



# Operational Report for Norway rat, Ship rat Control in the Arthurs Pass National Park

23 Nov 2012 - 08 Dec 2012

4/07/2013

Department of Conservation

Waimakariri

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# 1. Operation Summary

**Operation Name** Norway rat, Ship rat Control in Arthurs Pass National Park

**Operation Date** 23 Nov 2012 - 08 Dec 2012

**Area Office** Waimakariri **Conservancy:** Canterbury

**Pestlink Reference** 1213WMK02

**Treatment Area** **Size (ha)**

Arthurs Pass National Park 4480.00

Conservation Unit Name(s)	GA Id(s)
Arthur's Pass National Park	2806320

## Treatment Block Details

Treatment Blocks	Size (ha)
Arthurs Pass National Park	4480.00

**Contractor Name** Mt Hutt Helicopters

Treatment Dates	Start	Completion
Arthurs Pass National Park	23 Nov 2012	08 Dec 2012

## Target Pest Details

Treatment Blocks	Target Pests	Control Method	Name
Arthurs Pass National Park	Norway rat, ship rat	Pesticide Aerial	Pesticide - Aerial in Hawdon Valley-(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 Critical. Source: 'Orange-fronted parakeet (*Cyanoramphus malherbi*) recovery plan 1995 - 2005' (Grant and Kearvell, 2001):

## Result Target(s)

- Rat populations will be reduced to below the threshold density that allows Orange-fronted parakeet populations to recover. For the time being this threshold is estimated to equate to 5% rodent tracking during the

## Treatment Area/Block What we got

Arthurs Pass National Park zero 0%

height of the OFP breeding season (November-March).

### Outcome Targets

- A viable breeding Orange-fronted parakeet population will still be present in the Hawdon Valley at the conclusion of the 2012 / 2013 breeding season. Orange-fronted parakeet encounter rates in the Hawdon Valley (from standardised monitoring lines) will not reduce from 2011/12 to 2012/13. (Secondary targets) Mohua will be present in the Hawdon. Kea will be unaffected by the operation.

### What we got

• The orange-fronted parakeet population is present in both the Poulter and Hawdon valleys however the number of orange-fronted parakeets in the Hawdon and Poulter is not known and it can not yet be determined whether the populations are still in decline, are stable or are increasing. Encounter rates and nests found were down from 13 nests in 2011/2012 to 5 in 2012/2013. • Mohua are still present in the Hawdon but in very low numbers. Kea were unaffected by the operation.

## 2. Introduction

### 2.1 TREATMENT AREA

#### Non-target species

Common Name	Scientific Name
Red deer	<i>Cervus elaphus scoticus</i>
Pig	<i>Sus scrofa</i>
Chamois	<i>Rupicapra rupicapra</i>

#### Target benefit species

Common Name	Scientific Name
Orange-fronted Parakeet	<i>Cyanoramphus malherbi</i>

#### Threatened species

Common Name	Scientific Name
Kea	<i>Nestor notabilis</i>
South Island Kaka	<i>Nestor meridionalis meridionalis</i>

Blue duck, Whio	Hymenolaimus malacorhynchos
mistletoe	Loranthus spp.
Great spotted kiwi	Apteryx haastii
Yellowhead	Mohoua ochrocephala

### Geographical location

The Arthurs Pass National Park is situated 15 k km West of Arthur's Pass.

### TREATMENT BLOCK DETAILS:

<b>Treatment block</b>	Arthurs Pass National Park	
<b>Vegetation type</b>	Beech Forest and Alpine / subalpine shrublands.	
<b>Bioclimatic zone</b>	sub-alpine	
<b>Climate characteristics:</b>		
<b>Rainfall</b>	4500 mm	
<b>Temperature:</b>	<b>Average Summer</b>	18.0
	<b>Average Winter</b>	8.0
<b>Snow level</b>	1200 m	
<b>Altitude</b>	600 to 1800 m	
<b>Community and Iwi interests</b>	All at risk bird species are of interest to various communities and Iwi.	
<b>Historic sites</b>	-	

### 2.2 MANAGEMENT HISTORY

Management history was not chosen to be shown in this operational report. This history is, however, available via Pestlink

## 3 Outcomes and Targets

### 3.1 CONSERVATION OUTCOMES

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 Critical. Source: 'Orange-fronted parakeet (Cyanoramphus malherbi) recovery plan 1995 - 2005' (Grant and Kearvell, 2001):

### 3.2 TARGETS

#### 3.2.1 Result Targets

The result targets for the treatment area were:

- Rat populations will be reduced to below the threshold density that allows Orange-fronted parakeet populations to recover. For the time being this

threshold is estimated to equate to 5% rodent tracking during the height of the OFP breeding season (November-March).

### 3.2.2 Outcome Targets

The outcome targets for the treatment area were:

- A viable breeding Orange-fronted parakeet population will still be present in the Hawdon Valley at the conclusion of the 2012 / 2013 breeding season. Orange-fronted parakeet encounter rates in the Hawdon Valley (from standardised monitoring lines) will not reduce from 2011/12 to 2012/13. (Secondary targets) Mohua will be present in the Hawdon. Kea will be unaffected by the operation.

## 4 Consultation, Consents & Notifications

### 4.1 CONSULTATION

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28 identified parties were consulted about the proposed activity prior to the original resource consent being sought in 2006. These parties included the local runanga, adjoining landowners/managers, recreational user groups, concessionaires, NGO's and conservation interest groups.

#### October 2012

#### **Fish and Game Council, Concessionaires and recreational groups, Conservation Board**

Prior to each of the four occasions (2006, 2008, 2009 and 2012) that the resource consent needed to be exercised, proposed operations were publicly notified. (N.B. current consent is for 2011-2016) Based on the responses from the original 2006 consultation and the subsequent public notices, all parties that had previously expressed an interest were contacted in respect of the current consent application.

The proposal was discussed with the Canterbury Aoraki Conservation Board at one of their meetings. All other parties received details, and an invitation to meet or respond, by post or email.

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Iwi were sent an initial email outlining the application and inviting further discussion. Iwi subsequently replied advising that they have no objection to a new resource consent being granted, provided consent conditions remain the same as the existing consent.

The Department has compulsory procedures that require face to face or telephone consultation with tangata whenua prior to DOC consent being sought for individual aerial 1080 operations.

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The adjoining land manager/occupier was contacted by phone and sent a follow up e-mail on 05/10/2012 outlining the proposed application and seeking written affected persons approval.

In a follow-up phone conversation (13/11/2012), he confirmed that he had no objection.

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### **Consultation outcomes**

In a follow-up phone conversation the adjoining land manager/occupier confirmed that he had no objection.

### **Lessons learned**

Nil

### **4.2 CONSENTS**

<b>Consent</b>	<b>Consent date</b>	<b>File Reference</b>	<b>Permission ID</b>
Resource Consent	29/08/2011	NHT 02 04 04	
MOH Consent	09/11/2012	NHT 02 04 04	12/15/CHRP/ AH
DOC Consent	09/11/2012	NHT 02 04 04	1109193

### **Lessons learned**

Nil

### **4.3 NOTIFICATION**

October-December 2012 the following groups were notified by fact sheet and letter:

Concessionaires, Iwi, schools, conservation interest groups, recreation groups, Fish and Game, permit holders, landowner-adjoining, local government, Police.

Public notices in the Christchurch Press and Greymouth Evening Star on 14/11/2012

### **Lessons learned**

NIL

## **5 Methods**

### **5.1 TARGET SPECIES**

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#### **Treatment Block Arthurs Pass National Park**

<b>Control method</b>	<b>Name</b>	<b>Target pest species</b>
Pesticide - Aerial	Pesticide - Aerial in	Norway rat

Hawdon Valley-(1)

Ship rat

Treatment Block	Control Method	Name	Target Pest Species
Arthurs Pass National Park	Pesticide - Aerial	Pesticide - Aerial in Hawdon Valley-(1)	Norway rat Ship rat
<b>Trade name of pesticide</b>	0.15% 1080 Pellets RS5		
<b>Name of pesticide</b>	Sodium fluoroacetate		
<b>Type of bait</b>	Cereal pellet		
<b>Toxic loading</b>	1.5 g/kg		
<b>Bait quality sampling</b>	Not Conducted		

**Bait Details**

	Pre-feed	Toxic
<b>Bait type</b>	Cereal pellet	Cereal pellet
<b>Lure/ mask/ deterrent</b>	Cinnamon	Cinnamon
<b>Lure/ mask/ deterrent</b>	0.30%	0.30%
<b>Dye</b>	Green	Green
<b>Individual Bait Weight</b>	6.0g	12.0g

**Sowing Rate Details**

Pre-feed			
Date	Rate(kg/ha)	Wind Speed	Direction
23/11/2012	1.00	Unknown	Nil

Toxic			
Date	Rate(kg/ha)	Wind Speed	Direction
08/12/2012	2.00	Unknown	Nil

<b>Time between pre-feed and toxic</b>	15
<b>End of Caution Period Date</b>	-
<b>Aircraft type</b>	Squirrel AS 350
<b>Number of Aircraft</b>	1

**Sowing gear details**

Description	Capacity
Retractable leg bucket	550 kg

<b>Type of navigational guidance system used</b>	DGPS satlock M3 or G4 - Trackplus flight following.
<b>Loading Method</b>	Sacks manually loaded into pivot steer loader bucket then into heli bucket.

**Complaints and Incidents**

A mapping malfunction resulted in a toxic bait overflow of one hut (East Hawdon Biv) which prompted a manual clean up of the immediate area.

### **Other Details about this method**

Some sacks of bait were double stacked in transport and some baits were crushed in the process. These had to be replaced. Due to the presence of Kea we had to use 12 gram baits for the toxic baits instead of 6 gram rat baits as per the DOC performance standards even though Kea prone areas were already excluded. Using 6 gram rat baits at 2 kg/ha instead of 12 gram baits at 2 kg/ha would have put twice as many rat sized baits into the operational area greatly increasing the potential to kill rats as was the objective.

### **Deviations from planned operation**

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### **Lessons Learned**

Ensure all critical areas are mapped into the GPS system and excluded from the flight plan. - No exceptions. Don't stack sacks of baits on each other when transporting to avoid crushing and subsequent fragmentation and poison dust issues.

## **5.2 ENVIRONMENTAL EFFECTS**

### **5.2.1 Effects on Non-Target Species**

Potential for by kill of both introduced pest and native species.  
Effects on Non-Target Species Not Applicable

### **5.2.2 Effects on Soil and Water Quality**

Possible pollution of waterways  
Effects on Soil and Water Quality Not Applicable

### **5.2.3 Effects on Ecosystems**

Potential for adverse ecosystem effects.  
Effects on Ecosystems Not Applicable

### **5.2.4 Effects on Human Health**

Nil



Performance standard(s)	Followed ?	Monitored ?
MOH and DOC performance standards	Yes	Yes

#### Effectiveness of performance standards

Effective

## 6 Monitoring Results and Outcomes

### 6.1 RESULT MONITORING - TARGET SPECIES

#### Result target(s)

Rat populations will be reduced to below the threshold density that allows Orange-fronted parakeet populations to recover. For the time being this threshold is estimated to equate to 5% rodent tracking during the height of the OFP breeding season (November-March).

<b>6.1.1 Target Species</b>	<b>Tracking tunnels</b>
<b>Monitoring Method:</b>	
<b>Species monitored</b>	Norway rat - <i>Rattus norvegicus</i> , Ship rat - <i>Rattus rattus</i> in Arthurs Pass National Park
<b>Monitor method details</b>	Pre and Post operation tracking tunnel checks inside the treatment area and also in adjacent non treatment areas.
<b>Deviations</b>	Nil

#### Target pest result details

	Pre	During/Post
<b>Monitoring dates</b>	August to October 2012	December to March 2012 / 2013
<b>Results</b>	up to 7%	zero 0%

<b>Result target met?</b>	Yes
<b>Lessons Learned</b>	Nil

### 6.2 RESULT MONITORING - ENVIRONMENTAL EFFECTS

#### 6.2.1 Non Target Species

No monitoring of non target species was undertaken.

#### 6.2.2 Soil and Water Quality

No monitoring of soil and water quality was undertaken.

#### 6.2.3 Ecosystems

No monitoring of ecosystems was undertaken.

#### 6.2.4 Human Health

**Monitoring of:** **Signage, notification, mapping of operational area and bait spread. Spills and overruns were also checked for.**

#### **Monitor Method details**

Checking operation followed DOC and MOH performance standards and also clean up and disposal SOP. Checking of Comms plan for details of notification checking of public notices and sign details. Installation of signs, sign register, sign checks, GPS mapping of area prior to baiting.

#### **Deviations**

One hut ( East Hawdon Biv) was omitted from the GPS bait exclusion zone and was inadvertently baited requiring a manual clean up by a number of staff on the day.

**Monitoring dates** 8/12/2012

**Results** All good after completion of the clean up around hut and inspection and washdown of the loading zone.

**Lessons Learned** Ensure all exclusion zones are entered into the GPS system correctly. (Double check)

### **6.3 OUTCOME MONITORING**

#### **Outcome targets**

A viable breeding Orange-fronted parakeet population will still be present in the Hawdon Valley at the conclusion of the 2012 / 2013 breeding season. Orange-fronted parakeet encounter rates in the Hawdon Valley (from standardised monitoring lines) will not reduce from 2011/12 to 2012/13. (Secondary targets) Mohua will be present in the Hawdon. Kea will be unaffected by the operation.

**6.3.1 Outcome monitoring :** **Kea - Nestor notabilis**  
**Orange-fronted Parakeet - Cyanoramphus malherbi**  
**Yellowhead - Mohoua ochrocephala**

**Monitoring Method(s)** Nest inspection (breeding pairs, nesting success)  
 Encounter rate

**Monitoring information due date** 25/05/2013

**Method details** Breeding/ fledging success & sightings (encounter rates) of Yellowhead and Orange fronted parakeet. Kea survival monitoring pre and post 1080 drop.

**Monitoring dates** 25/01/2013

#### **Outcome Results**

• The orange-fronted parakeet population is present in both the Poulter and Hawdon valleys however the number of orange-fronted parakeets in the Hawdon and Poulter is not known and it can not yet be determined whether the populations are still in decline, are stable or are increasing. Encounter rates and nests found were down from 13 nests in 2011/2012 to 5 in 2012/2013. • Mohua are

still present in the Hawdon but in very low numbers. Kea were unaffected by the operation.

**Outcome target met?** No

**Lessons Learned**

Despite our best efforts following the current plan observed orange front nests were down from 13 last year to 5 this year. Orange fronted parakeets are difficult to monitor using standard techniques. A more robust and practical monitoring method would be very useful. We may need to revise aspects of our current plan to allow for faster and more direct intervention in rat prone areas including trapping and poisoning using both short and long term baiting strategies.