Mohua Transfer from the Catlins Maclennan Forest to Resolution Island sponsored by the Mohua Charitable Trust

November 2013

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Department of Conservation
Te Papa Atawbai

Catlins Maclennan Forest to Resolution Island Mohua transfer sponsored by the Mohua Charitable Trust

November 2013

Hannah Edmonds, Fiordland District

February 2014

Cover image credit (Barry Harcourt): Helicopter Line pilot Gaven Burgess releases mohua on Resolution Island, November 2013

Fiordland District Office
Southern South Island Region
Department of Conservation

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1. Executive summary

In November 2013, the Mohua Charitable Trust supported a transfer of 22 mohua/yellowhead from the Catlins Maclennan Forest, Southland to Resolution Island, Fiordland. This transfer is the second translocation from a mainland site to establish a large, genetically diverse mohua population on Resolution Island. It is a significant achievement for the conservation of the endangered mohua, which was co-incidentally voted bird of the year for 2013, in the Forest & Bird's annual poll.
This report provides all relevant information on the transfer, including logistics, media coverage and iwi involvement.

An ambitious trapping project has been undertaken by the Department of Conservation which has helped to restore Resolution allowing the return of the mohua. With stoat numbers at a level where they would no longer impact upon bird populations, it was once again safe to return threatened species back to Fiordland's largest rat free island sanctuary. Due to the large size of Resolution Island (20,860 ha) it will be able to sustain a population of mohua in the thousands, making it the largest protected island site in New Zealand for this nationally vulnerable species.

In 2011, 60 mohua from the Landsborough Valley were transferred to Resolution Island, supported by Peregrine Wines. Prior to that 29 mohua were transferred to Pigeon Island, next to Resolution Island from Breaksea and Anchor Islands, supported by the Fiordland Lobster Company. The birds from Breaksea and Anchor Islands were originally from the Blue Mountains in Southland and due to the proximity of Pigeon Island, several have made their way to Resolution Island.

The mohua released on Resolution Island were caught and transferred from the Catlins Maclennan Forest. This translocation was made possible by the successful predator control programme in the Catlins Maclennan Forest run by the Department of Conservation, which has enabled the mohua population in the area to increase over recent years.

2. Back ground Information

The purposes of **the Mohua Charitable Trust** are to: provide benefits to the public of New Zealand; to aid preservation and rehabilitation of native birds and wildlife, especially the mohua in the South Island of New Zealand; to promote education about native birds in New Zealand and

their preservation; to provide funding for the discovery, collection, relocation and rehabilitation of native birds including the mohua. The aim is to get mohua and other native bird populations back to the numbers once found in New Zealand's native forests. The Mohua Charitable Trust has sponsored several mohua translocations, surveys and predator control to benefit mohua conservation.

Mohua conservation: Mohua (*Mohoua ochrocephala*) or yellowhead are small brightly coloured songbirds with bright yellow plumage and melodic calls. Mohua were once widespread throughout the beech forests of New Zealand's South Island forming large flocks. Today they are ranked as a nationally vulnerable species by the Department of Conservation. They survive in small pockets of beech forest on the mainland with predator control or on offshore islands.

This hole-nesting species is particularly vulnerable to predation by stoats and rats in years of high predator numbers. In the 1980s it was recognised that mohua had disappeared from 75% of their former range and that declines were continuing. Recent management has shown that mohua populations can be maintained in mainland sites using appropriate predator control. However establishing mohua populations on predator-free islands can be a more cost-effective and longer-term solution.

There are now several populations of mohua on small islands within New Zealand and the Fiordland region. Although these islands all help to preserve the species, establishing mohua on large islands is preferred so that genetic diversity can be maintained and that large populations can establish. This transfer of mohua to Resolution Island - the largest island in Fiordland at 20,860 ha - will enable a large, genetically diverse mohua population to establish in the absence of predators. It is expected that in the future Resolution Island will be an important site for mohua conservation, especially as a source population for transferring mohua back to the mainland or to create new island populations.

