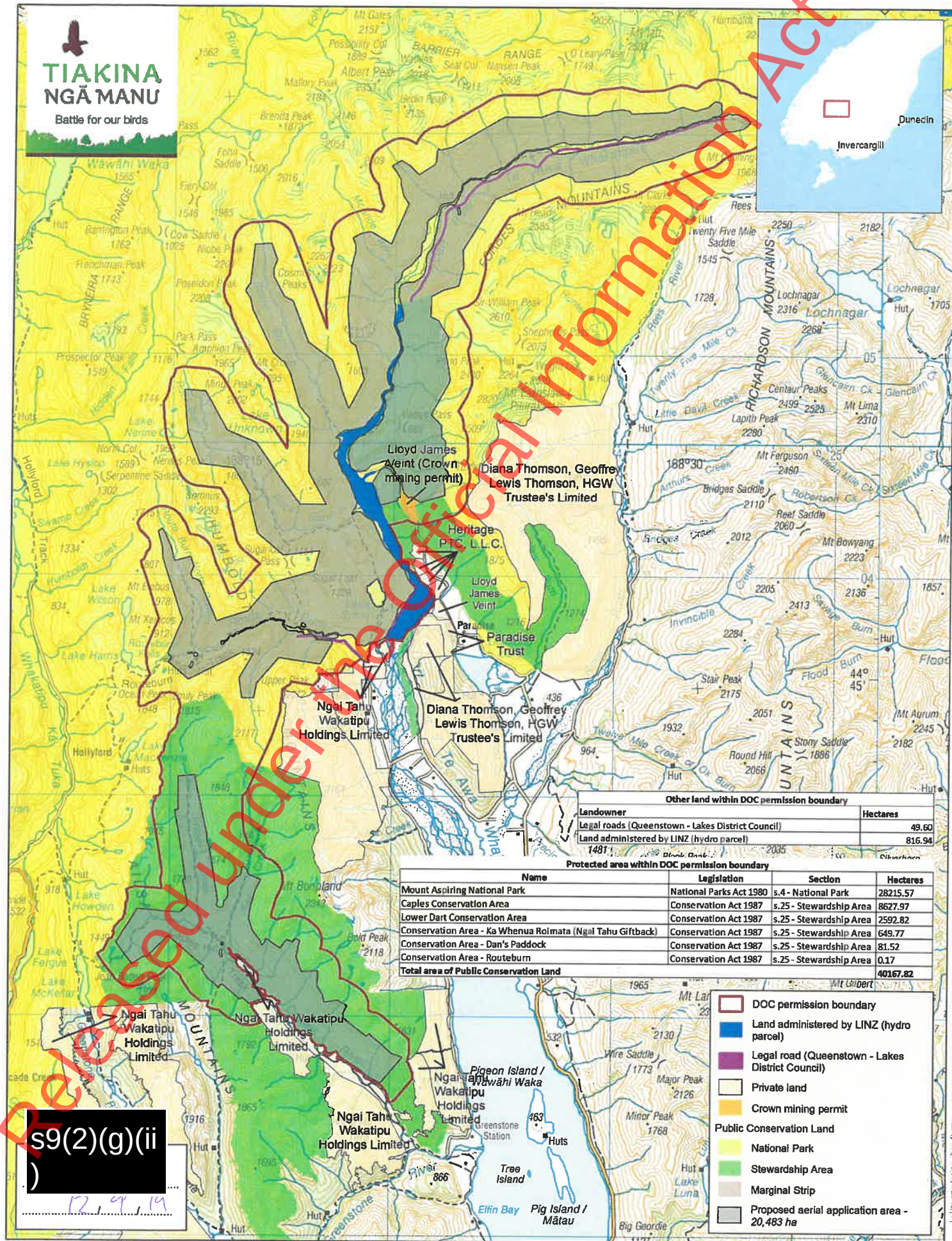
See [DOC-6032330](#)

Ref: 6032917

Released under the Official Information Act

TIAKINA NGĀ MANU

Battle for our birds



Other land within DOC permission boundary	
Landowner	Hectares
Legal roads (Queenstown - Lakes District Council)	49.60
Land administered by LINZ (hydro parcel)	816.94

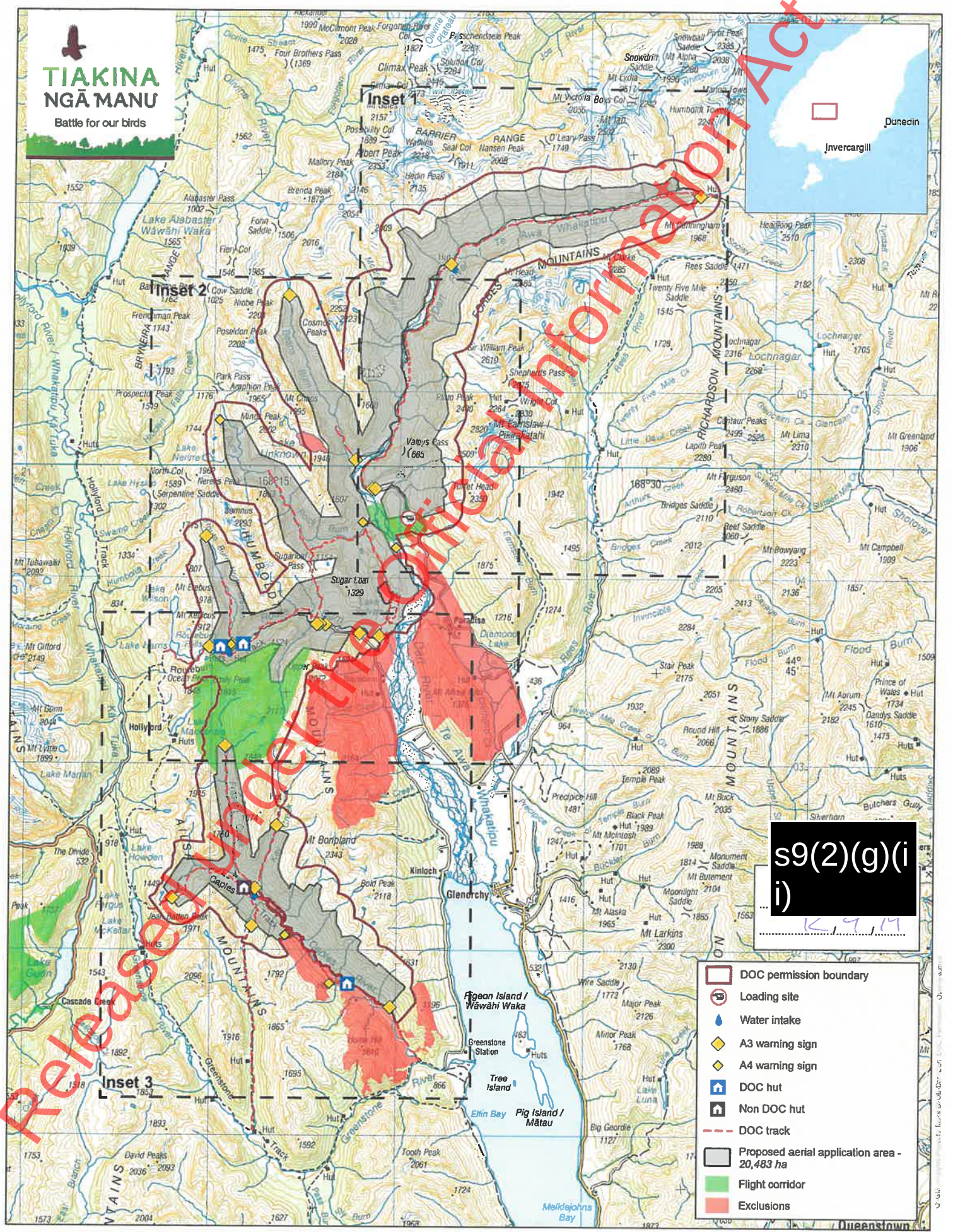
Protected area within DOC permission boundary			
Name	Legislation	Section	Hectares
Mount Aspiring National Park	National Parks Act 1980	s.4 - National Park	28215.57
Caples Conservation Area	Conservation Act 1987	s.25 - Stewardship Area	8627.97
Lower Dart Conservation Area	Conservation Act 1987	s.25 - Stewardship Area	2592.82
Conservation Area - Ka Whenua Roimata (Ngai Tahu Giftback)	Conservation Act 1987	s.25 - Stewardship Area	649.77
Conservation Area - Dan's Paddock	Conservation Act 1987	s.25 - Stewardship Area	81.52
Conservation Area - Routeburn	Conservation Act 1987	s.25 - Stewardship Area	0.17
Total area of Public Conservation Land			
40167.82			

