North Island Kokako Recovery update



Photo credit: Mark Darin

Tertia Thurley, Department of Conservation John Innes, Landcare Research Kokako Specialist Group



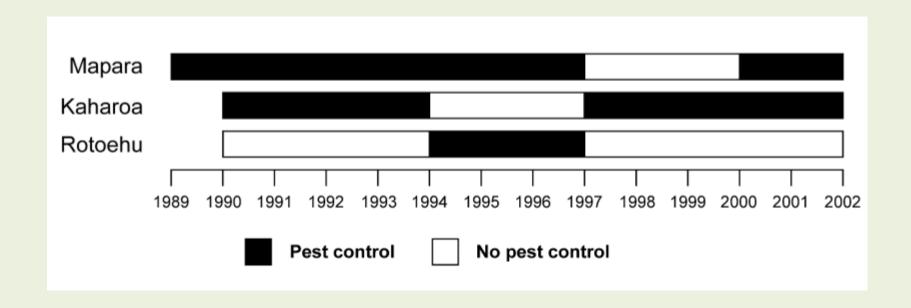


North Island Kokako pairs



Adaptive Management

- 8 year project at 3 sites: Rotoehu, Kaharoa and Mapara.
- Maximum practicable pest-mammal control switched "on" and "off" at different sites in different years.
- Kokako breeding success and population numbers studied at all sites.
- Pest abundance monitored at all sites.



Results

- In unmanaged sites 86% of nests failed, mainly due to predation
- 82% of nest predations by possums and ship rats
- Intensive management of these 2 pests allowed kokako populations to recover dramatically.

Biological Conservation 87 (1999) 201-214

Successful recovery of North Island kokako Callogas opered wilsoni POSSUMPulaton, by alet vemanagement Recovery

John Innes a,*, Rod Hay b,1, Ian Flux b, Philip Bradfield c, Hazel Speed d,2, Paul Jansen d,3

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n = 0.22).

attempt

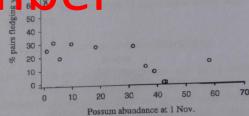
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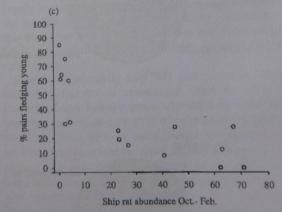
tracking at 1 No

Abstract

showing onako la taea caterea w is un (Calle fae) populations are declining een pres wear experiment to determine the cause of decline was under mammal pests in two forest areas, then monitoring pest abundance, kokal rs' incluor which and an unmanaged non-treatment block. Treatments were switched between omes. At 4 years. Reduction of pests, especially brushtail possums Trichosurus v resulted in significant increases in kokako chick output and adult density manageincreased success of nesting attempts, which then increased the number of dily folyoung females formed pairs with residual single males. The 'adaptive m -1992 to control in a co-ordinated experiment to directly test the pest-limitation hyp the cause of decline and to increase populations simultaneously. Predation than competition. Management to recover vulnerable kokako populations levels (<1% trap catch for possums; <1% tracking rate for ship rats, t kokako nesting season, for several consecutive years. © 1998 Elsevier Scie

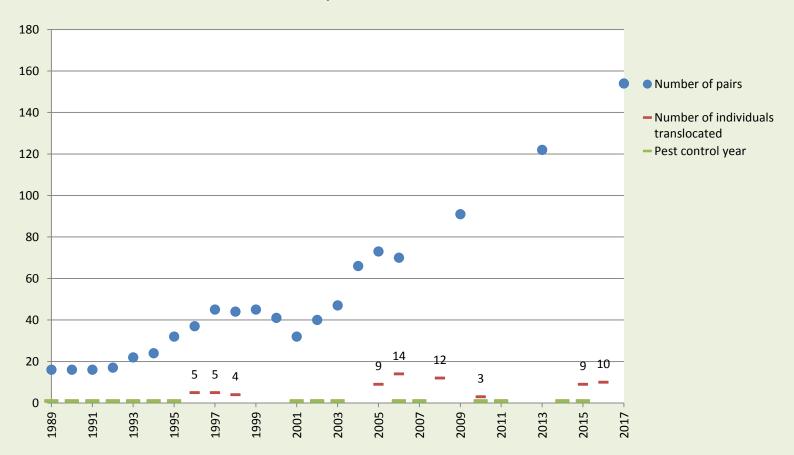
Keywords: North Island kokako; New Zealand; Population decline; Predation; Brus





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Mapara



Genetic research

Emily Weiser, University of Otago

 Genetic diversity ensures the best chance of long term persistence of a species

- number and genetic diversity of founders
- growth rate
- carrying capacity

- number and genetic diversity of founders (>40)
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- growth rate (high)
- carrying capacity

- number and genetic diversity of founders (>40)
- growth rate (high)
- carrying capacity (>500 individuals/2000ha)

Site	Bottleneck size	No. 2018	Pest control area (ha)(2018)
Te Urewera	99	435	1933
Pureora	138	869	5600
Rotoehu	50	129	610
Mapara	48	315	1400
Mokaihaha	43	94	850
Waima-Mataraua	15	168	1116
Kaharoa-Onaia	22	173	819
Hunua Ranges	4 (+ 33 translocated birds)	117	2000
Manawahe	13	13	700
Opuiaki	26	33	450
Waikokopu	16	16	?

Annual predator control

- Annual predator control
- Increasing area of pest control as kokako population expands to >2000ha

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- Creating habitat corridors

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- Increasing area of pest control as kokako population expands to >2000ha
- Creating habitat corridors
- Increasing habitat quality
- Translocations of kokako into site
- Minimise translocations out from site

Legend P = Pairs S = Singles 1995 Waipapa pest control 4 Kilometers Pureora Kokako 1971 - 1993 Department of Conservation Te Papa Atawhai New Zealand Government