The source site – the Catlins Maclennan Forest is located in the south - east coast of the South Island. Mohua survive in around 12,000ha of silver beech (*Nothophagus menziesii*) in the Catlins Maclennan forest. The topography is steeply undulating in places, rising from 100 to 700m a.s.l. The central feature is the Beresford range which is flanked by three rivers, the Catlins, Maclennan and Tahakopa, all of which run from north-west to south east. Many streams feed these rivers from the tops, creating a tangled web of catchments and valleys – thus there is no aspect on which the silver beech habitat is more dominant.

Predator control has been occurring in the Thisbe valley since the early 1990's, but large scale control was ramped up in 2004 with the implementation of Operation Ark.

Stoat trapping over the main 10,000 ha of mohua range was the primary method, with bait station grids in the Thisbe and Hunter Hills targeting rats.

The stoat traps were 'turned off' in 2010, in an attempt to see if a back-ground level of stoats would reduce the regularity of rat irruptions. Aerial 1080 control has become the preferred method of rat control, once monitoring triggers are surpassed. There have been aerial 1080 drops in 2002 (AHB), 2007(AHB) 2009(DOC) and 2013(AHB/DOC).

Mohua numbers appear to be increasing, during the annual October survey in 2013, 113 one kilometre squares were surveyed and mohua were present in 99 of them.
Of the 99 km squares that contained mohua, 557 groups were recorded and 1022 individuals were either seen or heard. This is greater than what has been detected in past years, with the exception of 2008 when numbers were similar.

The release site - Resolution Island, Fiordland: In 1891 Resolution Island in Dusky Sound, Fiordland, became New Zealand's first Nature Reserve and the birthplace for New Zealand conservation. Richard Henry was appointed as caretaker, and during the next 12 years he transferred over 500 native birds (mostly kiwi and kakapo) to the safety of the island – away from the rats and stoats that were devastating the mainland's wildlife. Unfortunately by 1900 stoats had invaded Resolution Island destroying Richard Henry's conservation dreams.

Resolution Island (20,860 ha) is the largest island in Fiordland and has the potential to support significant populations of threatened species, including a substantial population of mohua, helping to safeguard this species from extinction. It is rat free, and has low numbers of stoats due to a stoat control programme that began in 2008. Stoats are controlled using 2466 kill traps placed around the island and on the nearby mainland, and checked three times a year.
Mice remain as the only introduced animal not yet to be controlled on Resolution Island.

With stoat numbers extremely low we have now been able to take up Richard Henry's mantle and begin returning native species to Resolution Island. The translocations of mohua have been the first direct transfer of a native bird species back to Resolution Island since Richard Henry's translocations in the late 1800s.

Mohua have been returned to neighbouring Anchor, Pigeon and Breaksea Islands (originally from the Blue Mountains in Southland) and a small number have spread to neighbouring Resolution Island. In 2011 60 mohua were transferred to Resolution Island from the Landsborough Valley in South Westland, and in 2013 22 mohua transferred from the Catlins

Maclennan Forest, thus ensuring a genetically robust and healthy mohua population is established.

Iwi involvement with this significant taonga species: Mohua are a culturally significance species to Maori and are protected as a taonga species under the Ngai Tahu Claims Settlement Act. As with all taonga species the Department of Conservation acknowledges the cultural, spiritual, historical and traditional association of Ngai Tahu with mohua and welcomes their engagement in their management. Members of Te Runanga o Awarua, from the source site and Te Runanga o Oraka Aparima, from the release location in Southland approved and were involved with the translocation proposal, as well as the actual transfer.

3. The Transfer

The transfer was planned for 2012, however adverse weather conditions for October forced the transfer to be postponed until 2013. Weather conditions were just as bad in October 2013, in fact the highest rainfall recorded in Invercargill since 1946. There were also strong winds, which caused the first transfer attempt to be aborted.

