Department of Conservation
Te Papa Atawhai

EPA Report: Verified
Source: Pestlink

Operational Report for Norway rat, Ship rat Control in the South Branch Hurunui

11 Feb 2015 - 17 Feb 2015

19/06/2015
Department of Conservation
Rangiora

Contents

1. Operation Summary

Operation Name Norway rat, Ship rat Control in South Branch Hurunui
Operation Date 11 Feb 2015 - 17 Feb 2015
Office: Rangiora **Region:** Southern and Eastern South Island
Pestlink Reference 1314WMK04

Treatment Area	Size (ha)
South Branch Hurunui	2434.00

Conservation Unit Name(s)	GA Id(s)
Lake Sumner Forest Park	2807535

Treatment Block Details

Treatment Blocks	Size (ha)
South Branch Hurunui	2434.00

Contractor Name Andersons and WayToGo Helicopters.

Treatment Dates	Start	Completion
South Branch Hurunui	11 Feb 2015	17 Feb 2015

Target Pest Details

Treatment Blocks	Target Pests	Control Method	Name
South Branch Hurunui	Norway rat, Ship rat	Pesticide Aerial	Pesticide - Aerial in South Branch Hurunui-(1)

Conservation Outcome(s)

1. To ensure the perpetuation of orange-fronted parakeet throughout their present range within the operational area. 2. To reduce the Department of Conservation ranking of OFP from nationally critical. - Source: "Orange Fronted Parakeet (Cyanoramphus Malherbi) recovery plan 1995-2005" (Grant and Kearvell 2001).

Result Target(s)	Treatment Area/Block	What we got
• Rat populations will be maintained at < 5 % tracking tunnel index to allow orange-fronted parakeet and mohua populations to recover.	South Branch Hurunui	0

Outcome Targets	What we got
• A viable orange-fronted parakeet population will	Encounter rate has not declined

still be present in the South Branch Hurunui at the conclusion of the 2014 / 2015 breeding season. Orange fronted parakeet encounter rate will not decline.

significantly since last season despite the massive beech mast and consequent influx of mice, rats and stoats.

2. Introduction

2.1 TREATMENT AREA

Non-target species

Common Name	Scientific Name

Target benefit species

Common Name	Scientific Name
Mohua, Yellowhead, bush canary, mohoua, houa	Mohoua ochrocephala
Malherb's parakeet, kakariki, kakariki, kakariki karaka, kakariki karaka, orangefronted parakeet, or	Cyanoramphus malherbi
Yellow-crowned Parakeet, Kakariki	Cyanoramphus auriceps
South Island Kaka, bush parrot, brown parrot, kawkaw	Nestor meridionalis meridionalis
South Island Robin, Toutouwai, kakaruai, kakariwai	Petroica australis australis
Yellow mistletoe	Alepis flavida
Red mistletoe, pikirangi, pirirangi, pikiraki, pirita	Peraxilla tetrapetala
Bellbird	Anthornis melanura melanura
Brown Creeper, Pipipi	Mohoua novaeseelandiae
South Island Fantail	Rhipidura fuliginosa fuliginosa
Grey Warbler, Riroriro	Gerygone igata
Kea	Nestor notabilis
South Island Rifleman, Titipounamu	Acanthisitta chloris chloris
South Island Robin, Toutouwai, kakaruai, kakariwai	Petroica australis australis
Silvereye	Zosterops lateralis
Bush falcon, Karearea	Falco novaeseelandiae "bush"

Great spotted kiwi, roa, roroa	Apteryx haastii

Threatened species

Common Name	Scientific Name
Mohua, Yellowhead, bush canary, mohoua, houa	Mohoua ochrocephala
Malherb's parakeet, kakariki, kakariki, kakariki karaka, kakariki karaka, orangefronted parakeet, or	Cyanoramphus malherbi
Yellow-crowned Parakeet, Kakariki	Cyanoramphus auriceps
Kea	Nestor notabilis
Yellow mistletoe	Alepis flavida
Red mistletoe, pikirangi, pirirangi, pikiraki, pirita	Peraxilla tetrapetala
Great spotted kiwi, roa, roroa	Apteryx haastii
South Island Kaka, bush parrot, brown parrot, kawkaw	Nestor meridionalis meridionalis
South Island Robin, Toutouwai, kakaruai, kakariwai	Petroica australis australis
South Island Rifleman, Titipounamu	Acanthisitta chloris chloris

Geographical location

The South Branch Hurunui is situated 56 km SE of Culverden.

TREATMENT BLOCK DETAILS:

Treatment block	South Branch Hurunui	
Vegetation type	Mountain beech, red beech, silver beech.	
Bioclimatic zone	sub-montane lowland	
Climate characteristics:		
Rainfall	0 mm	
Temperature:	**Average Summer**	0.0
	Average Winter	0.0
Snow level	0 m	
Altitude	700-940m m	
Community and Iwi interests	Significant population of mohua (Mohoua ochrocephala).	
Historic sites	None	

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 within the operational area. 2. To reduce the Department of Conservation 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 maintained at < 5 % tracking tunnel index to allow orange-fronted parakeet and mohua populations to recover.

3.2.2 Outcome Targets

The outcome targets for the treatment area were:

- A viable orange-fronted parakeet population will still be present in the South Branch Hurunui at the conclusion of the 2014 / 2015 breeding season. Orange fronted parakeet encounter rate will not decline.

4 Consultation, Consents & Notifications

4.1 CONSULTATION

Twenty eight 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.
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 (note - 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 between April 2014 and February 2015.

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.
A detailed record of all the consultation undertaken with these parties written correspondence sent and received was maintained.
The Runanga were sent an initial email outlining the application and inviting further

discussion. They subsequently replied advised that they have no objection to a new resource consent being granted, provided existing consent conditions remained.

Consultation outcomes

Due to the adjoining farmers ill feeling following an unfortunate dog death (not 1080 related) after our last South Branch poisoning operation we could not use our usual loading site so decided to fly from the Andrews Valley loading site to avoid flying over farmland.

Lessons learned

Be sympathetic with farmers concerns and be prepared to change / modify aspects of the operation if necessary. Treating both the Poulter and the Huranui South Branch from the same loading site on the same day made perfect sense. We ended up with a smoother simpler operation that was more efficient and more cost effective.

4.2 CONSENTS

Consent	Consent date	File Reference	Permission ID
Resource consent	26/05/2014	NHT 02 04 04	CRC 146296
MOH consent	07/10/2014	NHT 02 04 04	14-28-CRPH-SM
DOC permission	10/02/2015	NHT 02 04 04	1537913

Lessons learned

Liaise closely with MOH and ECAN to ensure they do not put unrealistic conditions in their permissions that we either cannot or would have difficulty complying with is some of our remote locations

4.3 NOTIFICATION

All appropriate user groups, adjoining owners and effected parties were notified. For 24 hour notice adjoining landowners, medical facilities, regional council, police, Iwi and neighbouring DOC offices were notified on 15/02/2015. - also publicly notified in the Christchurch Press, North Canterbury News and Greymouth Evening star on 17/01/2015.

Lessons learned

N/A

5 Methods

5.1 TARGET SPECIES

Treatment Block	South Branch Hurunui	
Control method	**Name**	**Target pest species**
Pesticide - Aerial	Pesticide - Aerial in South Branch Hurunui-(1)	Norway rat Ship rat

Treatment Block	Control	Name	Target

	Method		Pest Species
South Branch Hurunui	Pesticide - Aerial	Pesticide - Aerial in South Branch Hurunui-(1)	Norway rat Ship rat

Trade name of pesticide	0.15% 1080 Pellets RS5
Name of pesticide	Sodium fluoroacetate
Type of bait	Cereal pellet
Toxic loading	1.5 g/kg
Bait quality sampling	Not Conducted

Bait Details

	Pre-feed	Toxic
Bait type	Cereal pellet	Cereal pellet
Lure/ mask/ deterrent	Cinnamon	Cinnamon
Lure/ mask/ deterrent	0.30%	0.30%
Dye	None	Green
Individual Bait Weight	6.0g	6.0g

Sowing Rate Details

Pre-feed			
Date	**Rate(kg/ha)**	**Wind Speed**	**Direction**
11/02/2015	1.50	Light	NW

Toxic			
Date	**Rate(kg/ha)**	**Wind Speed**	**Direction**
17/02/2015	1.50	Light	West

Time between pre-feed and toxic	6 days
End of Caution Period Date	17/11/2015
Aircraft type	Squirrel AS 350 Jet Ranger
Number of Aircraft	3

Sowing gear details

Description	Capacity
Purpose built sowing buckets. No retractable legs	750 kg

Type of navigational guidance system used	DGPS
Loading Method	Hiab and hand loaded into dummy hopper and

then into heli bucket. Helicopters disconnected from buckets at each loading to avoid creating dust from the bait.

Complaints and Incidents

There were issues with bait procurement, storage, tracking and quality. - We somehow had 400 kg of 12 gram instead of 6 gram baits on our bait truck. This was only picked up from a check of the loading dockets and most of that bait was already on the hill. The remainder which was already in a dummy bucket was eventually spread as well. This was reported to both MOH and DOC because of possible breach of consent conditions. - This did also highlight some discrepancies in the bait tracking process. On inspection in a loading bucket some baits appeared both clumped and crumbley. Some baits had come from other operations and may have been shrink wrapped in storage for a long time and sweated. This prompted a ground check of an already treated area to see if there were bait issues on the ground from baits possibly disintegrating. The baits in the area checked were OK although many had already been chewed by mice only 2 to 3 hours after sowing with 5 or 6 very sick mice were found. - There were some beehives positioned a few hundred metres from our loading site. A large number of bees became very keen on the cinnamon smell from the baits. 1 or 2 staff were stung. - This was a long day for the pilots and other staff. A standby machine for odd jobs such as bait and sign checks would have eased the workload.

Other Details about this method

The 2 helicopter companies were using their own loaders and staff which was somewhat inefficient. On site portaloos both inside and outside of the toxic zone would be good.

Deviations from planned operation

As above. - Variations in bait size and quality. - Some bait had come from other operations.

Lessons Learned

Flying from the one loading site for 3 different operations (2 on the one day) made for some much easier logistical decision making. It did mean some longer flight times for 6 loads for this operation into the South Branch but when calculating distance this was only a few extra minutes per load compared to our previous South Branch operation. This minor inconvenience was easily offset by not having to shift locations and running the operation over more days when there were serious operational, time and weather constraints. - Order and supply of bait should be as close as possible to when it is to be used to avoid storage / sweating issues. More rigorous bait tracking and quality control is required for future operations. - Make sure there are no beehives anywhere near your loading site. Have some antihistamines in the first aid kit. - Allow for a standby helicopter to assist for backup, other helicopter tasks and manage fatigue / lunch breaks for the main pilots. Having the loading site split by a public road is not ideal. Look at other handy alternative loading site options for the next operation.

5.2 ENVIRONMENTAL EFFECTS

5.2.1 Effects on Non-Target Species

Cats dogs and native birds may be poisoned.

Performance standard(s)	Followed ?	Monitored ?
Follow all appropriate DOC and MOH standards	Yes	Yes

Effectiveness of performance standards
Effective.
Bykill of non-target species
A small number of birds may be affected, but this does not have a significant effect on the population level.

5.2.2 Effects on Soil and Water Quality

Possible to contaminate localised areas of soil and also stream water with toxin.

Performance standard(s)	Followed ?	Monitored ?
Refer to DOC, MOH and Resource consent conditions	Yes	Yes

Effectiveness of performance standards
Effective.

5.2.3 Effects on Ecosystems

There should only be positive effects from using 1080 on the ecosystem. -Vegetation recovery and reduced erosion etc.

Performance standard(s)	Followed ?	Monitored ?
DOC, MoH and Resource consent standards	Yes	Yes

Effectiveness of performance standards
Effective as far as could be ascertained.

5.2.4 Effects on Human Health

There is always potential for humans to ingest toxins. The risk to public health during this operation particular is considered very low, due to the low public use of the operational area.

Performance standard(s)	Followed ?	Monitored ?
DOC and MOH standards including signage advertising and notifications	Yes	Yes

Effectiveness of performance standards
Effective. No adverse effects reported by staff or public

6 Monitoring Results and Outcomes

6.1 RESULT MONITORING - TARGET SPECIES

Result target(s)

Rat populations will be maintained at < 5 % tracking tunnel index to allow orange-fronted parakeet and mohua populations to recover.

6.1.1 Target Species Monitoring Method:	**Tracking tunnels**
Species monitored	Ship rat - Rattus rattus in South Branch Hurunui
Monitor method details	

Standard tracking tunnel monitoring protocol for rodent. Tunnels run both pre and post operation (post op within 2 weeks of toxic drop.

Deviations

Some of the tracking tunnel lines run across the borders of buffer areas such as adjacent to river flats. Because not all of some lines were subject to 1080 treatment the results data could have been skewed. i.e. rats (potentially) not killed in those buffer zones.

Target pest result details

	Pre	During/Post
Monitoring dates	23/01/2015	13/03/2015
Results	13	0

Result target met? Yes

Lessons Learned

Place all tracking tunnel lines at a reasonable distance from potential buffer zones or conversely exclude those lines or part lines from any subsequent results data.

6.2 RESULT MONITORING - ENVIRONMENTAL EFFECTS

6.2.1 Non Target Species

Monitoring of: **Non target species mortality.**

Monitor Method details

Observations by staff when in the area monitoring predators and parakeets.

Deviations

Nil

Monitoring dates Various

Results No non target effects observed.

Lessons Learned

N/A.

6.2.2 Soil and Water Quality

Monitoring of: **Water quality**

Monitor Method details

Ensure no baits are sown over or near waterways greater than 5 metres wide. Ground truth and exclude critical areas from the operational area. - GPS track and check all bait spread.

Deviations

N/A.

Monitoring dates 17/02/2015

Results No issues.

Lessons Learned

N/A

6.2.3 Ecosystems

Monitoring of:	**Ecosystem monitoring was not undertaken**

Monitor Method details

N/A

Deviations

N/A

Monitoring dates	N/A
Results	N/A

Lessons Learned

N/A

6.2.4 Human Health

Monitoring of:	**Warning signs. Bait spread in critical areas as per DOC and MOH requirements.**

Monitor Method details

Regular scheduled checks of all warning signage. Ground truth to exclude all huts and waterways over 5 metres.

Deviations

Nil

Monitoring dates	Various. - Mandatory before school and public holidays. (see sign register)
Results	No issues reported. No signs missing or damaged. No baits in waterways or near huts.

Lessons Learned

Sign checking of remote signs by helicopter is expensive and arguably unnecessary in areas that are seldom visited by the public. Make sure that MOH is aware of operational issues and the logistics of checking remote signs and advocate for some latitude.

6.3 OUTCOME MONITORING

Outcome targets

A viable orange-fronted parakeet population will still be present in the South Branch Hurunui at the conclusion of the 2014 / 2015 breeding season. Orange fronted parakeet encounter rate will not decline.

6.3.1 Outcome monitoring :	**Malherb's parakeet, kakariki, kakariki, kakariki karaka, kakariki karaka, orangefronted parakeet, or - Cyanoramphus malherbi**
Monitoring Method(s)	Encounter rate
Monitoring information due date	Ongoing
Monitoring contact name	DOC staff, Waimakariri
Method details	Encounter rate
Monitoring dates	various

Outcome Results

Encounter rate has not declined significantly since last season despite the massive beech mast and consequent influx of mice, rats and stoats.

Outcome target met? Monitoring ongoing.

Lessons Learned

These birds are notoriously hard to monitor when they are at low density in high canopy beech forest.