



Whangarei Kiwi Sanctuary

Annual Report 2010 - 2011



Cover image: Pax (foreground) and his mate Geraldine found together in a hollow log
Cover image credit: Linda Mulvihill

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1.0 Introduction

The Whangarei Kiwi Sanctuary (WKS) was established in 2000 to protect the rapidly declining population of the Northland provenance of the North Island brown kiwi. The population of kiwi in the WKS was estimated at 2089 in 2008 (Carlin and Murphy 2008).

The focus of the WKS has been on outcome monitoring of NI brown kiwi via radio telemetry to answer research questions on chick survivorship, age of first breeding, breeding success, adult survivorship and gathering detailed life history data. In June 2009 the decision was made by the Kiwi Recovery Group (KRG) to shift resources from outcome monitoring towards the development and implementation of tools and approaches to lower the impact of dogs on the adult kiwi population – the strongest driver of population trends in Northland (de Monchy *et al.*, 2009). This shift was delayed in part due to further unexpected declines in chick survivorship which warranted further monitoring of chicks (and hence adults) for the 2009/10 and 2010/11 seasons. However, work began in May 2010 on a dog strategy and the Whangarei kiwi team have been heavily involved and focussed on advocacy work surrounding the dog issue and at the close of the 2010/11 season the process of removing transmitters has begun.

1.1 Objective

The objective of this document is to provide a summary report on all aspects of the WKS operations for the 2010-2011 species year.

2.0 Predator Control

Northland brown kiwi recovery at WKS is based on controlling mustelids (and cats) to increase kiwi chick survival, and controlling dogs to increase adult survival. Mustelids are controlled through a network of traps laid over approximately 22,500 ha (includes core and buffer zones of approximately 17,400 and 5,100 ha respectively). Dogs are put through avian aversion training to avoid kiwi through the use of electric collars and dog advocacy work is carried out in the community.

The trapping regime that was started during the 2008-2009 year (Table 1), in response to the continual decline in chick survivorship, was continued.

Table 1. The current trapping regime as used from 2008/2009

Month	Trap checks and re-baiting frequency
November – March	Three-weekly
April – May; September – October	Monthly
June – August	Six-weekly

2.1 Mustelid and cat control

Mustelid traps are set around reserve edges, along selected ridges, stream edges and roadsides consisting of approximately 193 double set DOC 200, 283 double set Fenn 6, 12 double set DOC 250, 3 double set DOC 150, and 163 Steve Allan Modified Conibear traps (SA Cat traps) to target cats. The bait used was salted rabbit and salted possum in the Best Practice trap boxes and minced rabbit/possum or peanut butter and cat biscuits in the SA Cat traps.

A total of 215 target species were caught during 2010-2011 (Table 2), which is down from the 252 caught during the 2009-2010 year. Across all sites combined there was a 30% decrease in the number of stoats caught, a 25% decrease in the number of weasels caught, but a similar number of cats caught compared to 2009-2010. No ferrets were caught this year.

Table 2: Predator trapping results for 2010-2011. Trapped hectareage totals do not include buffer areas. Trapped hectareage for Carter Holt Harvey through to Riponui/Goddards is provided as a combined total as the sites are continuous.

	Trapped area (ha)	Stoats	Weasels	Ferrets	Cats	TOTAL CAUGHT
Carter Holt Harvey		3	2	0	0	5
Hodges Bush		0	0	0	6	6
Lovells		2	0	0	1	3
Marlow		6	3	0	3	12
Allans/Masons/Goings		3	0	0	9	12
Motatau		18	1	0	6	25
Purua		2	4	0	8	14
Rarewarewa		2	0	0	7	9
Riponui/Goddards		4	1	0	8	13
Combined total (CHH-Riponui)	8206					
Heads roadside/pikes	987	3	7	0	0	10
Manaia/Aubrey	125	0	3	0	0	3
Mimiwhangata	820	0	0	0	0	0
Ngunguru	1973	3	9	0	1	13
Pataua	233	0	0	0	0	0
Study Block Roadsides	1562	9	5	0	13	27
Taranui Road	686	4	7	0	4	15
Te Whara/Bream Head	906	5	12	0	0	17
Whangaruru	1893	9	6	0	4	19
Paired trial boxes	n/a	8	3	0	1	13
TOTAL	17393	81	63	0	71	215

There was a notable reduction in stoat captures in December and January this year compared to the previous two years (Figure 1). This reduction can not be attributed to a decline in stoat captures due to the 1080 operation in Rarewarewa as the number of stoat captures in this reserve was the same as the previous year. This low capture rate during the peak period corresponds with a relatively high number of 20 chick deaths due to stoat predation between November – February inclusive (Figure 2).