On the 19th of October, the weather was forecast to be settled for the Catlins Maclennan Forest, and slight drizzle and moderate winds for Fiordland. A team of 20 staff, contractors and volunteers met at the Owaka Field Base at 10am on the 18th of October. After a health and safety briefing, half of the group travelled to the Thisbe huts, while the other half travelled to Tahakopa Hall. From there we split into teams of three or four depending on the skill set and familiarity of the area individuals had (see Appendix for team details). We spent several hours setting up mist-net sites in different areas in the Thisbe and Hunters Hill areas (see Appendix 1 for map of sites). On the 19th of October, the weather was clear and calm. Teams were on site around 7.15am, and began catching. By 10am, 9 mohua had been caught between 6 teams, when we received a message from Gaven Burgess, from the Helicopter Line informing us the wind was too strong to fly in Dusky Sound. There was no option but to release the birds and wait for the weather to improve.

The weather finally relented during the first week of November. Mohua had been seen nesting in the Eglinton and the Dart, so we knew they would have begun in the Catlins Maclennan Forest also. The Mohua Recovery Group collectively agree that as long as a translocation is early on in the nesting stage, the impact on the birds will be minimal. Only one bird with a visible brood patch was recorded.

On the 5th of November, 19 staff, contractors and volunteers met at Owaka Field Base at 5pm. Most teams had at least one person who was present on

the 18th of October, or familiar with the area therefore minimal set up time was needed, with the exception of one team. After a health and safety briefing, and running through the plan for the next day, teams made their way to either the Thisbe or Tahakopa hall for the night. The 6th of October was calm and clear. Teams went to their areas, set up mist-nets (either 6m or 9m lengths), and called birds in using Fox-Pro call gear. Once mohua were caught, they were carefully removed from nets and banded with a metal band and bright green colour band on each leg (see Appendix 2 for capture details). They were put into wooden transfer boxes, usually two each side. A perching stick was placed inside each box and mealworms sprinkled for them to eat. Purpose made covers for the boxes were draped over the boxes to provide shade, and removed once placed inside the helicopter.

By 10am only 7 birds had been caught. The numbers caught slowly increased and by 2.20pm when the helicopter arrived we had caught 22 birds. Boxes were loaded onto the Helicopter Line squirrel helicopter from the teams at the Hunter Hills area, the helicopter then flew to the Thisbe to pick up the remainder before flying to Resolution Island. The passengers on the helicopter were Gaven Burgess (pilot), Rewhiti Bull (Te Runanga o Oraka Aparima), Barry Harcourt (photographer) and Hannah Edmonds (DoC Fiordland District). All 22 mohua were released in good health in fine weather at Disappointment Cove, Resolution Island at 4pm. A pooled faecal sample was taken from the boxes, and sent to Gribbles Veterinary Pathology to test for yersinia and salmonella.

4. Project Results and Outcomes

Twenty-two mohua from the Catlins MacLennan Forest were released at Disappointment Cove, Resolution Island on the 6th of November 2013. This, together with 60 birds from the Landsborough Valley, and 28 birds from Pigeon Island will be the founding population of a large mohua population expected to establish on Fiordland's largest island.
No yersinia or salmonella was detected in the faecal sample.

5. Ongoing Monitoring

As was outlined and approved in the translocation proposal, the released mohua on Resolution Island will not be intensively monitored following their release. Although it is important to determine the success of establishing each new mohua population, it is not expected that there will be any problems on Resolution Island as mohua transfers on islands are now common with good success rates. Best practise techniques for

successful transfers were followed during this transfer and the birds were transferred to habitat similar to neighbouring islands where mohua have successfully established following transfers. The large scale of Resolution Island and its remoteness on the west coast of Fiordland are also additional reasons why monitoring of this translocation will be in partnership with existing management rather than additional. On practical terms this approach is sensible as through the existing management (stoat trapping), staff and contractors will be walking across the entire island on a more regular basis than would be possible through an additional monitoring programme. Any staff or contractors unfamiliar with mohua will be trained in calls and behaviour prior to fieldtrips. If few mohua are sighted during operational activities and we are unable to ascertain the success of the transfer, additional monitoring will be undertaken as required.

