

Kaharoa Kokako Trust¹, Newsletter

(Update - September 2001).

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1. Giving credit where credit is due.

This year we would like to start where we normally finish, by thanking all of the people that have helped to date. We would not have been able to achieve the success we have if it wasn't for all the volunteers that donated their time and effort, filling bait stations and clearing tracks. Nor would we have got very far if it wasn't for the organisations and individuals that donated the funds we needed to purchase materials (e.g. bait and bait stations) and to carry out contract work such as the bird monitoring.

The Kaharoa Kokako Trust would particularly like to thank the following;

- Fletcher Challenge Forests Ltd.
- Environment BOP
- J & K Mathis
- Rotorua Energy Charitable Trust
- Dept of Conservation in conjunction with the Threatened Species Trust.

As the ongoing cost of the pest control and monitoring are substantial, we will gratefully accept any donations or ideas for future fund-raising opportunities. If you or the organisation you belong to is short on cash but strong on enthusiasm you may be able to help in some other way. For instance the Rotorua Land Rover Enthusiasts Club is currently restoring a four-wheel drive vehicle which will be available for use on the project and to promote the aims of both organisations.

2. Progress to date.

In 1997 members of the Trust and volunteers established approximately 160 bait stations throughout a 300 ha section of the Kaharoa Conservation Area (known locally as Aislabie's Block). Animal pest control in this area is now about to enter its fifth successive year. Last year control was also carried out for the first time in part of the Onaia Ecological Area (the area east of Peter Stanaway's farm and west of the Onaia stream). This brought the total area under pest management up to approximately 500 hectares.

Pest control in 1997 involved filling the bait stations with 1080 pellets (after filling them 3 times with non-toxic prefeed). In 1998 and 1999 we used Talon[®] possum bait (containing brodifacoum), and last year we used 1080 again.

Each baiting session involves up to 25 volunteers and is completed in less than 3 hours.

¹ The Kaharoa Kokako Trust is a registered Charitable Trust. This guarantees that any donations are used wisely and will be tax deductible.

2.1 Target densities for possum and rodents.

To measure the results of our poisoning programme, we set 100 possum traps for 3 fine nights, after the operation has been finished. If the operation is up to scratch we expect to catch less than 15 possums. Expressed as a percent, we aim to have less than 5% of the traps catching possums. In an average piece of forest, without pest control, between 20 and 30% of the traps would normally catch a possum.

To check how well we did on our rodent control, we use "tracking tunnels". Tracking tunnels record the footprints of rats or mice after they run over a sponge soaked with food colouring. Once again we have 100 tunnels spread throughout the forest and our aim, after the poisoning, is to get no more than 5% of the tunnels tracked by rats.

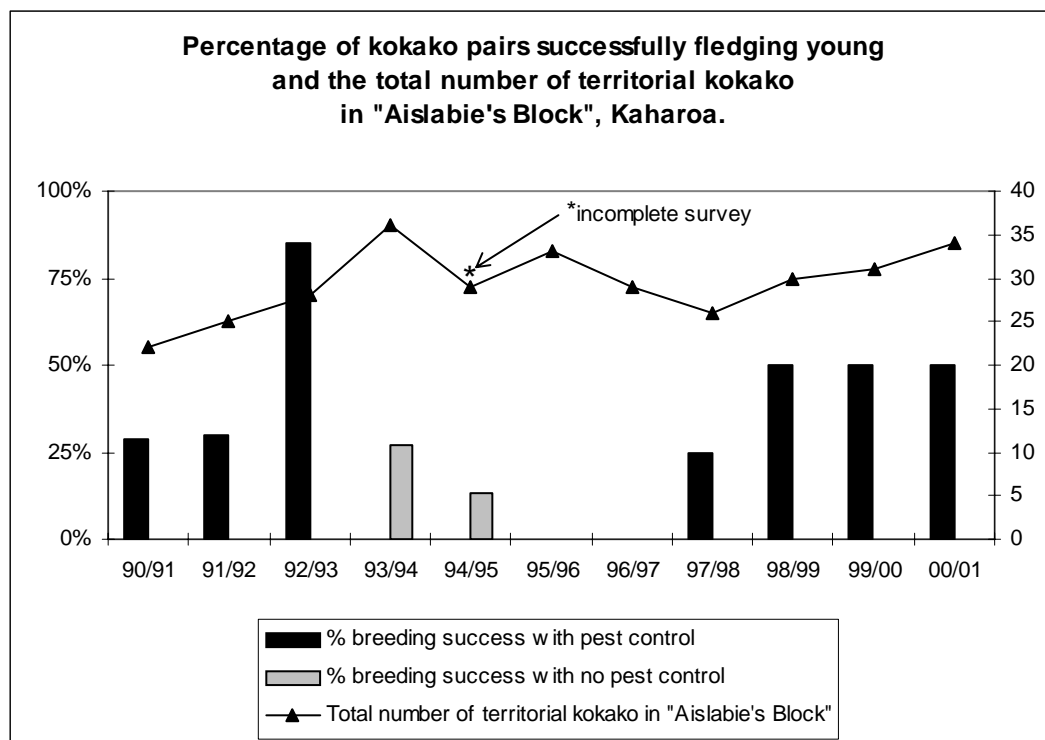
Because the kokako breeding season runs from November to March we aim to have the possums and rodents below their "target density" by 1 November.