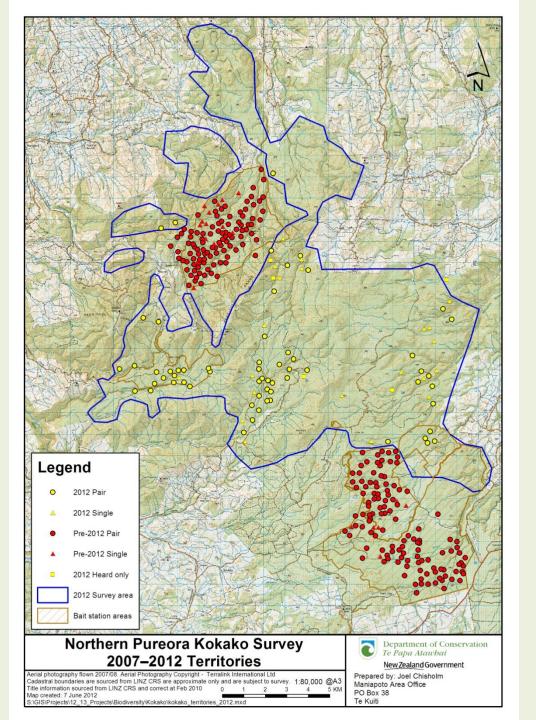
1995

begins

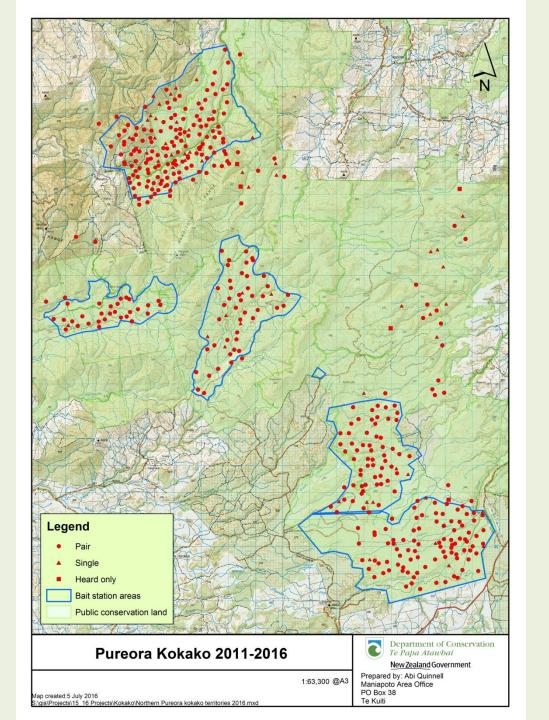
Mangatutu pest control

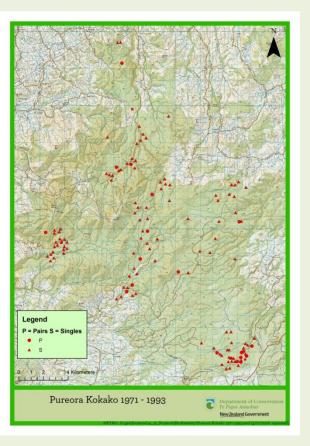
Periodic aerial 1080

begins

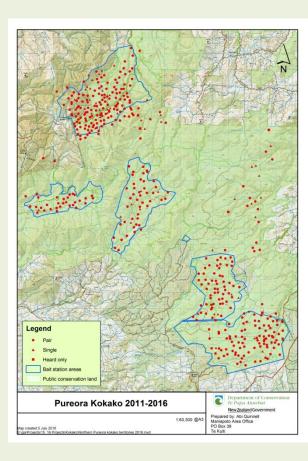


Connectivity?





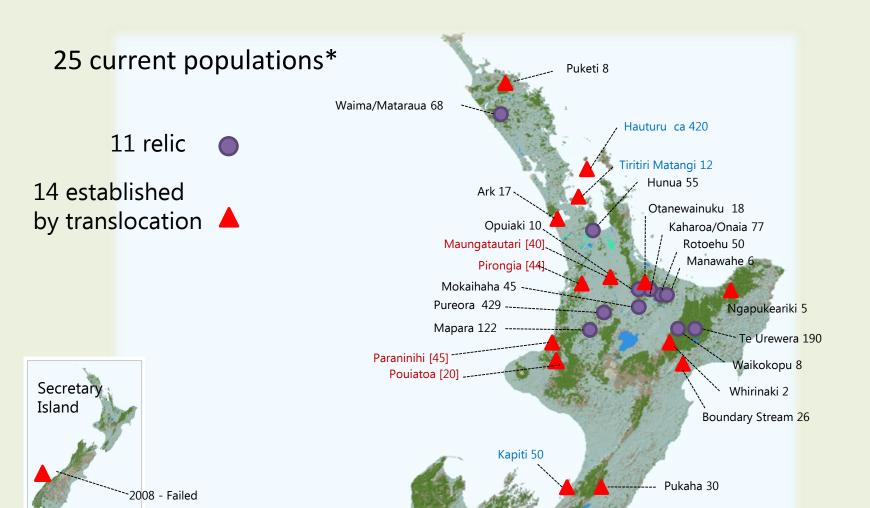
Pre-2012 Pair Pre-2012 Single Northern Pureora Kokako Survey 2007-2012 Territories New Zealand Governmen



1993: 20 pairs, 114 singles No kokako in managed areas

2012: 291 pairs235 in managed areas

2016: 465 pairs427 in managed areas



* No. pairs Aug 2018

Recommended strategy

Draft North Island Kōkako (Callaeas wilsoni) Recovery Plan 2018–2026

- Maintain a low predator abundance
- Improve or sustain the habitat quality
- Achieve a target of 500 breeding k\u00f6kako in each population
- Translocations to
 - a) Boost existing populations
 - b) Connect existing populations
 - c) Create new populations at high quality sites