- DOC permission boundary
- Land administered by LINZ (hydro parcel)
- Legal road (Queenstown - Lakes District Council)
- Private land
- Crown mining permit
- Public Conservation Land**
 - National Park
 - Stewardship Area
 - Marginal Strip
 - Proposed aerial application area - 20,483 ha

s9(2)(g)(ii)

TIAKINA NGĀ MANU

Battle for our birds



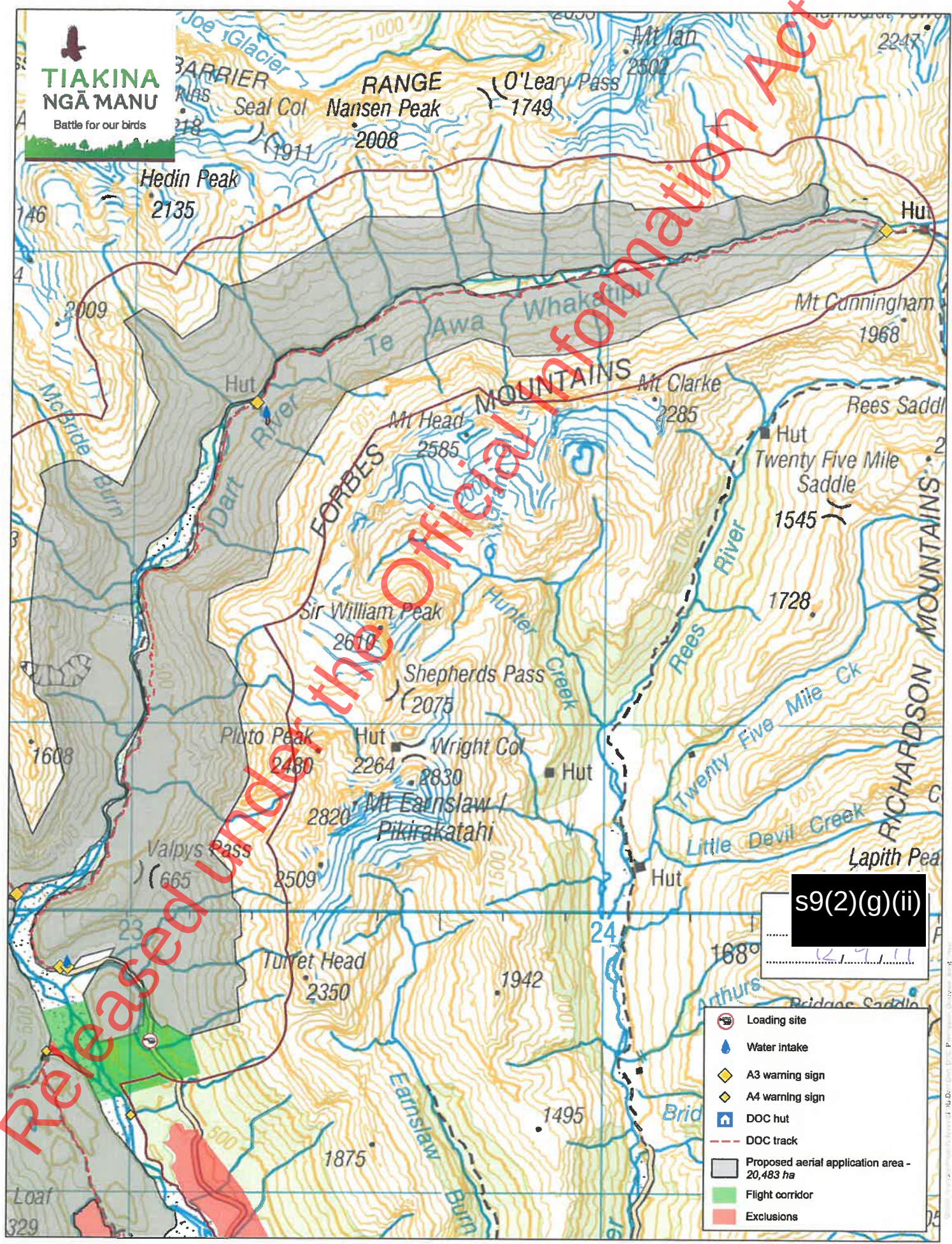
- DOC permission boundary
- Loading site
- ▲ Water intake
- ◆ A3 warning sign
- ◇ A4 warning sign
- H DOC hut
- H Non DOC hut
- DOC track
- Proposed aerial application area - 20,483 ha
- Flight corridor
- Exclusions

2 km
1:175,000
NZGD 2000 New Zealand Transverse Mercator
Not for navigation
Crown Copyright Reserved
Basemap: LINZ Topo250 / 50
DOC, Geospatial Services
7/08/2019

Dart - DOC Permission Application
Aerial Predator Control 2019 - Overview
Area of DOC permission application: 41,034 ha



Department of
Conservation
Te Papa Atawhai
New Zealand Government



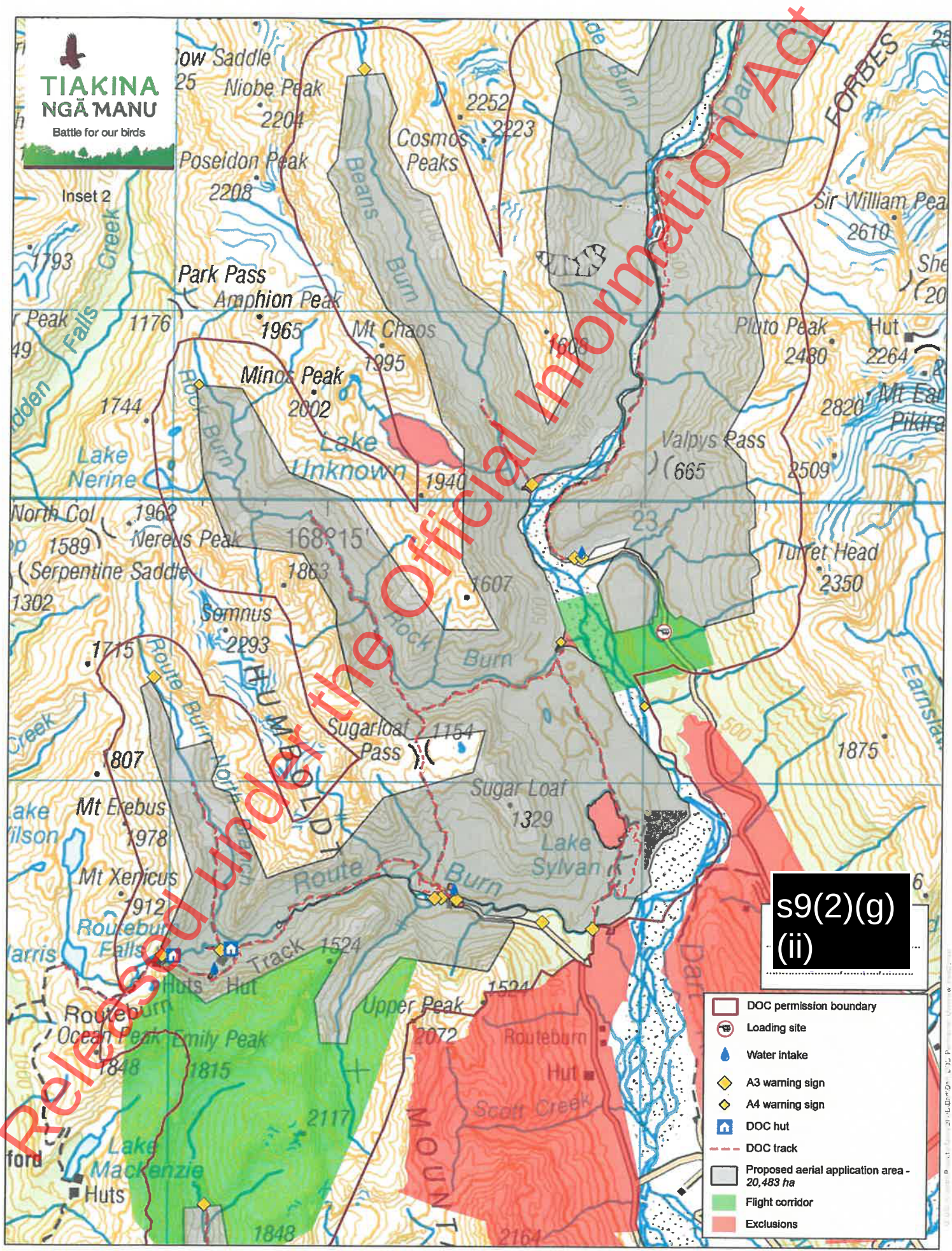
**TIAKINA
NGĀ MANU**
Battle for our birds

- Loading site
- Water intake
- A3 warning sign
- A4 warning sign
- DOC hut
- DOC track
- Proposed aerial application area - 20,483 ha
- Flight corridor
- Exclusions

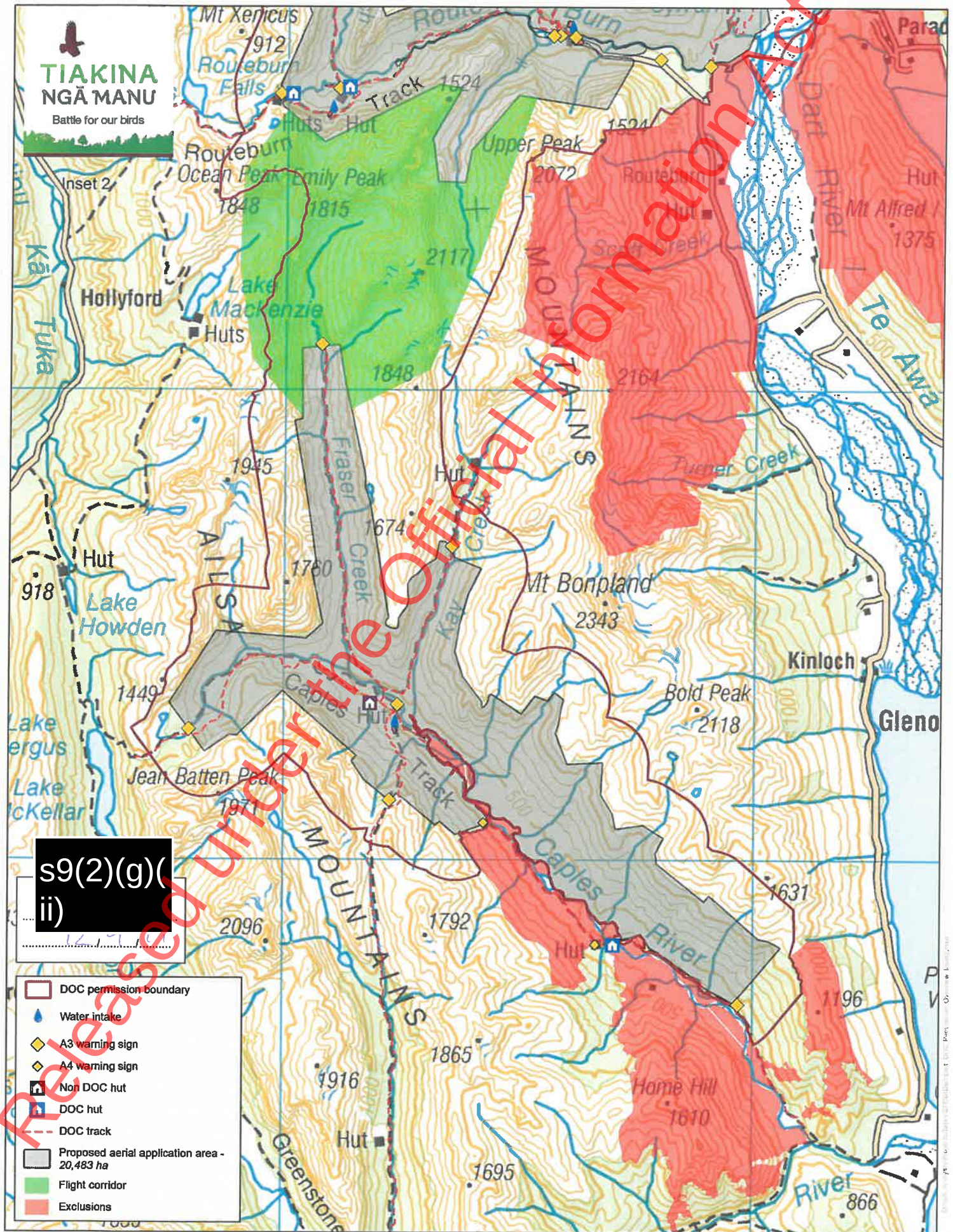
1:70,000
NZGD 2000 New Zealand Transverse Mercator
Not for navigation
Crown Copyright Reserved
Basemap: LINZ Topo250 / 50
DOC, Geospatial Services
7/08/2019

Dart - DOC Permission Application
Aerial Predator Control 2019 - Inset 1
Area of DOC permission application: 41,034 ha


Department of Conservation
Te Papa Atawhai
New Zealand Government



Dart - DOC Permission Application
Aerial Predator Control 2019 - Inset 2
Area of DOC permission application: 41,034 ha



Dart - DOC Permission Application
Aerial Predator Control 2019 - Inset 3
Area of DOC permission application: 41,034 ha



Department of
Conservation
Te Papa Atawhai
New Zealand Government

♦ INCLUDE ONE SHEET PER PESTICIDE USE ♦ COMPLETE SHADED AREAS ♦

Pesticide Use #1	Sodium fluoroacetate 1.5g/kg Cereal pellet Aerial (0.15% 1080 Pellet)	Target Pests: Possums, Rats
-------------------------	--	------------------------------------

Location of operation
Dart Routeburn Caples Valleys



Caution Period
The estimated caution period for this operation is 9 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.

Performance Standards
<i>Compulsory for <u>all</u> operations</i>
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 [See replacement condition in Permission] 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.
<i>Compulsory for this operation</i>
10. Bait sowing rate must be no greater than 2.6kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes).

Information Needs
<i>Compulsory for <u>all</u> operations</i>
Nil
<i>Compulsory for this operation</i>
Nil

Operational Planning & Design Considerations
▪ 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 12/9/19
Compliance monitoring may occur.

is subject to the s9(2)(g)(ii) being met.

s9(2)(g)(ii), Director National Operations

Released under the Official Information Act

♦ INCLUDE ONE SHEET PER PESTICIDE USE ♦ COMPLETE SHADED AREAS ♦

Pesticide Use #2	Sodium fluoroacetate 1.5g/kg Cereal pellet Handlaying (0.15% 1080 pellet)	Target Pests: Possums, Rats
-------------------------	--	--

Location of operation

Dart Routeburn Caples Valleys



Caution Period

The estimated caution period for this operation is 9 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.

Performance Standards

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

5. Bait sowing rate must be no greater than 2.6kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes).

Information Needs

Compulsory for all operations

Nil

Compulsory for this operation

Nil

Operational Planning & Design Considerations

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

My approval dated 12/4/19
Compliance monitoring may occur.

is subject to the conditions being met.

s9(2)(g)(ii)

s9(2)(g)(ii)

Director National Operations

♦ 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
---------------------------	---	------------------------------------

Location of operation

Dart Routeburn Caples Valleys



Caution Period

The estimated caution period for this operation is 9 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.

Performance Standards

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 [See replacement condition in Permission]
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

10. Bait sowing rate must be no greater than 2.6kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes).

Information Needs

Compulsory for all operations

Nil

Compulsory for this operation

Nil

Operational Planning & Design Considerations

- 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 12/9/19
met. Compliance monitoring may occur.

is subject to the

s9(2)(g)(ii)

ards being

s9(2)(g)(ii)

Director National Operations

Released under the Official Information Act

♦ INCLUDE ONE SHEET PER PESTICIDE USE ♦ COMPLETE SHADED AREAS ♦

Pesticide Use #141	Sodium fluoroacetate 1.5g/kg Cereal pellet Hand laying (Pestex)	Target Pests: Possums, Rats
---------------------------	--	--

Location of operation
Dart Routeburn Caples Valleys

**Caution Period**

The estimated caution period for this operation is 9 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.

Performance Standards*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

5. Bait sowing rate must be no greater than 2.6kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes).

Information Needs*Compulsory for all operations*

Nil

Compulsory for this operation

Nil

Operational Planning & Design Considerations

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

My approval dated 12/9/19
Compliance monitoring may occur.

is subject to these s9(2)(g)(ii) s being met.

s9(2)(g)(ii) Director National Operations

Application for DOC permission to use VTAs: assessment report

Applicant name:	DOC Senior Ranger s9(2)(g)(ii)
Operation name:	Dart Routeburn Caples
Approving manager:	s9(2)(g)(ii) Director National Operations
Assessor:	s9(2)(g)(ii)
Date received:	July 2019 (Reviewed and updated by Tiakina Nga Manu support staff August 2019 due to Technical Advisory Group (TAG) advice re changes to required sowing rates in the unprecedented 2019 mast conditions)
Overview:	To control rats in the Dart, Routeburn and Caples Valleys (following a rat irruption triggered by a beech mast event) it is proposed that the following pesticide uses will be applied: • Pesticide Use #1 Sodium fluoroacetate 1.5g/kg cereal pellet aerial • Pesticide Use #2 Sodium fluoroacetate 1.5g/kg cereal pellet hand-laying • Pesticide Use #140 Sodium fluoroacetate 1.5g/kg cereal pellet aerial • Pesticide Use #141 Sodium fluoroacetate 1.5g/kg cereal pellet hand-laying Permission is sought for one toxic application starting on or after 1 September 2019 and ending on or before 30 April 2020. Non-toxic prefeed will be applied no earlier than 1 September 2019. Permission is also sought to allow for another possible toxic application if the result targets are not achieved. This would take place around February 2020 dependent on post-op target monitoring results. <u>Location</u> The Dart/Routeburn treatment block begins approx. 12 km NW of Glenorchy township and extends northwards.
Applicant type:	DOC applicant—DOC SOPs will apply.

Step 1 Confirm application is complete Are all documents (listed below) provided?

DOC Application form complete:	The Application form was completed to a high standard for assessment with no significant information gaps. The Application form is linked at DOC-5739713 It included the AEE section, which assesses the actual and potential environmental effects of controlling rats in this area with this methodology. The operational area will be treated as one treatment block.
Are all the proposed pesticide use(s) accepted for use?	Yes.
Performance standards sheets	The correct Performance Standards sheet templates were supplied by the applicant. PU#1, #2, #140 and #141 see below.
DOC permission map(s) (image file or files)	An acceptable standard of maps were provided.
DOC Pesticide Summary shapefiles	All relevant data has been entered into the DOCgis pesticide application to standard.
Consultation record including conditions of landowner consents	There is an ongoing consultation and notification process in place. See communication plan for full details: DOC-5624631 The communication plan is comprehensive and being continually updated. This includes: • Letters to, and consultation with relevant Iwi: • Office of Te Runanga o Ngai Tahu • Otago Te Roopu - represents Hokonui, Puketeraki, Moeraki and Otakou runanga • Southland Kaitiaki Roopu - represents Oraka-Aparima, Awarua, Hokonui and Waihopai runanga • Public notices, information sheets and notification to key user groups prior to works being undertaken. • WARO groups notified • Adjacent landowners/Occupiers consulted and notified. • Police, Medical Centres, Schools and Vets notified. • Local Council consulted re water intakes See also:

	- Letter of consent for access from Land Information New Zealand: DOC-5938882 - Email from Otago Regional Council on the exemption of 1080 under the RMA: DOC-5993722 - Letter of consent for paper roads from QLDC: DOC-6022546
Public health permission/ proof of application	PHP has been granted see: PHP Permission DOC-6026506 PHP Permission Map DOC-6026504
Other (specify, e.g. RMA consent)	N/A
Your confirmation email and subsequent correspondence	Email confirmation was provided on 14 th July 2019. Received notification of changes to the treatment boundaries on 15 th July 2019 And mapping that reflected the changes where completed by the 19 th July 2019 Received email to confirm the granting of PHP permission on the 30 th July 2019 Note below, correspondence from the TAG
Step 2 Capture treatment blocks in the Pesticide Application	
Your publication of the proposed operation on the DOC Pesticide Summary	Proposed control operation is in the DOCgis pesticide application and set at proposed publish.
Step 3 Evaluate control method <i>Is the proposed method suited to the pest problem, treatment area and consultation outcomes?</i>	
Your assessment of the control method	Aerial distribution of 1080 is the only viable method for achieving a rapid knockdown of rats over this size of area and terrain and in a short timeframe. The control method is in line with DOC national practices for rat and possum control over large areas. The history of controls confirms this is an effective control strategy for this area. Outcome monitoring in this area has shown control techniques to be effective in reducing pest numbers for conservation gains. Proposed methods comply with the latest DOC Technical Advisory Group (TAG) advice around required sowing rates in the unprecedented 2019 mast year. Section 4 of the application describes the proposed control methods

and justifies their use for this operation.
From application (DOC-5739717):

The results from May 2019 tracking tunnels show tracking of 19% in the Caples valley and 23% for rats in the Dart Valley, both within the proposed operational area (and this is expected to rise).

August 2019 update:

Results from the Dart, Routeburn, Caples Valley tracking tunnels, show rats at 12% in the Caples valley and 25% in the Dart Valley.

Updated advice received from the Tiakina Nga Manu Technical Advisory Group (TAG) in August 2019:

A higher sowing rate than 1.5 kg/ha may be required for this operation to be successful due to the effect of the current mast conditions.

The technical advisers have concluded that the revised sowing rates are likely to result in more effective results in terms of rat mortality, and any potential effects of the increase in sowing rates on non-target native species is low and acceptable (see TAG advice, DOC-6036962).

A sowing rate of 2.6kg/ha has been recommended for this operation. This rate does not comply with the kea code of practice which allows 2/kg ha in kea habitat, an exemption will be gained for this. This rate is within the sowing rate limit allowed by the PHU consent

This year's unprecedented 'mega mast' has provided abundant food for rats, making predator control more challenging. The monitoring results for the three recently completed aerial 1080 operations show nearly 20% rat survival, significantly more than hoped at less than 5%. The exceptional amount of seed from the South Island's biggest beech mast in 40 years means rats don't need to travel far for food and their home ranges. Gaps in bait coverage have left pockets of rodents that wouldn't travel far enough to be exposed to the bait.

It is vital that this operation is successful in order to avoid losing local populations of native species such as mohua, kaka, kakariki and kea, which are vulnerable to rat plagues.

The TAG has recommended a higher bait application rate for some operations to ensure more even bait spread. This adjustment aims for complete bait coverage to reach all rats, and will be applied by sowing baits in overlapping swathes, so that the entire area is sown with baits twice and there is no possibility of gaps. By sowing twice and achieving the same kill rate for each individual swath, the operation is expected to achieve at least a 94% mortality for rats.

The proposed sowing rate of 2.6kg/ha for this operation exceeds the

	guidance in the current Method Best Practice for BFOB aerial 1080 baiting which has specified 1.5kg/ha as current guidance. The operation will continue to meet other best practice guidance and will comply with the Code of Conduct for aerial 1080 operations in Kea habitat. It is proposed to use Deer repellent bait (EDR) across the entire treatment area as per agreement with the NZDA and Game Animal Council see DOC-6068781. [Note: It is the combination of the EDR and the increased bait which results in a sowing rate of 2.6kg/ha, whereas other operations have been increased to 2.0 kg/ha.]
Label directions	Proposed methods are in compliance with product label.
Summary of any technical advice received on the proposed control methods.	Updated advice received from the Tiakina Nga Manu Technical Advisory Group (TAG) in August 2019 re sowing rates: DOC-6036962 TAG are satisfied the use of EDR and the 2.6 kg/ha sowing rate for this operation is necessary (see DOC-6069149).
Summary of any Community relations and Pou Tairangahau advice received.	Nil – Communication plan shows comprehensive consultation and notification has occurred.
Step 4 Identify and assess risks and adverse effects <i>Are you satisfied that all risks and adverse effects have been identified?</i>	
Are there any gaps in the applicant's assessment of these	The AEE shows a good awareness of possible risks and adverse effects to non-target species using the proposed methodology.
Relevant points from the DOC Pesticide Information Reviews	From DOC 1080 Review: Fairweather, A.A.C.; Broome, K.G. 2018: Sodium Fluoroacetate Pesticide Information Review. Version 2018/6. Unpublished report docdm-25427, Department of Conservation, Hamilton, NZ. 134p.: There have been numerous studies examining the effects of aerial poisoning on native non-target populations over the last 20 years. 24 species of native birds, particularly threatened species, have been monitored. None of the studies have identified population level mortality which threatened the viability of the species. A total of 60 radio tagged Kaka have been exposed to this method and bait type over 4 operations and none have died from poisoning. Falcon territories remained occupied, presumably by the resident birds,

	during four aerial 1080 operations using cereal pellets (Pureora 1984, Mapara 1990-92) and one using carrot bait (Waihaha 1994) (Spurr & Powlesland 1997). The total number of falcon involved in this monitoring was about 13, although the Mapara birds (3 pair) were exposed in three consecutive years (Calder & Deuss 1985; Bradfield 1993; Greene 1998). Australasian harrier have not been monitored individually when exposed to this method and bait type. However no detectable impact could be determined through five minute bird count monitoring before and after an aerial 1080 operation using cereal pellets on Rangitoto island and "the small resident population was still seen...throughout the year following the poisoning" (Miller & Anderson 1992). Additionally, Pierce & Maloney (1989) found no evidence of dead harriers after aerial 1080 poisoning of rabbits in the McKenzie basin. A total of 222 radio tagged Kea have been exposed to this method and bait type over 19 operations and 24 have died from poisoning. Limited monitoring of short tailed bats and native frogs has not indicated detectable mortality due to aerial 1080 poisoning. The risks 1080 operations pose to aquatic species is considered very low. Fish are very tolerant to 1080. Additionally, 1080 contamination of water is rarely found during 1080 operations and is at an extremely low level when it has occurred. In extreme cold and drought, 1080 residues could persist in baits for several months. There is wide variation between species in their susceptibility to 1080 poisoning. Dogs are especially vulnerable and highly likely to die if they eat 1080 baits or scavenge animals killed by 1080.
Summary of any technical or community relations advice received	See TAG advice on risk to native species above.
Other resources consulted	Method Best practice for Battle for our Birds Aerial 1080 baiting Version 1.5 July 2018 Kea survival during aerial poisoning for rat and possum control s9(2)(g)(ii) s9(2)(g)(ii) s9(2)(g)(ii) June 05, 2018
Your assessment of technical risks and adverse	Risk to non-target species is considered low and native species and their associated ecosystem will be advantaged by a reduction in rodent numbers and by-kill of stoats. The proposed methods comply with the

effects	latest TAG recommendations and are suitable for the site. The treatment area is in kea habitat: http://intmaps/richmapviewer/?Viewer=DOCgis&Project=c59a7d94-d568-495b-ab00-0016f8be2827 The DOC Code of Practice (COP) for aerial 1080 in kea habitat <u>DOC-2612859</u> will be followed, with proposed exemptions. The risk to kea is considered low as the operational area is remote and resident kea are not habituated to interacting with people or foreign food items. The operation is not near an identified 'scrounging site' as described in the document below: Kea survival during aerial poisoning for rat and possum control. s9(2)(g)(ii) s9(2)(g)(ii) s9(2)(g)(ii) June 05, 2018
Your assessment of non-technical risks	Care has been taken to identify areas of risk and mitigation has been put in place to ensure there is little or no risk to the public. Loading site and flight corridors with loaded buckets are on public conservation land (PCL). A security firm has been engaged to ensure staff safety in the event of protest action around the loading site. From application: Adhering to the compulsory performance standards for each pesticide use will minimise risk. We expect there to be no adverse effects from these pesticides on domestic cattle and sheep. The Department will notify all neighbours. For mustelids, feral cats and rodents any adverse effects will be of benefit to native fauna. To mitigate the potential impact of an aerial 1080 operation on domestic dogs close liaison with affected neighbours will occur. Warning signs will remain in place until the caution period is over. The area is national park so no dogs are permitted and signs at every entry point will clearly state "no dogs". Hunters and Wild Animal Recovery Concessionaires will be notified of the application of toxins by email and via the on-line Pesticide Summary. The New Zealand Deer Stalkers Association (NZDA) has been consulted

	about the operation (and use of EDR, see DOC-6068781 for communication of decision to use EDR) and hunters will be notified of via the on-line Pesticide Summary.
Step 5 Calculate estimated caution period and evaluate if risks and adverse effects are at an acceptable level <i>Will risks be managed adequately with the performance standards proposed for this operation? Include dates and outcomes of any discussion with the applicant.</i>	
Estimated caution period for all the pesticide use(s)	Performance standard #1, #2, #140 and #141 - Caution periods set at 9 months after last date of bait application, as recommended in the CP calculator. Bait and carcass monitoring is required for 1080 operations.
How well does the proposed operation manage potential risks to native fauna?	Proposed control methods and performance standards are adequate to manage risk to native fauna. From AEE section of application: The following compulsory performance standards will apply: • Only use cinnamon lured RS5 pellets • Bait will be dyed green or blue • Bait will be screened to minimise undersized pellets The Code of Practice (COP) for Aerial 1080 Operations in Kea Habitat (DOC-2612859) will be followed, with proposed exemptions. The proposed use of deer repellent (EDR) and sowing rate of 2.6kg/ha does not meet performance standards 1, 2 and 3 of the kea COP: 1. Bait type: Only use cinnamon-lured RS5 prefeed and toxic baits. Cinnamon lure must be 0.15% in prefeed baits and 0.30% in toxic baits. (No other concentrations of cinnamon, or the use of other lures and additives such as repellents comply with this performance standard). 2. Prefeed sowing rates: Use a maximum of 4 kg/ha of prefeed bait for 12 g baits (or 2 kg/ha for 6 g baits, nominal sowing rates). 3. Toxic sowing rates: Use a maximum of 4 kg/ha of toxic bait for 12 g baits (or 2 kg/ha for 6 g baits, nominal sowing rates). An exemption from these standards (approved by a DOC Technical Advisor) will be sought in order to achieve compliance with the kea COP.
How well are other potential risks managed?	Applicant is experienced with this methodology and local environment so potential risks are well managed. The performance standards contained in Pesticide Use sheets minimise risk and will be adhered to. The Public Health Consent contains conditions to mitigate risk to human health (see below).

	The communication plan is comprehensive and the DOC pesticide summary and warning signs will also inform the public of the operation.
Are you satisfied with the proposed warning sign locations and normal points of entry?	Operational maps with all warning signs marked have been supplied and are adequate.
Summary of any technical or community relations advice received	N/A
Public health permission, including application form sighted (if not provided at time of application)	PHU application and permission supplied by applicant. The permission contains compulsory conditions that must be adhered to related to notifications, bait exclusion distances from huts/tracks/roads/public areas, track restrictions and clearances and water supplies. See PHU permission for the full list of conditions: PHP Permission DOC-6026506 PHP Permission Map DOC-6026504
Other resources consulted	Nil
Which additional performance standards should be applied and why?	No extra conditions required. See attached performance standard sheets: #1 (DOC-6032324) #2 (DOC-6032326) #140 (DOC-6032327) #141 (DOC-6032328)
Step 6 Make a recommendation <i>Should the application be approved or declined?</i>	
What key points should the approving manager have drawn to their attention?	This area has been treated with 1080 since 2006. Applicant is experienced with this methodology and local area so potential risks are well managed. The operation, through a reduction in rat and stoat numbers, should achieve the desired results. A second operation may be necessary in February 2020 dependent on result target monitoring. Kea are present in the area but risk to them from the operation is

	considered low and is outweighed by the benefit of pest control. Like all 1080 operations throughout New Zealand there is some concern by the public. To ameliorate any harm to DOC staff and contractors loading site security will be provided by First Security (under contract to CWACNZ) as part of the Tiakina Ngā Manu national security contract. There is a gate near the main road that will be looked and secured to control access onto the loading site. TAG has recommended a sowing rate of 2.6kg/ha for this operation which exceeds the guidance in the current Method Best Practice for BFOB aerial 1080 baiting (which has specified 1.5kg/ha as current guidance). Deer repellent will also be used over the entire treatment area. The technical advisers have concluded that the revised sowing rate is likely to result in more effective results in terms of rat mortality, and any potential effects of the increase in sowing rates on non-target native species is low and acceptable. TAG are satisfied the use of EDR and the 2.6 kg/ha sowing rate for this operation is necessary (see DOC-6069149). Approval of this specialist advice from TAG is recommended.
Is approval or decline recommended?	Approval recommended Readiness check is recommended
Step 7 Prepare documents and advise manager	
For recommended approval:	Letter : DOC-6032917 Maps: DOC-6035565 DOC Performance Standards: Performance standard 1 - DOC-6032326 Performance standard 2 - DOC-6032328 Performance standard 140 - DOC-6032324 Performance standard 141 - DOC-6032327

For recommended decline: <i>Attach draft letter of decline including a summary of reasons.</i>	N/A

Record of permission decisions that differ from the assessor recommendation	
Record of permission decision	

**Application Form for rodent
control in the Dart Routeburn
Caples**

August 2019

Name of applicant: s9(2)(g)(ii)

Company/organisation: Department of Conservation

Postal address: 1 Arthurs Point Road
Arthurs Point
Queenstown

Phone number: s9(2)(a)

Email address s9(2)(g)(ii)

Prepared by: s9(2)(g)(ii)



CONTENTS

1. INTRODUCTION	2
2. OUTCOMES AND TARGETS	3
3. CONSULTATION AND CONSENTS	3
4. METHODS	4
5. FURTHER INFORMATION	4
APPENDIX 1: DOC PERFORMANCE STANDARDS	6
APPENDIX 2: MAPS	8
APPENDIX 3: COMMUNICATION RECORD	9
APPENDIX 4: CONSENTS	10
APPENDIX 5: ASSESSMENT OF ENVIRONMENTAL EFFECTS	11
APPENDIX 6:	13

1. Introduction

1.1 Overview

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

- Pesticide Use 1 Sodium fluoroacetate 1.5g/kg cereal pellet aerial

Permission is sought for toxic application starting on or after 1 August 2019 and ending on or before 20 October 2019. Non-toxic prefeed will be applied no earlier than 1 August 2019.

1.2 Treatment area

Dart, Routeburn, Caples. 19,465ha

1.3 Treatment block(s)

Dart Routeburn – 15,552ha

Caples – 3,913ha

1.4 Geographical location

50km north west of Queenstown

1.5 Adjacent land tenure and uses

Adjacent land is a mixture of private farmland and conservation land.

1.6 Nearby residential areas or facilities

Glenorchy village – residential area, primary school

Paradise – limited housing, accommodation

Kinloch - camping ground

Sylvan - camping ground

1.7 Community interests

Several popular walking tracks, the Routeburn Track, Dart Track, Lake Sylvan track, Rockburn track and Beans Burn track are within the treatment area as are three public huts.

1.8 Management history

Aerial 1080 operations during beech mast years have been occurring since 2006. In 2006 and 2012 bait stations were also used in selected areas. Stoat trapping occurs year round throughout the treatment area. Aerial 1080 operations have been successful at reducing rodent numbers to near zero

following the operations, reducing pressure on native species during a rodent plague/beechn mast event. The key indicator species in the area, the mohua, is not yet on the increase but has been kept fairly stable since the large population crash (70% decline) when aerial 1080 was not used in response to the beech mast event in 2011.

2. Outcomes and targets

2.1 Conservation outcome(s)

To work to improve the survey results for Mohua to pre-2011 population crash levels in the Dart Valley of 2 groups per km by 2023.

2.2 Target(s)

<5% tracking rate for rodents within one month of the toxic operation completion.

3. Consultation and consents

3.1 Consultation

Consultation involves a willingness to adapt the proposed operation as a consequence of the information gained. Complete the Consultation Record in Appendix 3, identifying all individuals and groups you consulted with. Consultation with iwi and/or hapū is compulsory for aerial 1080 operations and recommended for other techniques.

Summarise for Tangata Whenua and other individuals or groups consulted:

- The significance of cultural or spiritual values within the treatment area
- Any sites of significance
- The outcome for your proposed operation (such as any changes made)

3.2 Consents

The following documents are attached as Appendix 4:

- ☐ Public health permission (including application form) or proof of public health application ¹ *[delete the options which do not apply]*

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

- ☐ Copies of landowner/occupier consents (if obtained in writing)
- ☐ Other (specify):
- ☐ Other (specify):

4. Methods

4.1 Treatment block 1 Dart Routeburn Caples

Pesticides—**aerial**

Describe the pesticide use, covering the following points:

Pesticide use 1

- Sodium fluoroacetate
1.5g/kg cereal pellet
aerial

Target pest

Ship rat

Brand name of pesticide	0.15% 1080 Pellets
Lure/mask (& %)	Cinnamon 0.33%
Type of pre-feed (lure/dye)	Cinnamon 0.15%
Number of pre-feeds (if any)	1
Sowing rates for pre-feed and toxic bait	1.5kg/ha
Other details about this method Use of deer repellent	

4.2 Justification for proposed method Dart Routeburn Caples

Explain why these method(s) and pesticide(s) have been chosen for treatment block 1. Consider consultation outcomes, risk management and Current Agreed Best Practice—Choose your control method.

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:	Contract Wild Animal Control New Zealand Ltd
Contact person:	
Contact number:	[postal address and phone number]

**Further
information**

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

Appendix 1: DOC Performance Standards

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

Pesticide Use #1	Sodium fluoroacetate 1.5g/kg Cereal pellet Aerial (0.15% 1080 Pellet)	Target Pests: Possums, Rats
-------------------------	--	------------------------------------

Location of operation
Dart Routeburn Caples



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.

Performance Standards
<i>Compulsory for <u>all</u> operations</i> - For operations targeting rats, prefeed with this pesticide use. - The DOC Code of practice for aerial 1080 in kea habitat DOC-2612859 must be followed. - 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. - 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). - For operations targeting possums, baits will have a mean size in excess of 6g and 95% of baits should weigh more than 4g. - The baits must be dyed green or blue. - 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. - 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. - The product must only be used as specified on the manufacturer's product label. <i>Compulsory for this operation (delete those that you won't be applying to your operation)</i> - Bait sowing rate must be no greater than 5kg/ha for 6gm baits (or equivalent bait density per hectare for other bait sizes). - Designate a "Safety Officer" on loading site who audits and ensures adherence to safety standards. - Use bait sowing buckets with retractable legs. <i>[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.]</i>

Information Needs
<i>Compulsory for <u>all</u> operations</i> Nil

Compulsory for this operation

1. *[Add as required.]*

Operational Planning & Design Considerations

- 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.

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

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.

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

List the native species that prompted the control work. Give the threat classification where applicable. If this is not a DOC operation, state N/A.

Non-target species

List all native species at or near the treatment area that are potentially at risk from the proposed control method. Give the threat classification where applicable.

Effect of operation on native species

Describe the potential and/or actual effects the operation could have on these native species. Consider both positive and negative effects. Consult the DOC Pesticide Information Review as a key resource.

Performance standards and information needs

What actions are to be undertaken to avoid, remedy or mitigate adverse effects on native species?

Consider the Additional Performance Standards recommended by the Pesticides Advisory Group, listed on the DOC Performance Standards sheets in Appendix 1.

Retain the Additional Performance Standards in the grey box or write your own further standards to these sheets as required.

Where there is little information available, consider monitoring or a trial to inform future decisions. Retain any applicable Additional Information Needs in the grey box or write your own further monitoring or trial needs on the DOC Performance Standards sheets in Appendix 1.

Effects on non-target domestic and feral animals

Non-target species

List all domestic and feral animals at or near the treatment area that are potentially at risk from the proposed control method.

Effects of operation on domestic and feral animals

Describe the potential and/or actual effects the operation could have on these animals. Consider both positive and negative effects. Consult the DOC Pesticide Information Review as a key resource.

Performance standards and information needs

What actions are to be undertaken to avoid, remedy or mitigate adverse effects on domestic and feral animals?

Retain the Additional Performance Standards in the grey box or write your own further standards to these sheets as required.

Where there is little information available, consider monitoring or a trial to inform future decisions. Retain any applicable Additional Information Needs in the grey box or write your own further monitoring or trial needs on the DOC Performance Standards sheets in Appendix 1.

Further information

Further information

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

References

The following published references were used in developing this AEE:

- [Authors] [Year]: [Pesticide name] Pesticide Information Review. Version [No]. Unpublished report docdm-[number], Department of Conservation, Hamilton NZ. [Number of pages].
- [Add additional references as needed including source/author, year, document name, publisher name and location (where applicable).]

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).

Application for DOC permission to use VTAs: assessment report

Applicant name:	DOC Senior s9(2)(g)(ii)
Operation name:	Dart Routeburn Caples
Approving manager:	s9(2)(g)(ii) Director National Operations
Assessor:	s9(2)(g)(ii)
Date received:	July 2019 (Reviewed and updated by Tiakina Nga Manu support staff August 2019 due to Technical Advisory Group (TAG) advice re changes to required sowing rates in the unprecedented 2019 mast conditions)
Overview:	To control rats in the Dart, Routeburn and Caples Valleys (following a rat irruption triggered by a beech mast event) it is proposed that the following pesticide uses will be applied: • Pesticide Use #1 Sodium fluoroacetate 1.5g/kg cereal pellet aerial • Pesticide Use #2 Sodium fluoroacetate 1.5g/kg cereal pellet hand-laying • Pesticide Use #140 Sodium fluoroacetate 1.5g/kg cereal pellet aerial • Pesticide Use #141 Sodium fluoroacetate 1.5g/kg cereal pellet hand-laying Permission is sought for one toxic application starting on or after 1 September 2019 and ending on or before 30 April 2020. Non-toxic prefeed will be applied no earlier than 1 September 2019. Permission is also sought to allow for another possible toxic application if the result targets are not achieved. This would take place around February 2020 dependent on post-op target monitoring results. <u>Location</u> The Dart/Routeburn treatment block begins approx. 12 km NW of Glenorchy township and extends northwards.
Applicant type:	DOC applicant—DOC SOPs will apply.

Step 1 Confirm application is complete <i>Are all documents (listed below) provided?</i>	
DOC Application form complete:	The Application form was completed to a high standard for assessment with no significant information gaps. The Application form is linked at DOC-5739713 It included the AEE section, which assesses the actual and potential environmental effects of controlling rats in this area with this methodology. The operational area will be treated as one treatment block.
Are all the proposed pesticide use(s) accepted for use?	Yes.
Performance standards sheets	The correct Performance Standards sheet templates were supplied by the applicant. PU#1, #2, #140 and #141 see below.
DOC permission map(s) (image file or files)	An acceptable standard of maps were provided.
DOC Pesticide Summary shapefiles	All relevant data has been entered into the DOCgis pesticide application to standard.
Consultation record including conditions of landowner consents	There is an ongoing consultation and notification process in place. See communication plan for full details: DOC-5624631 The communication plan is comprehensive and being continually updated. This includes: • Letters to, and consultation with relevant Iwi: • Office of Te Runanga o Ngai Tahu • Otago Te Roopu - represents Hokonui, Puketeraki, Moeraki and Otakou runanga • Southland Kaitiaki Roopu - represents Oraka-Aparima, Awarua, Hokonui and Waihopai runanga • Public notices, information sheets and notification to key user groups prior to works being undertaken. • WARO groups notified • Adjacent landowners/Occupiers consulted and notified. • Police, Medical Centres, Schools and Vets notified. • Local Council consulted re water intakes See also:

	- Letter of consent for access from Land Information New Zealand: DOC-5938882 - Email from Otago Regional Council on the exemption of 1080 under the RMA: DOC-5993722 - Letter of consent for paper roads from QLDC: DOC-6022546
Public health permission/ proof of application	PHP has been granted see: PHP Permission DOC-6026506 PHP Permission Map DOC-6026504
Other (specify, e.g. RMA consent)	N/A
Your confirmation email and subsequent correspondence	Email confirmation was provided on 14 th July 2019. Received notification of changes to the treatment boundaries on 15 th July 2019 And mapping that reflected the changes where completed by the 19 th July 2019 Received email to confirm the granting of PHP permission on the 30 th July 2019 Note below, correspondence from the TAG
Step 2 Capture treatment blocks in the Pesticide Application	
Your publication of the proposed operation on the DOC Pesticide Summary	Proposed control operation is in the DOCgis pesticide application and set at proposed publish.
Step 3 Evaluate control method <i>Is the proposed method suited to the pest problem, treatment area and consultation outcomes?</i>	
Your assessment of the control method	Aerial distribution of 1080 is the only viable method for achieving a rapid knockdown of rats over this size of area and terrain and in a short timeframe. The control method is in line with DOC national practices for rat and possum control over large areas. The history of controls confirms this is an effective control strategy for this area. Outcome monitoring in this area has shown control techniques to be effective in reducing pest numbers for conservation gains. Proposed methods comply with the latest DOC Technical Advisory Group (TAG) advice around required sowing rates in the unprecedented 2019 mast year. Section 4 of the application describes the proposed control methods

	and justifies their use for this operation. From application (DOC-5739717): The results from May 2019 tracking tunnels show tracking of 19% in the Caples valley and 23% for rats in the Dart Valley, both within the proposed operational area (and this is expected to rise). August 2019 update: Results from the Dart, Routeburn, Caples Valley tracking tunnels, show rats at 12% in the Caples valley and 25% in the Dart Valley. Updated advice received from the Tiakina Nga Manu Technical Advisory Group (TAG) in August 2019: A higher sowing rate than 1.5 kg/ha may be required for this operation to be successful due to the effect of the current mast conditions. The technical advisers have concluded that the revised sowing rates are likely to result in more effective results in terms of rat mortality, and any potential effects of the increase in sowing rates on non-target native species is low and acceptable (see TAG advice, DOC-6036962). A sowing rate of 2.6kg/ha has been recommended for this operation. This rate does not comply with the kea code of practice which allows 2/kg ha in kea habitat, an exemption will be gained for this. This rate is within the sowing rate limit allowed by the PHU consent This year's unprecedented 'mega mast' has provided abundant food for rats, making predator control more challenging. The monitoring results for the first three completed aerial 1080 operations show they did not achieve their targets of less than 5%. The exceptional amount of seed from the South Island's biggest beech mast in 40 years means rats don't need to travel far for food and their home ranges. Gaps in bait coverage have left pockets of rodents that wouldn't travel far enough to be exposed to the bait. It is vital that this operation is successful in order to avoid losing local populations of native species such as mohua, rock wren, bats, kaka, kakariki and kea, which are vulnerable to rat plagues. The TAG has recommended a higher bait application rate for some operations to ensure more even bait spread. This adjustment aims for complete bait coverage to reach all rats, and will be applied by sowing baits in overlapping swathes, so that the entire area is sown with baits twice and there is no possibility of gaps. By sowing twice and achieving the same kill rate for each individual swath, the operation is expected to achieve at least a 94% mortality for rats. The proposed sowing rate of 2.6kg/ha for this operation exceeds the
--	--

	guidance in the current Method Best Practice for BFOB aerial 1080 baiting which has specified 1.5kg/ha as current guidance. The operation will continue to meet other best practice guidance and will comply with the Code of Conduct for aerial 1080 operations in Kea habitat. It is proposed to use Deer repellent bait (EDR) across the entire treatment area as per agreement with the NZDA and Game Animal Council see DOC-6068781 . [Note: It is the combination of the EDR and the increased bait which results in a sowing rate of 2.6kg/ha, whereas other operations have been increased to 2.0 kg/ha.]
Label directions	Proposed methods are in compliance with product label.
Summary of any technical advice received on the proposed control methods.	Updated advice received from the Tiakina Nga Manu Technical Advisory Group (TAG) in August 2019 re sowing rates: DOC-6036962 TAG are satisfied the use of EDR and the 2.6 kg/ha sowing rate for this operation is necessary (see DOC-6069149).
Summary of any Community relations and Pou Tairangahau advice received.	Nil – Communication plan shows comprehensive consultation and notification has occurred.
Step 4 Identify and assess risks and adverse effects <i>Are you satisfied that all risks and adverse effects have been identified?</i>	
Are there any gaps in the applicant's assessment of these	The AEE shows a good awareness of possible risks and adverse effects to non-target species using the proposed methodology.
Relevant points from the DOC Pesticide Information Reviews	From DOC 1080 Review: Fairweather, A.A.C.; Broome, K.G. 2018: Sodium Fluoroacetate Pesticide Information Review. Version 2018/6. Unpublished report docdm-25427, Department of Conservation, Hamilton, NZ. 134p.: There have been numerous studies examining the effects of aerial poisoning on native non-target populations over the last 20 years. 24 species of native birds, particularly threatened species, have been monitored. None of the studies have identified population level mortality which threatened the viability of the species. A total of 60 radio tagged Kaka have been exposed to this method and bait type over 4 operations and none have died from poisoning. Falcon territories remained occupied, presumably by the resident birds,

	during four aerial 1080 operations using cereal pellets (Pureora 1984, Mapara 1990-92) and one using carrot bait (Waihaha 1994) (Spurr & Powlesland 1997). The total number of falcon involved in this monitoring was about 13, although the Mapara birds (3 pair) were exposed in three consecutive years (Calder & Deuss 1985; Bradfield 1993; Greene 1998). Australasian harrier have not been monitored individually when exposed to this method and bait type. However no detectable impact could be determined through five minute bird count monitoring before and after an aerial 1080 operation using cereal pellets on Rangitoto island and “the small resident population was still seen...throughout the year following the poisoning” (Miller & Anderson 1992). Additionally, Pierce & Maloney (1989) found no evidence of dead harriers after aerial 1080 poisoning of rabbits in the McKenzie basin. A total of 222 radio tagged Kea have been exposed to this method and bait type over 19 operations and 24 have died from poisoning. Limited monitoring of short tailed bats and native frogs has not indicated detectable mortality due to aerial 1080 poisoning. The risks 1080 operations pose to aquatic species is considered very low. Fish are very tolerant to 1080. Additionally, 1080 contamination of water is rarely found during 1080 operations and is at an extremely low level when it has occurred. In extreme cold and drought, 1080 residues could persist in baits for several months. There is wide variation between species in their susceptibility to 1080 poisoning. Dogs are especially vulnerable and highly likely to die if they eat 1080 baits or scavenge animals killed by 1080.
Summary of any technical or community relations advice received	See TAG advice on risk to native species above.
Other resources consulted	Method Best practice for Battle for our Birds Aerial 1080 baiting Version 1.5 July 2018 Kea survival during aerial poisoning for rat and possum control. s9(2)(g)(ii) s9(2)(g)(ii) s9(2)(g)(ii) June 05, 2018
Your assessment of technical risks and adverse	Risk to non-target species is considered low and native species and their associated ecosystem will be advantaged by a reduction in rodent numbers and by-kill of stoats. The proposed methods comply with the

effects	latest TAG recommendations and are suitable for the site. The treatment area is in kea habitat: http://intmaps/richmapviewer/?Viewer=DOCgis&Project=c59a7d94-d568-495b-ab00-0016f8be2827) The DOC Code of Practice (COP) for aerial 1080 in kea habitat <u>DOC-2612859</u> will be followed, with proposed exemptions. The risk to kea is considered low as the operational area is remote and resident kea are not habituated to interacting with people or foreign food items. The operation is not near an identified 'scrounging site' as described in the document below. Kea survival during aerial poisoning for rat and possum control. s9(2)(g)(ii) s9(2)(g)(ii) s9(2)(g)(ii) June 05, 2018
Your assessment of non-technical risks	Care has been taken to identify areas of risk and mitigation has been put in place to ensure there is little or no risk to the public. Loading site and flight corridors with loaded buckets are on public conservation land (PCL). A security firm has been engaged to ensure staff safety in the event of protest action around the loading site. From application: Adhering to the compulsory performance standards for each pesticide use will minimise risk. We expect there to be no adverse effects from these pesticides on domestic cattle and sheep. The Department will notify all neighbours. For mustelids, feral cats and rodents any adverse effects will be of benefit to native fauna. To mitigate the potential impact of an aerial 1080 operation on domestic dogs close liaison with affected neighbours will occur. Warning signs will remain in place until the caution period is over. The area is national park so no dogs are permitted and signs at every entry point will clearly state "no dogs". Hunters and Wild Animal Recovery Concessionaires will be notified of the application of toxins by email and via the on-line Pesticide Summary. The New Zealand Deer Stalkers Association (NZDA) has been consulted

	about the operation (and use of EDR, see DOC-6068781 for communication of decision to use EDR) and hunters will be notified of via the on-line Pesticide Summary.
Step 5 Calculate estimated caution period and evaluate if risks and adverse effects are at an acceptable level <i>Will risks be managed adequately with the performance standards proposed for this operation? Include dates and outcomes of any discussion with the applicant.</i>	
Estimated caution period for all the pesticide use(s)	Performance standard #1, #2, #140 and #141 - Caution periods set at 9 months after last date of bait application, as recommended in the CP calculator. Bait and carcass monitoring is required for 1080 operations.
How well does the proposed operation manage potential risks to native fauna?	Proposed control methods and performance standards are adequate to manage risk to native fauna. From AEE section of application: The following compulsory performance standards will apply: • Only use cinnamon lured RS5 pellets • Bait will be dyed green or blue • Bait will be screened to minimise undersized pellets The Code of Practice (COP) for Aerial 1080 Operations in Kea Habitat (DOC-2612859) will be followed, with proposed exemptions. The proposed use of deer repellent (EDR) and sowing rate of 2.6kg/ha does not meet performance standards 1, 2 and 3 of the kea COP: 1. Bait type: Only use cinnamon-lured RS5 prefeed and toxic baits. Cinnamon lure must be 0.15% in prefeed baits and 0.30% in toxic baits. (No other concentrations of cinnamon, or the use of other lures and additives such as repellents comply with this performance standard). 2. Prefeed sowing rates: Use a maximum of 4 kg/ha of prefeed bait for 12 g baits (or 2 kg/ha for 6 g baits, nominal sowing rates). 3. Toxic sowing rates: Use a maximum of 4 kg/ha of toxic bait for 12 g baits (or 2 kg/ha for 6 g baits, nominal sowing rates). An exemption from these standards (approved by a DOC Technical Advisor) will be sought in order to achieve compliance with the kea COP.
How well are other potential risks managed?	Applicant is experienced with this methodology and local environment so potential risks are well managed. The performance standards contained in Pesticide Use sheets minimise risk and will be adhered to. The Public Health Consent contains conditions to mitigate risk to human health (see below).

	The communication plan is comprehensive and the DOC pesticide summary and warning signs will also inform the public of the operation.
Are you satisfied with the proposed warning sign locations and normal points of entry?	Operational maps with all warning signs marked have been supplied and are adequate.
Summary of any technical or community relations advice received	N/A
Public health permission, including application form sighted (if not provided at time of application)	PHU application and permission supplied by applicant. The permission contains compulsory conditions that must be adhered to related to notifications, bait exclusion distances from huts/tracks/roads/public areas, track restrictions and clearances and water supplies. See PHU permission for the full list of conditions: PHP Permission DOC-6026506 PHP Permission Map DOC-6026504
Other resources consulted	Nil
Which additional performance standards should be applied and why?	No extra conditions required. See attached performance standard sheets: #1 (DOC-6032324) #2 (DOC-6032326) #140 (DOC-6032327) #141 (DOC-6032328)
Step 6 Make a recommendation <i>Should the application be approved or declined?</i>	
What key points should the approving manager have drawn to their attention?	This area has been treated with 1080 since 2006. Applicant is experienced with this methodology and local area so potential risks are well managed. The operation, through a reduction in rat and stoat numbers, should achieve the desired results. A second operation may be necessary in February 2020 dependent on result target monitoring. Kea are present in the area but risk to them from the operation is

	considered low and is outweighed by the benefit of pest control. Like all 1080 operations throughout New Zealand there is some concern by the public. To ameliorate any harm to DOC staff and contractors loading site security will be provided by First Security (under contract to CWACNZ) as part of the Tiakina Ngā Manu national security contract. There is a gate near the main road that will be looked and secured to control access onto the loading site. TAG has recommended a sowing rate of 2.6kg/ha for this operation which exceeds the guidance in the current Method Best Practice for BFOB aerial 1080 baiting (which has specified 1.5kg/ha as current guidance). Deer repellent will also be used over the entire treatment area. The technical advisers have concluded that the revised sowing rate is likely to result in more effective results in terms of rat mortality, and any potential effects of the increase in sowing rates on non-target native species is low and acceptable. TAG are satisfied the use of EDR and the 2.6 kg/ha sowing rate for this operation is necessary (see DOC-6069149). Approval of this specialist advice from TAG is recommended.
Is approval or decline recommended?	Approval recommended Readiness check is recommended
Step 7 Prepare documents and advise manager	
For recommended approval:	Letter : DOC-6032917 Maps: DOC-6035565 DOC Performance Standards: Performance standard 1 - DOC-6032326 Performance standard 2 - DOC-6032328 Performance standard 140 - DOC-6032324 Performance standard 141 - DOC-6032327

For recommended decline: <i>Attach draft letter of decline including a summary of reasons.</i>	N/A

Record of permission decisions that differ from the assessor recommendation	
Record of permission decision	