2.2 Results (in terms of dead pests).

How did we go last year? We were a bit slow doing our monitoring (we normally do it at the start of November but unfortunately it didn't get done until early in December). Rat numbers were around 7%, which is not too far off the mark given the monitoring was a month late. The possum monitoring was confined to the "Onaia west block" (which received control for the first time). The result was around 10%. Once again this was a tad higher than we had hoped for but it's not too bad considering the monitoring was a month late and the neighbouring farmland and pine forest provided a large reservoir for re-invasion.

2.3 Successes so far.

As mentioned in previous newsletters, the best indication of our achievements is illustrated by the improved kokako breeding success.



You can see from this graph that pest control over the last three years has resulted in 50% of the monitored kokako successfully raising young. This may not sound very exciting but note that during the 1995/96 and 1996/97 breeding seasons none of the kokako in Aislabie's blocks fledged young. Another point worth noting is that the percentage is based on the ratio of monitored pairs that raise some young. Kokako often raise two and sometimes three chicks so if we were to count them like a "lambing percentage" (the total number of young divided by the number of breeding female) the figures would look a bit more impressive. Unfortunately kokako are harder to count than lambs in a paddock so when we developed the monitoring standards we decided to keep things simple scoring only success or failure. Despite the difficulties, Carmel Richardson, does her best to record the number of chicks fledged each year and she is reasonably confident that over the past four seasons of pest control at least 30 kokako chicks have been added to the population.

Though breeding success is a good measure of success the most important line on the graph is the one showing the total number of adult birds. You can see the change has not been dramatic but it is heading in the right direction. With a bit of luck (and continued hard work from the team) we will see this continuing to climb towards our ultimate goal of 100 kokako (50 pairs).

2.4 But there is more to it than kokako!

Though you could be excused for thinking our sole mission is to save the kokako, we believe the pest control will be having major benefits for many other native birds, insects and the forest in general.

Two years ago the Rotorua Botanical Society established some permanent vegetation plots in Aislabie's block. These plots are designed to monitor the impact of possums on the forest and will be re-measured periodically to monitor trends in the forest health. Once pest control is "switched off" they will help us to decide when control needs to be switched back on again.

3. What's happening this year:

If you are already on our list of volunteers you'll be getting a phone call (if you haven't already) to see if you can help with the pest control. If you haven't been involved to date but are keen to help give Peter Davey a call and he'll add you to our list.

This year we will be mixing things up a bit and will be attempting to target possums and rodents separately with different toxins. We are planning to use Warfarin for the rodents and cholecalciferol for possums. Warfarin has been used as a rodenticide for many years but unfortunately it is not effective on possums. It will be in cereal bait, like we have used in past years. Cholecalciferol is a relatively new toxin on the market, early formulations in cereal baits were very expensive and of limited effectiveness however a new paste formulation has shown a lot of promise.

If you are familiar with the project and have helped out in the past "THANKS FOR YOUR HELP".

If this is the your first contact with the project "PLEASE READ ON".

4. Where is Kaharoa Forest ?

The Kaharoa Conservation Area is about 30km by road from Rotorua. Access to the forest is gained off the end of Kapukapu Road via Kaharoa Road. Kaharoa Road runs north-east off the Tauranga Direct Road about 4 km from the intersection with Hamurana Road.

Although parts of the forest have been heavily modified by fire and logging, the area contains a wide variety of native plants, including the rare fern “para” (kingfern). As well as kokako the reserve contains a range of native wildlife, including North Island brown kiwi. A recent survey revealed that kiwi are still present in the area but are in very low numbers.