Despite the lower number of stoats caught this year the comparison of the varied trapping regime mean to the fortnightly and monthly regime means still shows no obvious detriment of using the varied regime in terms of number of stoats caught (Figure 3). The varied regime caught fewer stoats on average than the fortnightly and monthly regimes from June to September, but more from October to March when chicks are most at risk, although this increase is less marked during the peak period due to this years trapping results bringing down the mean values for varied regime.

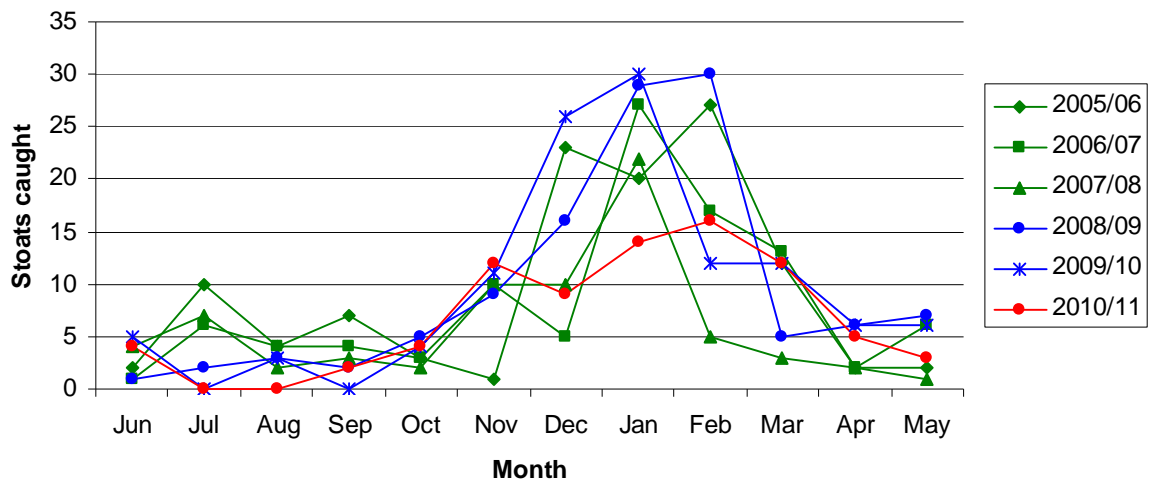


Figure 1. Comparison of stoats caught by month since 2005/06. The lines in green are the years under the monthly trapping regime, the lines in blue are the first two years of the varied trapping regime, and the red line is the 2010-2011 data.

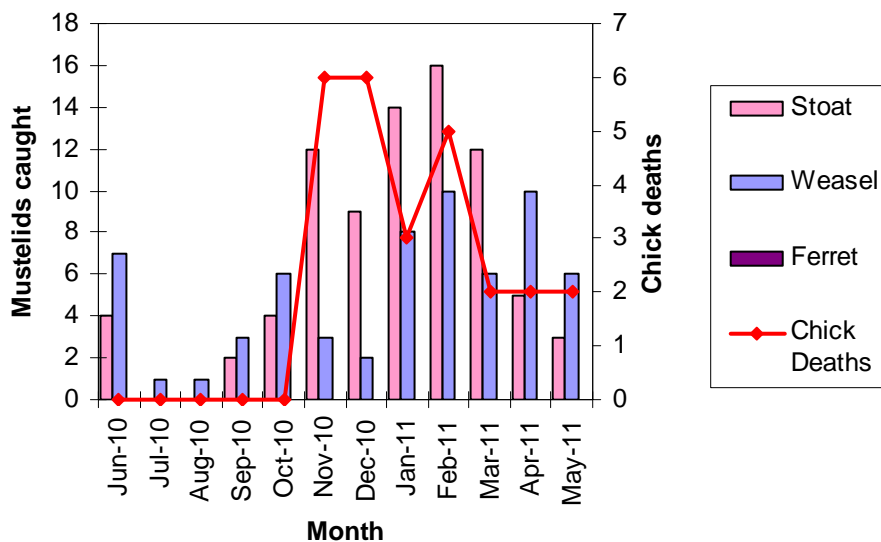


Figure 2. Mustelid caught by month during 2010-2011 compared with the number of known chick deaths due to stoat predation.