6. Publicity and Media Coverage

Barry Harcourt, photographer from the Southland Times accompanied the mohua from the Catlins-Maclennan Forest to Resolution Island. He took several high quality photographs, and an article was published in the Southland Times by Neil Ratley (see Appendix 3). The article was also posted on the Department of Conservation website. Nigel Babbage from the Mohua Charitable Trust was interviewed on Radio Live about the mohua translocation during October.

7. Budget

Significant savings were made to the budget, by limiting the pick-up points in the Catlins Maclennan Forest to two, rather than the original proposed four. Wages for contractors were covered by existing projects, as they happened to be working on mohua at the time. See Appendix 5 for further details.

8. Conclusions and Recommendations

The Mohua Charitable Trust Resolution Island mohua transfer in November 2013 was a success on many levels. The following are some of the key outcomes:

- benefits to threatened mohua by establishing a large and genetically robust population where the species can flourish in the absence of predators
- helps to restore the ecological integrity of Fiordland's largest restoration island
- proves the success of the predator control work in the Catlins Maclennan Forest, ensuring mohua numbers are able to sustain harvest
- raises profile of mohua conservation and the Mohua Charitable Trust via media opportunities

9. Acknowledgements

This translocation would not have been possible without the support of the Mohua Charitable Trust so thank-you to trust members: Nigel Babbage, Graeme Elliott and Ian Jamieson for their work on mohua conservation. This translocation was also reliant on the hard work and dedication of so many people in controlling predators, and monitoring outcomes in both the Catlins MacLennan Forest and Resolution Island. Thank you to Jo Marsh (nee Whitehead) for her hard work and dedication in 2012 organising the transfer which unfortunately didn't happen due to bad weather.
Thank – you to the following people for their support, patience and expertise: Cheryl Pullar, Ray Shanks, Ros Cole, David Agnew, Graeme Loh, Jason and Maddie Van Wetering, Gaven Burgess, Lindsay Wilson, Leigh Marshall, Kat Manno, Steph Hicks, Paul Van Klink, Flo Gaud, Tracey Dearlove, Ness Smith, Robyn Blyth, Marion Rhodes, Helen Clark, Ray Molloy, Barry Harcourt, Rewhiti Bull, Stewart Bull, Liam Genever, Guy Brannigan, Gerard Hill, Clement Lagrue, Jo Ledington, Jenny Rickett, Phil Melgren, Ciaren Campbell, Erina Loe, Sue Lake, Danielle Pearson, Chris Bennett, Em Oyston, Max Smart and Pete Young. Thank you to Paul Stephens for the use of the Tahakopa Hall, and property owners for allowing access to the sites.

10. References and Useful Documents

Hegg, T and I Jamieson (2009) Mohua Conservation Genetics Research: Final Report for the Department of Conservation and Mohua Recovery Group – April 2009. Department of Zoology, University of Otago, Dunedin (DOCDM-416729)

Mohua Translocation Best Practise Guidelines (2010). Mohua Recovery Group, Department of Conservation Internal Document (DOCDM-424869)

O'Donnell C (2002) Mohua Recovery Plan 2002 – 2012. Department of Conservation (OLDDM-386289)

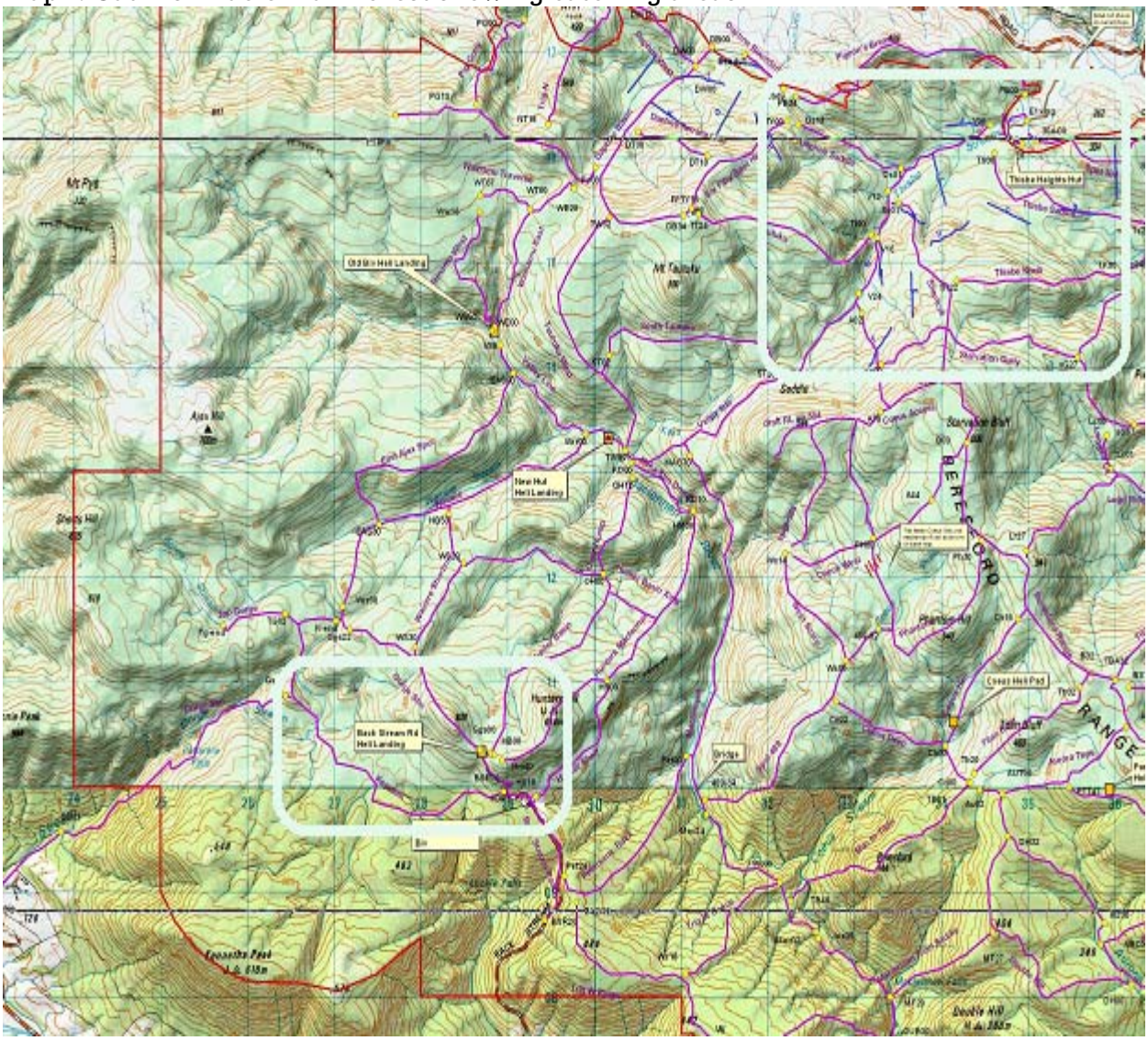
Whitehead, J (2011) Peregrine Wines Resolution Island Mohua Transfer October 2011 – Final Report. Department of Conservation Internal Document (DOCDM-950366)

Whitehead J, H Edmonds and M Willans (2011) Landsborough Valley to Resolution Island Mohua Translocation Proposal. Department of Conservation Internal Document (DOCDM-709491)

Wickes C and K-A Edge (2009) Secretary and Resolution Islands Restoration Plan. Department of Conservation Internal Document, Te Anau (DOCDM-160045)

Appendix 1: Maps of Source and Release Locations

Map 1. Catlins- Maclennan Forest showing catching areas



Map2. Resolution Island, showing Disappointment Cove

Appendix 2: Team Member Details

Name	Affiliation	Location	Skills	Date present
Cheryl Pullar	DOC Owaka	Thisbe	M3, N3, C3	06/11
Ciaran Campbell	DOC Otago	Kenneth Track	M1, N1, C1	06/11
Clement Lagrue	Otago Uni	Hunters Basin	M3, N3, C2	19/10, 06/11
Chris Bennett	DOC Owaka	Thisbe	Radio Comms	06/11
Danielle Pearson	DOC Wakatipu	Thisbe	M1, N1, C1	19/10
Erina Loe	DOC Te Anau	Gorge Stream	M2, N2, C1	19/10
Em Oyston	DOC Te Anau	Thisbe	M2, N2, C1	06/11
Flo Gaud	DOC Wanaka	Hunters Basin	M3, N3, C1	19/10
Graeme Elliott	DOC Nelson	Thisbe	M3, N3, C3	19/10
Graeme Loh	DOC Otago	Kenneth Track	M3, N3, C3	06/11
Gerard Hill	DOC Te Anau	Thisbe	M2, N2, C1	19/10, 06/11
Guy Brannigan	DOC Otago	Hunters Basin, Kenneth Track	M2, N1, C3	19/10, 06/11
Hannah Edmonds	DOC Te Anau	Hunters Basin	M3, N3, C2	19/10, 06/11
Jason Van De Wetering	Contractor, DOC S&C	Thisbe	M3, N3, C3	19/10, 06/11
Jenny Rickett	DOC Invercargill	Thisbe	M1, N2, C1	06/11
Jo Ledington	DOC Invercargill	Thisbe	M1, N1, C1	06/11
Kat Manno	Contractor	Thisbe	M3, N3, C3	19/10, 06/11
Liam Genever	DOC Otago	Gorge Stream	M2, N2, C3	19/10, 06/11
Lindsay Wilson	DOC Te Anau	Kenneth Track, Gorge Stream	M1, N1, C1	19/10, 06/11
Maddie Van De Wetering	Contractor, DOC S&C	Thisbe	M3, N3, C3	19/10, 06/11
Marion Rhodes	Contractor, DOC S&C	Gorge Stream	M3, N3, C2	19/10
Paul Van Klink	Contractor	Kenneth Track	M3, N3, C1	19/10
Phil Melgren	DOC Invercargill	Gorge Stream	Photographer	06/11
Pete Young	DOC Te Anau	Hunters Basin	M1, N1, C1	06/11
Ray Molloy	DOC Wakitipu	Thisbe	M3, N3, C2	19/10
Ray Shanks	DOC Owaka	Thisbe	M3, N2, C3	19/10, 06/11
Robyn Blyth	Contractor, DOC S&C	Gorge Stream	M3, N3, C1	06/11
Ros Cole	DOC Murihiku	Hunters Basin	M3, N3, C1	06/11
Steph Hicks	Contractor	Kenneth Track, Thisbe	M3, N3,C3	19/10, 06/11
Sue Lake	DOC Te Anau	Thisbe	M1, N1, C1	19/10
Tracey Dearlove	Volunteer	Kenneth Track	M2, N3, C1	19/10

Key: M 1-3 mohua experience (1 low, 2 mod, 3 experienced)
N 1-3 mist-netting experience
C1-3 knowledge of Catlins area

Appendix 3: Banding Details and Useful Documents

Date	Age	Sex	Bander	Location	Grid Ref (NZ)	Band No (left)	Colour (right)	Comments
19/10	A	M	Flo Gaud	Hunters Basin	131919 4848769	CP11220	green	pair
	A	F	Flo Gaud	Hunters Basin	131919 4848769	CP11132	green	
	1st yr	u	Marion Rhodes	Gorge Stream	1318849 4848664	CP1246	green	
	1st yr	M	Marion Rhodes	Gorge Stream	1318849 4848664	CP1245	green	
	u	u	Marion Rhodes	Gorge Stream	1318849 4848664	CP11176	green	
	Juv?	F?	Graeme Elliott	Thisbe	1324286 4854291	green	CP11117	
	1yr?	?	Maddie Van De Wetering	Thisbe	1324608 4854361	green	CP11148	
	1yr?	M?	Maddie Van De Wetering	Thisbe	1324608 4854361	green	CP11149	
	?	?	Maddie Van De Wetering	Thisbe	1324472 4854282	green	CP11150	
6/11	A	M	Ros Cole	Hunters Basin	1319169 4848539	CP11162	green	pair
	A	F	Ros Cole	Hunters Basin	1319169 4848539	CP11163	green	pair
	A	M	Hannah Edmonds	Hunters Basin	1319225 4848726	CP11164	green	
	A	M	Hannah Edmonds	Hunters Basin	1319260 4848822	CP11165	green	pair
	A	F	Hannah Edmonds	Hunters Basin	1319260 4848822	CP11166	green	pari
	A	M	Ros Cole	Hunter Maclennan	1310172 4848465	CP11167	green	pair
	A	F	Ros Cole	Hunter Maclennan	1310172 4848465	CP11168	green	pair
	juv?	F	Hannah Edmonds	Hunter Maclennan	100m above last site	CP11169	green	pair
	A	M	Hannah Edmonds	Hunter Maclennan	100m above last site	CP11170	green	pair
	?	F	Ros Cole	Hunter Maclennan	100m above last site	CP11171	green	
	2+	M	Robyn Blyth	Gorge Stream	1318381 4849215	CP4849215	green	
	A		Graeme Loh	Kenneth Track		CP11177	green	
	A		Graeme Loh	Kenneth Track		CP11178	green	
	A		Graeme Loh	Kenneth Track		CP11179	green	
	A		Graeme Loh	Kenneth Track				
	J	M	Cheryl Pullar	Thisbe	1323962 4854093	CP80836	green	
	A	F	Steph Hicks	Thisbe	1323962 4854093	CP80835	green	
	A	F	Cheryl	Thisbe	1324925	CP80837	green	

			Pullar		4854496			
	A	M	Kat Manno	Thisbe	2234604 5415760	CP11116	green	
	A	F	Jen Rickett	Thisbe	2234604 5415760	CP11115	green	
	1+	M	Jason Van De Wetering	Thisbe	1324757 4854499	CP11152	green	
	1+	F	Maddie Van De Wetering	Thisbe	1324757 4854499	CP11151	green	brood patch

Appendix 4: Media Coverage

Island move gives birds better shot at survival

NEIL RATLEY
Last updated 05:00
08/11/2013

BARRY HARCOURT/Fairfax NZ
FLY AWAY: Department of Conservation biodiversity ranger Hannah Edmonds releases mohua (yellowheads) on Resolution Island in Dusky Sound.

A hard-won battle with the weather has enabled the Department of Conservation to strengthen the population of a threatened bird species.

After weeks of waiting on the weather, DOC and the Mohua Charitable Trust were this week able to transfer 22 mohua from the Catlins to Resolution Island in Fiordland.

The birds were captured in Eastern Southland by a team of 20 catchers and flown by helicopter to Dusky Sound. The Catlins mohua will join a population already established on Resolution Island to strengthen the genetic makeup.

Mohua are one of the rarest songbirds in the country and have recently been voted by New Zealanders as bird of the year, in the Forest and Bird's annual poll.

It was hoped Resolution would become a "genetic hotspot" for mohua and other threatened birds.

About 60 mohua were transferred from Landsborough Valley in South Westland in 2011.

DOC Te Anau biodiversity ranger Hannah Edmonds said October was the ideal time to try to capture the birds because they were pairing up and seeking to establish a territory.

"They tend to stay in the one area during this time," she said.

However, it was only on Wednesday, after weeks of waiting, that conditions were perfect for the operation, she said.

The birds are caught using a 9-metre-long net with speakers.
"The speakers emit the calling cry of the mohua and lure the birds in," Ms Edmonds said.
The Catlins Forest holds one of the largest remaining populations of mohua in New Zealand, estimated to be in the low thousands, and would easily support a transfer of 22 individuals, she said.
The addition of the Catlins mohua to the gene pool on Resolution Island would increase numbers and establish the island as a source population for future transfers, Ms Edmonds said.
In one of several false starts, they were forced to release birds caught in the Catlins after strong winds prevented the helicopter from leaving Fiordland.
Resolution was the largest island in Fiordland and, because of ongoing stoat control, it provided a safe haven for rare and threatened species to build up their numbers, Ms Edmonds said.

SAVING A SPECIES

Mohua are small brightly coloured songbirds, distinctive by their bright yellow head and melodic calls.
Mohua were once widespread throughout the beech forests of the South Island, forming large flocks, but are now rated nationally vulnerable and survive only in small pockets of beech forest.
In the 1980s, it was recognised that mohua had disappeared from 75 per cent of their former range and that declines were continuing.
Mohua are particularly vulnerable to predation by stoats and rats in years of high predator numbers.
In October 2011, 60 mohua were transferred to Resolution Island from the Landsborough Valley in South Westland, making the start to establishing a robust population on the island.

Source: Department of Conservation

Appendix 5: Budget

Budget for Mohua Transfer from Catlins to Resolution Island

Budget Item	Description	Maximum estimated cost (excl GST)	Source of funding	Method of payment
2012/13				
Project Management 2012	Preparation for original planned 2012 transfer: preparing translocation documents, consultation with iwi, liaising with contractors and scientists, organising transfer logistics. Total 5.5 weeks at $27 per hour	$6,000	DOC – Fiordland District	Paid in 2012/13
2013/14				
Project Management 2013	Pre-trip organisation time (maximum 3 weeks), catching and rescheduling time (1 week), post-transfer wrap-up and report writing (1 week) = Total 5 weeks (200 hours) at discounted rate of $27 per hour.	$5,400	Mohua Charitable Trust	Paid by DOC & invoiced to MCT
Helicopter transfer flight	Helicopter Line (squirrel) Orawia – Catlins (near Papatowai) – Resolution – Orawia, including 1 hr flying time at Catlins Forest to pick up birds. Total may be less if don't need 1 hr for Catlins pick-ups.	Est:$7,030 Act: $5,300	Mohua Charitable Trust	Invoice direct to MCT
Field Equipment	Mealworms, batteries etc (rope, cutting tools, electrical tape, sat phone use)	Est: $300 Act: $378.39	Mohua Charitable Trust	Paid by DOC and invoiced to MCT
Disease screening	Gribbles tests	Est: $150 Act: $46.36	Mohua Charitable Trust	Invoiced to MCT
Food for field teams	22 people for 2 days @ $25/day	Est:$1,100 Act: $1050.89	Mohua Charitable Trust	Paid by DOC and invoiced to MCT
Accommodation	Tahakopa Community Hall field teams (2 nights)	Est: $200 Act: $200	Mohua Charitable Trust	Invoiced to MCT
Catching team - contractors	2 contractors for 3 days @$250 per day	Est: $1,500 Act: $640 ($480 one contractor, plus $160 petrol vouchers for volunteers)	Mohua Charitable Trust	Invoiced to MCT
Vehicle and fuel costs	Field teams (3 vehicles)	$1,500	DOC	Paid by DOC
Catching team - DOC Fiordland District	Wages for DOC Fiordland District - 4 people for 3 days @ discounted rate of $216 per day	Est: $2,592 Act:$ $3,240	DOC – Fiordland District	Paid by DOC
Catching team - DOC Coastal Otago District	Wages for DOC (Otago) - 6 people x 3 days @ discounted rate of $216 per day	Est: $3,888 Act: $4,584	DOC - other	Paid by DOC
Total maximum amount to be paid by Mohua Charitable Trust 2013/14 (maximum)		**Est: $15,680 (excl GST)** **Act: $13,015.64 (excl GST)**		
Total amount covered by DOC 2012/13		**$6,000 (excl GST)**		
Total maximum amount cover by DOC 2013/14		**$7,980 (excl GST)** **$9,324 (excl GST)**		
Grand Total		**$28,339.64 (excl GST)**		