The total area of the reserve is 976 ha. This includes the 316 ha Onaia Ecological Area and an area of about 300 ha in the northern part of the reserve, which is known locally as Aislabie’s Block.

5. Why are kokako special ?

Kokako are only found in New Zealand. They belong to an ancient family of birds which includes the tieke (saddleback) and the extinct huia. They were once common in lowland forests throughout New Zealand, but there are now fewer than 1400 surviving in the North Island, and there is a remote chance that a few individuals of the South Island sub-species still survive.

They are similar in size to a small domestic pigeon or dove and their feathers are a uniform steely grey. They have a distinctive black beak and legs and a mask of black feathers around their eyes. Their most striking feature is their cobalt-blue wattles, which extend from either side of their beak to meet under their chin.

They are arguably our most beautiful songsters. To hear their beautiful ‘organ-like’ song at dawn is an experience you will not forget.

Though kokako are not particularly good at flying, their short rounded wings and powerful legs are well adapted for life within the forest canopy. Their ability to leap, run and glide through the trees and their diet of insects, fruits and leaves has led to them being described as “avian squirrels”. This is a fair comparison, as kokako evolved to fill an ecological niche that in many countries would be occupied by mammals such as squirrels, monkeys or possums.

Since European colonisation, kokako numbers have decreased dramatically and their continuing decline is mainly due to the effects of introduced predators such as possums and rats. These animals affect kokako directly by preying on their eggs and nestlings, and indirectly by competing with them for food.

6. Kokako research?

Between 1989 and 1997, Aislabie’s Block at Kaharoa was part of a “Research by Management” (RbM) experiment carried out by Manaaki Whenua and the Department of Conservation².

² A full description of this research is given in Innes *et.al* 1999 “Successful recovery of North Island Kokako *Callaeas cineria wilsoni* population by adaptive management”. *Biological Conservation* 87 (1999) 201-214.

6.1 Who are the bad guys?

One of the key findings from the kokako RbM experiment was that possums were identified as a predator. The very first time that a 'video spy camera' was placed on a kokako nest it captured a possum 'red handed' eating kokako eggs. Up until that point we all believed that possums were primarily herbivores. One scientist had noticed that the decline of kokako coincided with the spread of possums throughout the North Island though he surmised that possums simply 'out competed' kokako for food, as both species shared the same preferences for leaves, flowers and berries. Evidence gained from the RbM experiment indicated that possums not only eat kokako eggs but they have also been responsible for occasionally killing female kokako as they sat on their nests.

The other introduced predator most frequently captured on video camera was the ship-rat. Ship-rats are extremely good tree climbers and they were often videoed approaching kokako nests. Though in most cases female kokako are able to successfully defend their nests, rats can be a problem during the early stages of nesting when the female is more likely to abandon her eggs to a determined rat. A similar study using video cameras on robin and tit nests carried out at Kaharoa showed that rats are a major threat to the breeding success of small birds.

Feral cats, ferrets and stoats may kill some adult kokako but very few of these predators have been videoed preying on tree-nesting species. They do however pose a major threat to ground-nesting birds. Stoats have been identified as the number one threat to kiwi. There is virtually no chance of a kiwi chick surviving to see its first birthday in the presence of stoats. Dogs also pose a major threat to kiwi.

6.2 It's not all bad news.

Fortunately, once kokako are old enough to leave their parents and establish their own territory they are not overly vulnerable to predation, and once they are through the critical fledging period, kokako can live for up to twenty years. This bodes well for our project as most of the juvenile kokako added to the population so far will hopefully be there for many years to come.

6.3 Controlling rats and possums does help!

The RbM experiment showed that pest control targeting possums and rats can achieve major benefits for kokako, dramatically increasing kokako breeding success and their long-term survival prospects.

Between 1990 and 1993, three aerial poisoning operations were used to control possums and rats. During that time kokako breeding success increased to 85%³ and the number of kokako pairs increased from 7 to 18.

Information gained from that experiment has been invaluable in refining techniques for pest control and managing threatened species on the New Zealand mainland.

6.4 Population models and 'Pulse management'.

Information gained from the RbM experiment is currently being used to develop kokako population models. With these models, scientists and managers can use computer simulations to investigate the likely outcome of a variety of management regimes.

³ This is taken as the percentage of kokako pairs that successfully raise at least one chick to fledging. Kokako often raise two and sometime three chicks.

Because adult kokako are long lived (up to 20 years) and survival rates after fledgling are good, the total number of kokako will remain relatively stable during periods of no pest management. On average if the number of young kokako raised is equal to, or better than the number of adults dying, the long-term survival of the population will be maintained.