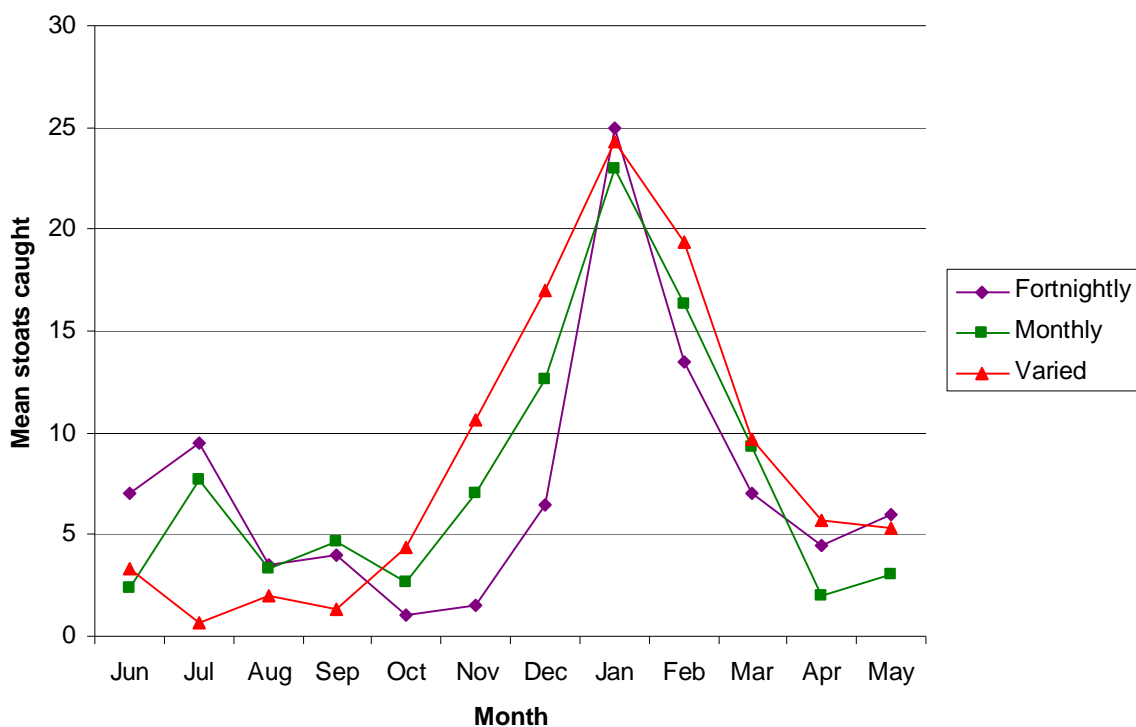


Figure 3. Comparison of mean stoats caught by month since 2003/04. The line in purple is a mean of the years under the fortnightly trapping regime (2003/04 and 2004/05), the line in green is a mean of the years under the monthly trapping regime (2005/06, 2006/07 and 2007/08), and the line in red is a mean of the years under the varied trapping regime (2008/09, 2009/10 and 2010/2011).

2.2 Kiwi aversion training for dogs

A total of 329 dogs were trained or tested in the 2010-2011 period. Forty five dogs were micro-chipped free of charge to the hunters as an incentive to attract them to put their dogs through the avian aversion programme. Pete Graham ran kiwi aversion training days throughout the Northland and Auckland regions including, Puhoi, Puketi, Dargaville, Hokianga, Warkworth, Sandy Bay and Tawharanui using the modified “Waikato method” (as developed by Adele Smaill). As well as aversion training dogs at the events Pete also carried out aversion training for individual or small groups of dog owners at Barge Park in Whangarei. All dog owners were told on the day about the limitations of the method, dog owner responsibility, kiwi habitats and their behaviour, to increase hunter/dog owner knowledge and kiwi awareness. Pete has also trained Warren Morunga from the Kauri Coast Area Office to do avian aversion training in the Kauri Coast rohe and Mike Lawler from the South Marlborough Area Office to do avian aversion training for kiwi and weka.

2.3 1080 experiment (information from H. Robertson presentation included [DOCDM-770745](#))

The results of the Riponui 1080 experiment carried out in August 2009 showed a significant improvement in the survival of chicks. This suggested that there were stoats living in Riponui that were not being trapped. The potential implications that this could have on landscape scale predator trapping management practices meant that it was worth repeating the experiment in a different study block to confirm the results.

A 1080 toxin operation was carried out at Aponga Settlement Scenic Reserve and adjoining bush on private land (collectively referred to as Rarewarewa) during the winter of 2010. This operation replicated the methodology used in the Riponui 1080 operation. It included a fence audit; landowner consultation; the production of factsheets, an operational plan and an AEE; installation of bait station lines, pre-feeding, laying and the removal of toxin baits, possum carcass clean-up, and the production of a pest link report.

The aim was to compare the survival of 20 chicks in Rarewarewa with that of 20 chicks at Riponui (1080 year+1) and 20 at Purua (trapping only). To boost sample sizes in all three sites BNZ Operation Nest Egg was done in Hodges Bush as this study site was too close to Rarewarewa (1650m between centres and 960m at nearest points) to be independent. Eggs were collected from the wild and taken to Auckland Zoo to hatch. Once the chicks had reached their hatch weight they were brought back and released into the study sites to make up adequate samples in each Total chick numbers in each of the reserves were:

- Rarewarewa -21 chicks
- Riponui - 24 chicks
- Purua - 21 chicks

The 61.7% survivorship of chicks to 6 months old in Rarewarewa, was significantly better than the 19.7% survival in Purua, the non-treatment site (Mantel-Haenzel statistic = 5.8, P = 0.016). Chick survival at Riponui, one year on from the 1080 operation there, was intermediate at 33.1%, which was not significantly different from either Rarewarewa or Purua. The results from both the Riponui and Rarewarewa 1080 experiments show that trap-shy stoats do exist and they accumulate in areas following long periods of trapping and that poisoning possums and rats can effectively remove resident trap-shy stoats.

Table 3. Comparison of the Kaplan-Meier estimate for chick survival to 6 months

Period	Rarewarewa	Riponui	Purua
2001 - 2003	57%	74%	35%
2004 - 2008	58%	6%	38%
2009 - 2010	43%	56%	50%
2010 - 2011	62%	33%	20%

2.4 Rodent and mustelid indexing

Rodent and mustelid indexing occurred in Rarewarewa and Marlow in July and September 2010. The indexing in Rarewarewa was pre and post 1080 operation.

Table 4. Rodent and mustelid indexing rates for 2010/11

Site	Predator	MONTH	
		July 10	Sept 10
Marlow	<i>Rat</i>	22	24
	<i>Mustelid</i>	0	0
Rarewarewa	<i>Rat</i>	18	4
	<i>Mustelid</i>	0	0

3.0 Sanctuary Monitoring

3.1 Adults

This season a total of 67 adult kiwi were monitored in 10 study/sanctuary sites in the Whangarei Area. This number dropped from 80 last year due to dog kills, transmitter removals and transmitter failures in that period. The total includes 22 kiwi (a mixture of adults and sub-adults) that were monitored by the Whangarei Heads Landcare Forum (WHLF) and four kiwi on Matakoho-Limestone Island which were monitored by the island rangers. Monthly mortality monitoring, six-monthly biometric checks and annual transmitter changes were carried out on all adult birds. In addition to this a mixture of adult and sub-adult birds are being monitored on private land for advocacy purposes.

3.2 Sub-adults

Monitoring of sub-adults was continued this year to further confirm the age of first breeding at 3-4 years, and to keep breeders in the monitored sample to generate enough chicks to assess the effects of the 1080 operations. A total of 16 sub-adult kiwi were monitored this year. This number dropped from 40 last season with birds either moving into the adult sample or having their transmitters removed. Monthly mortality monitoring and tri-monthly biometrics were carried out by Miriam Ritchie. All sub-adult male birds were monitored using Egg-timer transmitters to pick up nesting attempts. Seven birds attempted, six of these were unsuccessful, for reasons unknown. The 7th shares a mate with an adult male and he has been sitting in the nest with him but they may not be his eggs. As of May 31st, one bird in this seasons sample has had his transmitter removed, and two birds were lost due to transmitter-failure.

3.3 Wild chicks

This season there were a total of 37 chicks hatched in the wild from monitored birds, 29 hatched at rearing institutions (27 BNZONE chicks and 2 chicks from salvaged eggs) and released back into the 1080 research sites and two chicks that were found by a kiwi dog and of unknown parentage (chicks where their first record is being found dead or the outcome of the nest has been assumed are not included). Sixty-six of the 68 chicks were radio tagged, transpondered and monitored. The two chicks that were not monitored were chicks that were found in Hodges Bush but either died or went missing before they were able to be transferred to one of the 1080 research site. Monitored chicks were sighted fortnightly and had biometrics taken monthly. A lot of the chicks were still be monitored at 31st May 2011 so provided below is both the summary information for the season up until the 31st May and also the complete end of season results.

As at 31st May 2011;

- nine transmitters were removed after 180 days
- 15 chicks were still being monitored
- 33 chicks had died (see Table 5 for details)
- four chicks had dropped their transmitters
- five chicks were missing

As at 30th September 2011

- 19 transmitters were removed after 180 days
- four chick were still being monitored, of which two were awaiting release
- 34 chicks had died
- 4 chicks had dropped their transmitters
- 5 chicks were missing

The chick survivorship target for WKS is 17%. Chick survivorship in 2009/10 increased for the first time in five seasons due to the success of the Riponui 1080 operation. For the second year in a row, overall chick survival in the WKS increased, thanks to the Rarewarewa 1080 operation (Figure 4). This year, the survivorship in Purua had dropped close to the 17% threshold below which the population is expected to decline, thus highlighting the importance of using a pulse of toxin to kill trap-shy resident stoats.

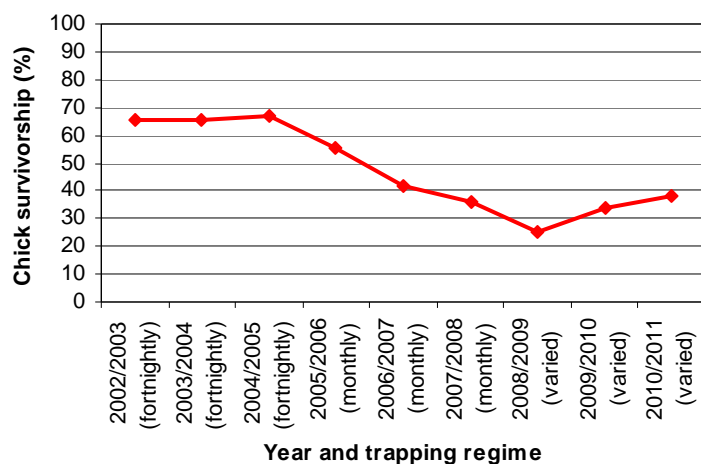


Figure 4. Chick survivorship in the Whangarei Kiwi Sanctuary since 2002/03. Note that in 2009/10 and 2010/11 that 1080 operations were carried out in Riponui and Rarewarewa respectively.

3.4 Cause of death

The 2010-2011 year has seen a similar number of deaths of monitored kiwi overall, with 32 in the 2009-2010 year and 33 this season (Table 5). The main cause of death was mustelid predation, which tripled from 8 last year to 24 this year. The reinvasion of stoats into Riponui after the 1080 operation saw 11 out of 24 chicks killed by stoats and in Purua 12 out of 21 chicks were killed by stoats. The number of monitored kiwi to be killed by dogs reduced from four down to two this season which is encouraging (birds killed at Purua and The Nook). This may be a reflection of behaviour changes of dog owners in and around kiwi areas. However, in Whangaruru where birds are not currently monitored two kiwi killed by dogs were found and handed in on separate occasions.

Table 5. Causes of death of monitored kiwi during 2010-2011 species year (2009-2010 year in parenthesis)

Cause of Death	Chick	Sub-Adult	Adult	Total
Mustelid predation	25(8)	0(0)	0(0)	25
Dog predation	0(2)	0(0)	2(4)	2
Unknown	5(6)	0(0)	0(0)	5
Natural causes	2(4)	0(0)	0(0)	2
Predation unknown	1(6)	0(0)	0(2)	1
TOTAL	33	0	2	35

3.5 Kiwi dog work

The WKS now has only one fully certified kiwi dog on our staff. Pete Graham is the handler of Rua, a Hungarian Vizsla and is also the handler of Manu who has been retired after a touch over ten years in the programme.

Rua was fully certified for kiwi in September 2007, and was also fully certified for pateke in September 2009. The results for Rua's season shown below are for only unknown or lost kiwi found (i.e. dropped their transmitters), many more known birds were encountered during the year.

Rua

- One new adult on a nest in Marlow.
- A long time lost bird from Bream Head (lost as a juvenile and re-found as an adult)
- An adult male with an expired transmitter and his unknown mate from Hodges.
- One adult male with an expired transmitter from Riponui
- One new juvenile from Purua.
- Three pairs of un-transmitted adults in Purua
- A pair of un-transmitted LSK from Motuihe island

Having the skills of Pete and Rua readily available is a huge asset to the kiwi team. The dogs are an essential tool to help locate kiwi, and a very important element to promote public and media interest in the work of the WKS.

Tom Donovan and his kiwi dog Kowhai, a yellow Labrador, also worked in the WKS to help cope with the extra workload of chick monitoring. Kowhai was fully certified for kiwi in 2003. The results below are for the period November 2010 -May 2011 are only for unknown or lost kiwi found she also encountered many other known birds that were wearing transmitters.

Kowhai

- 1 sub-adult with balance issues in Riponui (sent to Massey)
- 1 adult male on a nest with a chick in Riponui
- 1 adult male at Rarewarewa
- 2 chicks at Rarewarewa (dropped tx)
- 3 adult birds together in Purua (1 with failed tx)
- 1 adult female Purua
- 1 chick in Purua (dropped tx)
- 1 pair in Pines near Riponui
- 2 Little spotted kiwi on Taranga island.

3.6 Kiwi listening

The Whangarei Kiwi Sanctuary kiwi listening results from 2010 were not as positive as those from the previous year. Two of the station clusters showed a slight increase in mean kiwi calls per hour (Manaia-The Nook, from 4.43 to 5.2; and Tutukaka, from 6.21 to 6.77). These results are reflective of the huge and increasing amount of community effort that goes into kiwi protection in these areas, including predator trapping and advocacy for good dog control (although similar effort goes into other areas where a decrease in kiwi call counts was observed). The Kauri Mountain cluster had a slight decrease (from 3.02 to 2.45), and the remaining three station clusters had moderate decreases (Motatau-Marlow, from 6.39 to 4.54; Purua-Rarewarewa, from 12.35 to 10.63; and Bream Head, from 4.29 to 2.7). With the exception of the Manaia-The Nook cluster, all of the clusters had lower mean kiwi call counts per hour in 2010 than they did in 2008.

It is not known why the kiwi call rates for four of the six clusters decreased. Almost all of the stations that are traditionally listened from were used for the full four nights, so the data should have been comparable with previous years. Some of the data for 2010 was collected in moderately windy conditions so this will have reduced the hearing ability of the listener, although this is true for other years also.

The kiwi listening report is delayed for the 2010 listening period. This is mainly due to some sites having historical errors in the data (i.e. from new listeners re-naming or re-numbering existing sites). There has been an attempt to correct this data so that the same sites are compared over time. All sites have also been allocated a site number (only some sites had these initially). The 2010 kiwi listening report will strongly recommend that the site numbers are always used as the main reference for the site. This way a change in local name will not interfere with the analysis of the data. The draft kiwi listening report can be found at [DOCDM-734023](#).

Kiwi listening for 2011 was scheduled for 20 May – 9 June, with a back-up window 18 June – 8 July. Poor weather in the first window meant that the second window was used in a number of cases. The results of the 2011 kiwi listening will be available in the 2011-12 annual report.

4.0 BNZ Operation Nest Egg™

Thirty four eggs were collected for BNZ Operation Nest Egg during the 2010-2011 season by WKS staff, yielding 27 chicks (Table 6). The eggs were collected from 20 nests produced by 14 pairs. The two eggs from Rarewarewa were collected due to human disturbance and were hatched at Whangarei Native Bird Recovery Centre (WNBRC). One of the chicks that hatched at WNBRC was sent to Massey as it was unable to stand properly. The diagnosis was that it probably had a gait abnormality which was likely caused by the parent kiwi being nutritionally deficient when she was forming the yolk of the egg or perhaps the temperature of the egg became quite cool before it got to WNBRC. The chick was sent back up and released onto Matakohe/Limestone Island. All the other collected eggs were sent down to Auckland Zoo and the hatched chicks were released back into Rarewarewa, Riponui or Purua reserves to boost sample sizes for the 1080 experiment.

One egg was salvaged from a nest in Hodges and taken to WNBRC. The egg was semi-buried in the nest, however a chick hatched and was released into Rarewarewa. An egg was salvaged from Marlow on private land when the landowners were clearing scrub with a bulldozer and disturbed the kiwi on the nest. One egg was already smashed but they took the other to WNBRC and it hatched successfully and released back into Riponui.

Table 6: BNZONE results for 2010-2011 (salvaged eggs not included)

Site	Collected	Infertile/ rotten	Eggs failed	Hatched	Died	Crèched	% Egg viability	% Hatch	% Chick survival
Hodges Bush	28	7	0	21	0	21	75%	100%	100%
Rarewarewa	2	0	0	2	0	2	100%	100%	100%
Riponui	4	0	0	4	0	4	100%	100%	100%
Total	34	7	0	27	0	27	79%	100%	100%

4.1 Matakohe-Limestone Island BNZONE Crèche – Kiwi search and capture

Seven kiwi were transferred from Matakohe-Limestone Island during the 2010-2011 year. Five kiwi were released at Whangarei Heads (four at Mt. Manaia over two releases, and one at Kaiamba, with the other released kiwi coming from Rarewarewa) and two kiwi were released at Bream Head (Table 6). All birds were caught during night searches by island staff and Todd Hamilton.

4.2 Motuora Island BNZONE Crèche – Kiwi search and capture

No kiwi were transferred off Motuora in the 2010-2011 season.

Table 6. Number of North Island Brown Kiwi (NIBK) that have been released at sites by DOC, Whangarei Heads Landcare Forum (WHLF) and Tawharanui Open Sanctuary Society Inc (TOSSI) since 2004/05

	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	Total kiwi released
Whangarei Heads	7	32	20	9	11	-	6	85
Tawharanui Open Sanctuary	-	-	17	25	4	-	-	46
Bream Head and The Nook	45	-	-	-	-	-	2	47
Hodges	5	-	-	-	-	1	-	6
Ngunguru	-	4	-	-	-	10	-	14
TOTAL	57	36	37	34	15	11	8	198

5.0 Advocacy

5.1 Dog Campaign

In May 2010 Sioux Campbell began developing a community relations and engagement plan for Northland. This has involved extensive research, talking to a wide range of people, getting people together to share thoughts, ideas, experiences and gathering up all the ideas and work done to date. The plan is a five year programme of work and describes ways to manage the specific impact of dogs, based on existing and developing knowledge, experience and research. It focuses on Whangarei district as a pilot programme for the Northland region and is an essential component of the Northland brown kiwi taxon plan. The plan was completed in June 2011 and has been signed off by the Senior Management Team, it can be viewed at [DOC DM-795028](#). The plan is the guiding document for the WKS dog campaign.

Key findings from the dogs and kiwi social research show that there is a lack of general awareness about kiwi and where they live, that people think that their dog is not a problem if they don't have kiwi on their property and also that the belief "my dog wouldn't kill a kiwi" is alive and well (the social research report can be viewed at [DOC DM-796881](#)). The social and other research also highlighted key points that need to be addressed. These include:

- Consistency of approach
- Consistency of appropriate key messages
- Awareness, promotion and publicity
- Following through with the hard-stuff e.g. prosecutions, fines
- One-on-one contact is critical in some communities
- The importance of the experience of hearing and especially seeing live kiwi

As part of the WKS change of direction, 25 birds are going to be monitored for advocacy purposes. Ten of these birds are going to be spread over three of the WKS reserves

(Hodges, Rarewarewa and Riponui) and 15 of them will be on private land. The purpose of these birds is to raise general kiwi awareness, BNZ Operation Nest Egg advocacy opportunities and to get landowners, neighbours and entire communities aware of kiwi and the dog problem. The experiences of the WKS team so far have shown that dogging for birds of private land generates a lot of interest and promotes better dog control of their own dogs and less tolerance of wandering dogs from the landowner and surrounding neighbours who also want us to look for kiwi on their property. We currently have birds monitored on private land around Riponui and Purua areas.

The WKS team is also looking to address issues about people not knowing that kiwi live on their properties. We have produced “Kiwi Live Here” signs to be put up on busy farm thoroughfares (e.g. milking sheds, woolsheds etc) to alert new employees and visitors to the property that kiwi live on the farm not only in the bush but in a wide variety of habitats and to remind them for good dog control.

We would also like to make mention of the great work that is being done by Todd Hamilton and the Whangarei Heads Landcare Forum’s “Backyard Kiwi” initiative and the great crowds they get at the public release of kiwi into the Whangarei Heads area. The advocacy work they are doing complements the work being done by DOC and it is important we continue to work together to get consistent messages out to the public.

5.2 Media

There was a strong focus this year of using the media to promote awareness of Northland kiwi, focussing on dogs and kiwi. Sioux Campbell has played a great role in providing support and encouragement to get our message out to the public and the amount of media coverage about kiwi that was initiated by the team is impressive.

Sioux and Pete Graham jumped at the opportunity to work in with the Newspapers in Education programme and after talking with them a series of 10 weekly full page instalments of “A Trail of a Kiwi Killer” story was written and published in the Northern Advocate. Wandering dogs hit the headlines again with the WKS team taking a pro active approach when dogs had been seen wandering in the WKS. This got further attention from local and national newspapers and radio shows when Stripe was killed by a dog in Purua while nesting not long after the articles about the wandering dogs had been printed.

The story about Dark Star also got a lot of local and national media coverage in print, radio and TV. This was the bird that was released as an BNZ Operation Nest Egg chick at Tutukaka then got hit on the road, recovered at Massey but unfortunately died after being returned to Tutukaka after getting stuck in a culvert pipe and drowning.

Whangarei Kiwi Sanctuary staff maintained a culture of recognising Bank of New Zealand Save the Kiwi in all advocacy/media opportunities.

The records of our media articles, advocacy events that we have been involved in and visitors that have been taken into the field by us can be viewed at [DOCDM-288512](#).

6.0 Taxon Plan

Emma Craig, Clea Gardiner, Nicky Renwick and Wendy Sporle have finished writing the Northland Brown Kiwi Taxon Plan. The taxon plan is a comprehensive document that has set goals for Northland North Island Brown Kiwi and describes in details the management and research actions required to achieve and maintain these goals. It is the first taxon plan to be completed in the country and is a significant achievement.

The plan can be viewed at [DOCDM-836137](#)

7.0 Staffing

With the increased number of chicks being monitored this season, Cathy Mitchell was employed on a temporary contract to monitor chicks, mainly in Rarewarewa. Tom Donovan was contracted in with his kiwi dog Kowhai to search for lost chicks and adults and to do normal chick handling to help cope with the work load. They both did a great job and their work was greatly appreciated. Sioux Campbell continues to be employed part-time to write a comprehensive strategy for the dog campaign and lead advocacy initiatives. Miriam Ritchie has been employed for another year on a temporary part-time contract. Pete Graham had a short term part-time secondment to Northland conservancy to conduct PNA surveys in Rodney North ecological district. Megan Topia returned from parental leave in February on a 50% job share basis with Emma Craig. However, Megan will be leaving her position permanently at the end of August 2011 due to a change in childcare arrangements. In July 2011 Clea Gardiner accepted a part-time position as the BNZ Save the Kiwi Northland Regional Kiwi Co-ordinator. Due to a perceived risk of a possible conflict of interest with this new position and her Programme Manager Kiwi role, Clea has stepped down from PM Kiwi but will continue to work in the Whangarei Area Office part-time in the Biodiversity Assets team. Clea has been a great programme manager and the team will miss her but we also look forward to working with her in her new co-ordinator role. The PM Kiwi position was filled by Emma Craig for two months while a more permanent replacement could be found. Don Robertson joined the team as PM Kiwi in September 2011.

8.0 Whangarei Heads Landcare Forum Report (By Todd Hamilton) 2010-2011

8.1 Kiwi monitoring and advocacy

The Whangarei Heads Landcare Forum kiwi monitoring programme is funded by the BNZSKT, WWF and Biodiversity Condition Funding. The WHLF has a DOC permit to carry out the Forums' own BNZONE programme.

The project monitored five adult males at Purua Scenic Reserve. Eggs are generally not taken for incubation as it is considered more cost effective to monitor the nests until the eggs hatch, and then transfer the chicks soon after hatching to Matakohe-Limestone Island Kiwi Crèche. The males are fitted with 'Chick Timer' transmitters which minimises the invasiveness of the monitoring on the kiwi and also allows efficient use of monitoring field time.

This season five chicks were successfully hatched. To meet the chick sample size required for the DOC 1080/trapping trial these 5 chicks were left in Purua as part of the monitoring programme rather than transferred to Limestone Island. Chicks from that monitoring programme that reached the transfer weight of 1000g were then transferred directly to the Whangarei Heads – two chicks were transferred in the period covered by this report.

In addition seven kiwi over 1200g were recaptured on Limestone Island in the period covered by this report and released at the Whangarei Heads where nine years of predator control and community advocacy has been carried out. Two of the kiwi were released at Bream Head Scenic Reserve.

These kiwi releases are the cornerstone of the WHLF community advocacy at the Heads and include visiting two local schools. A total of approximately 600 people got to experience a kiwi up close before it was released into their "backyard" as part of this BNZONE programme.

Monitoring of a sample of 14 of the kiwi released at Whangarei Heads continued. The kiwi monitoring is also a powerful advocacy vehicle for encouraging dog control. Locals love to know where their kiwi are and what they are up to. The WHLF website www.backyardkiwi.org.nz gives a monthly update of kiwi locations and happenings.

Unfortunately one monitored kiwi was killed by a dog at the Nook, however the ongoing kiwi advocacy work undertaken by the WHLF and others has greatly improved dog control in the area overall.

A wild kiwi was killed by a car this year and we have increased the "backyard kiwi" road signage in an effort to reduce road kill further.

The Landcare Forum continue to appreciate the fantastic logistical and technical support given to the project by the Whangarei DOC Kiwi team.

8.2 Trapping

Thanks to funding from the Northland Regional Council, Whangarei Heads Landcare Forum trappers continued to undertake predator trapping over approximately 4000 ha encompassing The Nook, Kauri Mountain, Taurikura Ridge, Robinson Road, McKenzie Bay area, Eastern Manaia, Kerr Road and Western Manaia.

Trap coverage comprises 212 double Fenn sets, 20 single DOC 200 sets, 7 double DOC 200 sets (baited with salted rabbit) and 28 SA Cat traps.

Table 7. Total captures of predators/pests for the season (end of September 10–October 11)

Year	Ferret	Stoat	Weasel	Hedgehog	Cat	Rat	Possum
2002/03	1	55	46	65	18	391	Not recorded
2003/04	4	22	21	52	22	319	24
2004/05	1	30	17	95	38	403	140+
2005/06	0	26	13	82	29	357	191+
2006/07	0	26	8	68	17	304	147+
2007/08	0	19	22	84	18	346	150+
2008/09	0	21	25	112	12	351+	150+
2009/10	0	17	20	87	20	321+	139+
2010/11*	1	19	20	81	14	258+	104+

* interim numbers

Of particular note was the capture of a ferret in the Heads area for the first time since 2004. The ferret was caught in a Fenn Mk IV trap in October 2010. This shows the importance of using traps capable of catching ferrets, particularly at points of reinvasion. The DOC 200 traps used in the WHLF network are located back from points of potential ferret reinvasion as DOC 200 traps are not designed to catch ferrets. For additional protection in the 2011/2012 trapping season 30 DOC 250 traps have been funded by the NRC and are being incorporated into the trapping network.

We are also very aware of the results of the Whangarei Kiwi Sanctuary trapping programme and the possibility of declining catch rates due to trap shy animals. We are conscious of the importance of good trap maintenance and setting routines (including removing or burying old rabbit bait) to minimise the possibility of producing trap shy stoats. Fortunately for the WHLF the Department of Conservation carried out a 1080 possum control operation at Mt Manaia Reserve in September 2010. The control area was located centrally on the Whangarei Heads and should have removed trap shy animals from much of the Heads area.

In the 2011/2012 season the WHLF is carrying out a Brodifacoum pulse in the Kauri Mt area to control any trap shy predators there.

8.3 Kiwi listening results

Whangarei Heads continues to be part of the annual kiwi call monitoring with 21 listening sites. The mean call rates recorded continue to increase from 2.4 calls/hr/station in 2007 to 5.9 calls/hr/station in 2009.

Table 8. Kiwi listening results at Whangarei Heads from 2007-2011

Year	2007	2008	2009	2010	2011
Mean calls/ hour/station	2.4	3.8	4.0	4.1	5.9

9.0 Acknowledgements

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