We refer to the process of periodically ‘switching off’ the pest control as ‘pulse management’. If you look back at the graph on page one you will note that despite the fact that breeding success (shown by the bars on the graph) declined as soon as the pest control was switched off, the total number of adult kokako (shown by the line on the graph) has remained fairly stable. The downward blip in the graph in 1994 is the result of an incomplete survey producing an under-estimate rather than a real decline in kokako numbers.

Switching off control may seem like a retrograde step, “throwing away all of your good work”, but by doing this we can make better use of our resources (people’s time and money), and reduce the amount of toxin we are using in any given area. With the aid of the computer population models we will be able to come up with management options that will maximise the benefits to kokako and be sustainable in the long term.

7. Why was the Kaharoa Kokako Trust formed?

The Trust was formed in 1997 when Kaharoa residents, Peter Davey and his partner Rachael learned that the Department of Conservation didn’t have sufficient funds to recommence pest control within Kaharoa Forest once the research experiment had finished. Peter and Rachael organised a small group of interested people who formed the Trust and put together a proposal for volunteers to carry out pest control in Kaharoa Forest.

The proposal was gratefully accepted by DOC. They helped to guide the programme through the consents process (which can be a bit of a bureaucratic minefield) and arranged for Trust members to collect bait stations from Rotoehu Forest where control work had just finished. Though DOC carried the initial cost of the programme, the Trust was able to supply the labour (normally a major cost in any pest control programme) and has been successful in attracting sponsorship to keep the programme running. Environment BOP has generously provided technical support and the possum bait for the last two years.

Because Kaharoa Forest is ‘public conservation land’ the mandate for management clearly lies with the Department of Conservation. To formalise the relationship between the department and the Trust, a “Memorandum of Understanding” has been prepared. This outlines the relationship between the Trust and the department, and the type of work the Trust is authorised to carry out.

In brief the object of the Trust is “to ensure the long-term protection and survival of kokako at Kaharoa” (the full object of the Trust is shown below). Though the aim of our pest control programme is to protect kokako we believe the project is providing benefit to the forest and all the native wildlife within it.

The forest and wildlife are not the only things to gain benefit from the Trust’s work. All of the volunteers gain a better understanding of threatened species management and pest control. Not only do they get to spend a few hours out in the ‘fresh-air’ but they also head home with a great sense of achievement, community spirit, and personal satisfaction that they have helped to “*turn back the tide!*”

If you can help in any way or are interested learning more about the Trust (perhaps with the aim of establishing a similar programme in your area) feel free to contact us.

8. Object of the Kaharoa Kokako Trust:

The object of the Kaharoa Kokako Trust is “to ensure the long-term protection and survival of kokako at Kaharoa” by;

- (i) assisting the Department of Conservation in its mandate to manage natural and historic resources, and in particular the endangered kokako within Kaharoa Forest;
- (ii) encouraging and assisting the owners of land adjacent to Kaharoa Forest to manage native forest on their land in a manner that will assist the long-term protection and survival of kokako at Kaharoa;

“assisting” may include but is not limited to the following:

- (a) taking a ‘watch-dog’ role for kokako at Kaharoa while recognising that the Department of Conservation has ultimate responsibility for their survival;
- (b) advocating for a consistent, sustainable and effective state-funded pest management programme for Kaharoa Forest;
- (c) controlling pests that threaten the continued survival of kokako and the forest environment in which they live;
- (d) consulting with the public on the need for and use of appropriate pest management programmes and control methods including the use of toxins;
- (e) organising and encouraging public involvement in the management of Kaharoa Forest, including the organisation of local voluntary labour;
- (f) promoting public awareness and education programmes concerning the preservation of kokako at Kaharoa.

9. Trustees:

The Kaharoa Kokako Trust Board is incorporated under the provisions of the Charitable Trusts Act 1957 and the board members are:

Peter Davey, Forester of Kaharoa (Chairman)

Anne Managh, Farmer of Kaharoa (Secretary/Treasurer)

John Paterson, Farmer of Kaharoa

Rachael Dixon-Davey, Plant Propagator of Kaharoa

Carmel Richardson, Contract Ecologist of Hamurana

Hazel Speed, Department of Conservation, Auckland

Dale Williams, Department of Conservation, Wellington

David Moore, Environment BOP, Animal Pest Manager of Hamurana

John Coleman, Builder of Kaharoa

For more information about the Trust please contact: