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TE RAUHĪTANGA TAIAO



## Hihi Breeding Season Report 2008-09 (Ark in the Park)



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## Introduction

The hihi or stitchbird is arguably one of New Zealand's most beautiful birds. They are also now one of the rarest. Yet not so long ago hihi were a common sight in the forests of the North Island. Up until the late 1800's, 'this little ray of sunshine', whence the Maori name was derived, brightened the lives of many New Zealanders.

Following habitat loss, overzealous collecting, the introduction of new predators and disease, the mainland became an inhospitable place for hihi. With the last sighting in the Tararua ranges in 1883 the presence of hihi on the mainland New Zealand was extinguished.

However, with conservation groups and the huge efforts of largely volunteer organisations such as the Ark in the Park the hihi are gradually being returned to the temperate forests of mainland New Zealand.

Fifty-nine hihi were reintroduced into the Ark in the Park area in April and June 2007, from Tiritiri Matangi Island. The reintroduction was experimental as it is the first transfer to an area with low numbers of predators. Following a recommendation from the Hihi Recovery Group meeting in 2008, an additional 51 hihi (50/50 male /female) were translocated from Tiritiri Matangi Island to Ark in the Park. The Hihi Recovery Group is interested in the survival and breeding success of hihi in the Ark in the Park area. If successful, this may increase the opportunities for potential populations in other suitable areas with pest management. Bird feeders and nesting boxes have been located in the central area of the Cascades to assist their establishment. Post release monitoring has been carried out and breeding-season monitoring is carried out.

This document reports on the 2008-09 breeding season monitoring, from September 2008 to February 2009. It summarises the main results and observations and provides a conclusion and evaluation.

Table 1 provides a summary of the seasons nesting attempts

Table 2 and Figure 1 provide a summary of the feeder usage during the same period.

Techniques used in monitoring hihi during the breeding season are described in Appendix 1

A summarised diary of the events of the 2008-2009 season. Records of observations by Hihi contractor and volunteers are included in Appendix 2

Pictures of the nests, site names and GPS coordinates are available for future reference but not published in this report.

## **The Ark in the Park restoration Project**

The *Ark in the Park* Restoration project is a community volunteer based project in existence since January 2003, situated in the Cascades Kauri Park, Waitakere Ranges Regional Parkland, close to Auckland City (New Zealand). The project is a partnership between Forest and Bird and the Auckland Regional Council. There is an initial focus on native bird species, but the project is not limited to them – the aim is to restore functioning native ecosystems through pest control and reintroduction of native animals and plants lost from the Waitakere Ranges. Possum control conducted by Auckland Regional Council has allowed the forest vegetation to recover, but restoration of many of the “lost” species cannot happen unless they are further protected through ongoing pest control (especially for rodents and mustelids).

Unlike many other “mainland island” projects, Ark in the Park does not rely on a predator proof fence – instead, ongoing control, supported by many thousands of volunteer hours each year, continuously keeps predator numbers low enough to allow survival and breeding of re-introduced as well as original native birds and other biodiversity. The *Ark in the Park* area, as at 31 March 2007, is 1100 ha, but expansion is planned. In addition, there is a buffer zone outside it where pest control is carried out on neighbouring private property (for further information, see <http://www.arkinthe.org.nz/>).

### **Hihi breeding season 2008-09: Main observations and outcomes**

#### *Nesting*

- 13 nesting attempts were estimated (11 observed). Of these, 4 failed, 8 produced fledglings, and one was still pending at the time of writing of this report (Early March 2009).
- At least 25 fledglings were produced
- Two males from the 2007 release (YY/JM and N/HM) successfully nested, as well as several individuals from the 2008 release
- An unbanded adult female was observed feeding chicks in December 2008 – leading to the conclusion that she was a ‘Ark-born’ female from last season reproducing herself this season.
- Breeding continued well into March for at least one identified nest
- Several individuals had two successful nesting attempts (both producing fledglings), and one female, at the time of writing was in her third –so far- successful attempt.
- All nests that were observed were in natural cavities in kauri

Table 1 summarises results for the 2008-09 breeding

#### *Feeder usage*

- The amount of feeder usage did increase later in the season, when the weather was drier. The peaks in feeder usage also coincided with peaks in nest activity.

Table 2 and Figure 1 Summarise feeding use monitoring results

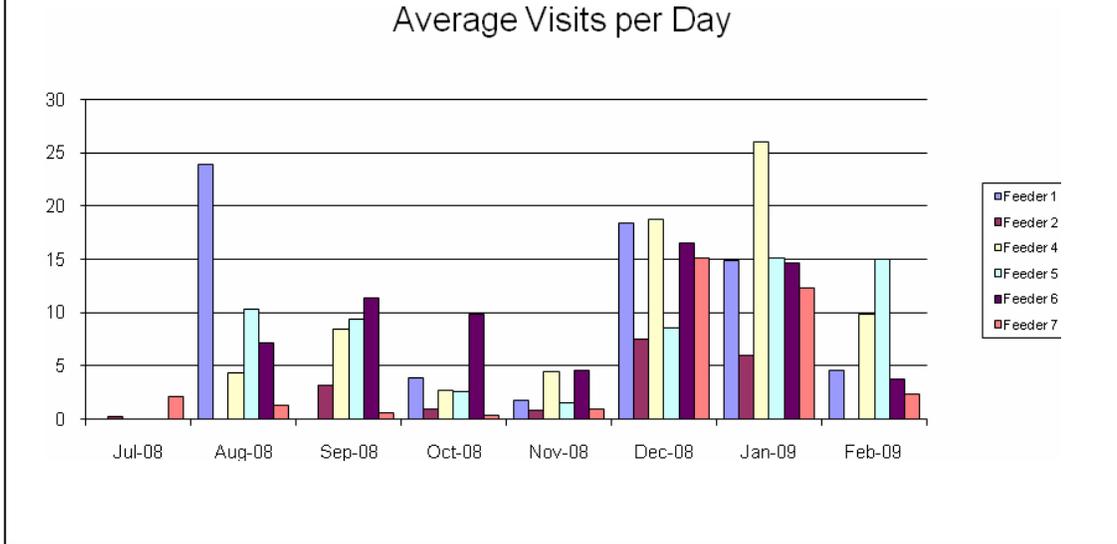
**Table 1 Hihi Nest Summary 2008-2009**

Nest Number	Date Nest Found	Tree Type	Nest Site Name	Nest Pair (m,f)	Date Fledge or Failed	Fledglings #	Comments
1	18/9/2008	Kauri	AN10	YY/JM HM/OW	4/11/2008	3	Photos obtained of male feeding 3 chicks.
2	21/9/2008	Kauri	F4 ACW	HM/GH HM/WG	30/9/2008 failed	-	Nest harassed by myna, starlings and Rosella.
3	23/9/2008	Kauri	Uk L7	WR/HM N/HM	1/10/2008 failed	-	Mynas and starlings seen to enter the nest cavity. Cockatoos also present in the nest tree.
4	25/9/2008	Kauri	Hihi knoll A	M/NG HM/HB	15/10/2008 failed	-	Mynas heard in the area.
5	2/10/2008	Kauri	AN17 ACW	HM/GH HM/WG	19/11/2008	4	When chicks fledge they appear particularly well developed, are flying well and feeding themselves.
6	4/11/2008	Kauri	Uk L9	WR/HM N/HM	1/12/2008	3	Two chicks were seen, but at least one more heard.
7	5/11/2008	Kauri	Hihi knoll B	M/NG HM/HB	21/12/2008	3	Multiple chicks heard, seen and photographed in the hihi knoll area.
8	27/11/2008	Kauri	F4 ACW	BH/M HM/WG	23/1/2009	4	Chicks seen and heard over multiple days.
9	1/12/2008	Kauri	Uk L7	WR/HM N/HM	23/12/2009 failed	-	Mynas seen in the area. However, it is suspected the nest failed due to predation, as the female has never been seen again.
10	9/12/2008	Kauri	Hihi knoll A	RW/HM f Banded, But not positively ld	21/1/2009	3	Multiple chicks seen in the area at fledging time.
11	2/2/2009	Kauri	F4 ACW	BH/M HM/WG + unbanded female	23/2/2009 in progress		In progress. 3 Rosella seen to attack female on three occasions 23/2/09. Damage to her tail feathers observed. Control measures employed.
12	Nest not Found	-	-	RW/HM Unbanded Female		2	Pictures taken this day of first unbanded adult hihi, her chicks and the male in company.
13	Nest not Found	-	-	YY/JM Female unknown		3	This male seen with chicks in the same area on Andersons track as the previous year with chicks, where also no nest was found previously.

**Table 2 hihi feeder usage 2008-2009 (courtesy Eric Wilson)**

Month	Feeder 1	Feeder 2	Feeder 4	Feeder 5	Feeder 6	Feeder 7
July 2008		0.2				2.1
August 2008	23.9	0	4.3	10.3	7.1	1.3
September 2008		3.2	8.4	9.4	11.4	0.6
October 2008	3.9	0.9	2.7	2.6	9.9	0.3
November 2008	1.8	0.8	4.4	1.5	4.6	0.9
December 2008	18.4	7.5	18.8	8.6	16.5	15.1
January 2009	14.9	6	26	15.1	14.6	12.3
February 2009	4.6	0	9.9	15	3.7	2.3

Fig 1 Feeder visits (courtesy Eric Wilson)



### *Rosella, Myna and Starlings*

- The above species have all been a problem this season. They have all been seen entering active hihi nests.
- The most concerning incident happened on the 23/2/09, when the female HM/WG was seen to have 3 physical altercations with Rosella. Interestingly, on the 3<sup>rd</sup> occasion she actually emerged from the nest and attacked Rosella that were 'chattering' outside the nest cavity. It was clearly noted that most of her tail feathers were missing by this stage. She had been seen to lose several of these in an earlier incident with the Rosella. This nest continues apparently successfully at the time of this report (early March 2009).
- Where necessary, pest control was carried out and individuals posing a threat to active hihi nests were removed

### *Other miscellaneous observations of interest*

- 4 nesting attempts made by the female HM/WG, three of which have been successful, two of these consecutively in the same cavity, F4 ACW. (This is assuming the present nest at F4 ACW which was ongoing at the time of writing of this report continues to be successful).
- On one occasion myself and two long term experienced volunteers were observing juvenile hihi, that were in the company of what appeared to be a protective adult male, banded. At one point a blackbird flew into the area, and positioned itself on a branch near the juveniles. The adult male immediately flew to within <300mm of the blackbird, let the loudest hihi call I have ever heard (from >50m away!). The two volunteers that had witnessed events from <10m said that the call was directly at the face of the blackbird, which then appeared to 'pass out', and fell to the ground without attempting flight. It met the ground with a thud, got up, shook its head then after a short moment flew off. This has since been coined the 'hihi sonic blaster call'.

- At the site of the first nest for the season, AN10, many hours were spent without interruption watching what was later confirmed as an active nest. During this time >6hrs/day was spent, with eyes glued to the cavity. During this time, two males plus, were seen regularly coming and going from the cavity. No female was seen to emerge from the nest cavity during these long stretches. View of the nest was clear, relatively near, and uninterrupted. I make the possible suggestion the female was being fed during this time, as the time line indicates the female was definitely incubating during this period. This is contrary to advice and knowledge of hihi incubating behavior.

## **Conclusions**

The two main conclusions, supporting previous findings, are:

1. Hihi are able to successfully breed in the Ark in the Park area using natural nests in large kauri trees (the first recording of hihi nesting in this particular species). As no sign of the nest boxes having been used were found, it is assumed no nest boxes were used over the season, even for roosting purposes.
2. The area provides the natural food hihi require. The supplementary food provided in feeder stations was not used to any great degree, although what usage there was provides a useful aspect to the tracking process.

## **Evaluation and lessons learned**

A huge amount of effort and cost has been invested in monitoring the hihi progress thus far in the 2008-2009 season. The low density of birds and the terrain of the Cascade Kauri Park was certainly a challenge for our monitoring contractor, and the volunteers under the guidance of this contractor.

A larger number of nests and nesting attempts have been identified this season than last season, which puts much more pressure on the resources available both paid and volunteer, along with the physical resources such as binoculars and radios.

### *Positive Factors*

- Starting monitoring at the beginning of September was a huge improvement on the previous season when monitoring started around mid October. This enabled time to evaluate patterns established based on feedback from volunteers, feeder information, and calls as heard while carrying out wider park reconnaissance.
- The use of Radios continues to be integral to the hihi monitoring process at the Ark. In all the nest finds they have played a part.
- Willing volunteers to watch nests. Particular thanks should go to Sheryl Tapp in this department. Her assistance on a regular basis has enabled resources to be used for the main focus of finding new nests.
- The advent of 'high tech' equipment, developed by Eric Wilson. Hihi Recorders, but even more so the feeder cameras are a very powerful tool.
- Experienced gained in the previous 07-08 season has been of immense value this season.
- The use of the ARC ranger station is very useful as a base, place to meet, have a break, make calls (no cell coverage) and store equipment.

- The cooperation and accommodating approach of the Senior ARC ranger, Alison Davis continues to have a very positive effect on the hihi project, and the Ark in general.
- The availability of Binoculars and other light equipment for volunteers as part of the Ark equipment is hugely useful. Most Volunteers don't have all the equipment needed for a project such as this.
- The use of the internet, email, a laptop, a printer, a cell phone and a landline is essential for the successful organisation of volunteers, communication with Forest and Bird, communication with the Ark committee and research of information.
- The contractor's knowledge of hihi behavior, Ark terrain and layout, and specific 'hihi techniques' continue to be refined and improved (see Appendix 1).

### *Negative Factors*

- The lack of accommodation available incurred loss of time and extra cost at the outset of this season. The Ark is in a somewhat remote location, hugely exacerbated by the Auckland traffic situation. The distance to local public transport is regularly identified as an issue, particularly for volunteers from overseas, but also for relative locals. An 'Ark house' concept is being furthered by John Sumich.
- While a positive factor in general, the availability of reliable dedicated nest watchers for the amount of nests found was actually relatively low. This role alone could have kept one individual busy pretty much full time for the period of October, November and possibly into the early part of December. February has now also proven to be a busy time, with the late arrival of yet another nest. This of course, is a good problem to have.
- The loss of a radio to water damage had a minor negative effect. More radios and batteries have been obtained.
- The return of equipment by volunteers has become somewhat of an issue. With the larger number of nests, comes larger numbers of observers, and more variance in arrival and departure times of volunteers. Thus, organisation of volunteers, but even more so the logistics of controlling equipment has grown. A register of equipment borrowed has been initiated, but not before some gear has been depleted. This register needs to be further implemented and rigorously enforced. Since its implementation, no gear has gone missing. It resides in the back of the 'hihi sightings' book, in the green shed.
- More radio batteries are needed.
- The presence of feral cats has been noted. The effect on the Ark hihi is not exactly known. However, a sharp decline in Robin numbers has been obvious by observation alone.

### **Acknowledgements**

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The *Ark in the Park* Restoration project is a community volunteer based project - a partnership between Forest and Bird and the Auckland Regional Council. The Auckland Regional Council (ARC) supports the Ark in the Park restoration project in many ways, including the provision of bait for the project's 1100 hectares. ARC also provides logistical support, technical advice, and their rangers are a much appreciated source of on-the-ground support. A Technical Advisory Group with specialists from the Department of Conservation, universities and Auckland Zoo meets regularly to advise on a range of issues. Significant funding for the project comes from major sponsors: ASB Community Trust (who provided, among other, resources for the hihi monitoring contract to Andy Warneford) and the Portage

and Waitakere Licensing Trusts. Funding has also come from the Birdlife International Community Fund, Auckland Zoo Conservation Fund, and the Department of Conservation Biodiversity and Advice Fund as well as the Guardian trust. However, the project's success lies in the huge volunteer commitment with many thousands of hours provided on an annual basis.

Cover Picture: Andy Warneford, Unbanded Adult Female hihi, Upper Kauri track.

### **References and Recommended further reading**

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## **Appendix 1**

### **HIHI NEST FINDING TECHNIQUES FOR ARK IN THE PARK**

**February 2009**

Compiled by Andy Warneford, Hihi monitoring contractor 07-08 and 08-09 breeding seasons, Ark in the Park.

Over the last two breeding seasons I have built on my knowledge of the behavior, whereabouts and well being of the Ark hihi.

They are a fascinating bird to work with, and have provided me with some bizarre and interesting moments, and many memorable hours in the bush both in the Ark forests and elsewhere.

#### **1) Past Hihi sightings**

My season starts with a thorough review of the 'hihi sightings' book, which is now up to volume 2. I read back through the book for around 6 months worth of sightings, but I take particular interest in the last 6 weeks to 2 months. In this part of the book I will try to pick on a particular bird, say YY/JM, choose a highlighter colour and go through just targeting that bird. This makes it easy to go back through to spot a pattern. I will repeat this with say 6 different birds.

Without this starting point, the sightings book tends to read like a complicated, albeit interesting, novel. Very quickly it will become obvious where to start looking in the 2200 hectares of the Ark. For instance, YY/JM uses Feeder 1 heavily, and is often seen by people doing AN10 and AN11 baitlines.

Using just these two pieces of information lead me straight to his first 08-09 territory, and a cavity I saw him regularly entering, on the first day of the contract! This cavity was confirmed several weeks later when 'eventually' I saw a female emerge from the same cavity.

#### **2) Cavity observations**

This brings me to important technique 2, cavity gazing. Staying awake is a challenge for this one. On spotting this first cavity, I decided not to 'call it in' as a nest, as I felt I had seen mating near the nest, but had not seen the female HM/OW enter. The only way to sort this out is to spend hours without interruption gazing at the suspected nest cavity. I spent around 6 hours a day, watching this cavity, for the best part of 2-3 weeks, most days. A couple of volunteers joined me during this time which helped with sanity (I think), but there is no way to avoid this tedious task. The key thing is to get comfortable, on a ground sheet, and fix your eyes on the nest. If you look away for any more than a few seconds, you could miss something. When the male was calling to this cavity, I did watch him closely, to try and work out where he was looking. If you watch carefully, you can actually see him gazing at the cavity also. Both of us were dying to see a female hihi appear!

### **3) Walking the tracks**

Technique 3 is a no brainer. There is no substitute for K's on the tracks. Walking up to 10 K/ms a day, is very pleasant, and gets results. I do not go off track unless I suspect I'm on to something. Off track is slow, and more dangerous when working alone. If possible, once I feel I have a possible 'hot spot', I try to involve volunteers. This brings me to two more key techniques.

### **4) Moving grid**

Technique 4, the moving grid...Once I've got a good feeling about an area I try to get 2-3 vollies to help. For this technique, I check the map, and try to work out the baitlines that best cover the area I'm interested in. Then get each of the vollies and myself each armed with a radio to stand on the main track at the beginning of say 3 baitlines, for instance on the Lower Kauri Track, at the beginning of L3, L4 and L5. Then, staying in synch move down the baitlines towards the Whatatiri track, trying to move at about the same pace. Using the radios, we stop at each bait station for around 5-10 minutes and listen out for hihi.

Which brings me to...

### **5) "Triangulation"**

Technique 5. Using any of the above methods, and once I have a 'hot spot', a sort of 'triangulation' technique is useful. I get as many vollies as I can into an area. By then I will usually have 1 or 2 specific trees of interest. I'll use as many radios as possible, and get everyone talking. Basically the idea is to try and watch the comings and goings from this general area, and see if either male or female are approaching a specific tree. Then once a tree is identified, get everyone to watch that tree from different angles, and try to spot the cavity.

### **6) GPS**

Lastly, and this will be most useful for the 09-10 season. Technique 7 involves the use of a GPS. GPS coordinates for all the existing nest sites, along with a picture of each, as viewed from the best location were noted for the 2008-09 season, and this information is made available to the project. Trails into all these nests and the exact spot to stand to observe the entrance are marked.

## APPENDIX 2

### SUMMARISED DIARY OF THE EVENTS OF THE 2008-2009 SEASON

The following is a timeline following the monitoring of the Cascade hihi second breeding season 2008 – 2009 1<sup>st</sup> September 2008 to 13 February 2009.

- 1/9/08  
HM/BB Male is seen 5 times during day at Riki's house. The bird appears to be feeding on caprosma immediately next to Riki's shed. Riki's cat is seen to be watching the bird closely all day.
- 2/9/08  
Male and Female seen in the hihi knoll area, and appeared to be moving together, possibly as a pair.  
M/NG Male and Male GB/HM are seen on the Auckland City Walk (ACW) near Feeder 4 (F4). M/NG chasing GB/HM with both birds calling and stitching loudly. (Andy, Liz, Marsha)  
HM/WG Female seen on the ACW between and little bridge at AN19 baitline.  
HM/BB Male seen at AN14/3 through to AN14/5.
- 3/9/08 Bands for the following birds were obtained on this day.  
GB/HM Male seen at F4 feeding, and staying in the area. Calling quietly.  
HM/WG Female seen on the ACW 100m south of F4, feeding and seeping.  
WR/HM Male seen on the Upper Kauri track (Uk), just up from Pou.  
HM/GH Male seen at ACW near F4.  
HM/BH Male seen at F5 and acting aggressively to...  
HM/BB Male seen also at F5.  
YY/JM Male seen at F5.  
Female bands unknown seen leaving F5 area with YY/JM
- 4/9/08  
HM/GH Male seen at F4, then left to the towards the centre of the ACW.  
M/NG Male seen at F4 left to north towards ACW.  
RW/HM Male seen at Uk at baitline R0.  
YY/JM Male seen at F1, left to the north in AN10 direction.
- 5/9/08  
Multiple calls heard on the ACW 50m in from the top entrance about 20m in on the left.  
HM/OW Female seen at F1  
YY/JM Male also at F1, calling loudly. Both birds left together to the north.
- 11/9/08  
Hihi heard in the area of Lb baitline.
- 11/9/08  
HM/OW feeding at F1, and also feeding heavily on Alsuosmia in the area while stitch calling, and seeping.
- 12/9/08  
HM/GH feeding at F5, and calling loudly in the area. HM/BB also briefly at this feeder.  
M/NG at F1. YY/JM also at F1, and calling loudly.
- 14/9/08  
Male at F4, bands unknown.
- 15/9/08  
HM/OW seen at AN10/6. She is friendly and inquisitive.  
YY/JM seen at a large Kauri between AN10/11 and AN9/11. A female also seen briefly in the area. BH/M seen in area, and chased by YY/JM.  
Hihi are seen coming and going all day from this Kauri, with the male watching one part of the tree intently. Cavity noted on a branch in the area where male is watching.  
HM/OW and YY/JM thought to be seen mating face to face.
- 16/9/08  
Various birds seen and lots of activity noted. There appears to be numerous possible territories being disputed and formed at this time, and also possible pair ups.

WR/HM Uk near view of cascades.  
RW/HM Lk at L1.

- 18/9/08  
YY/JM and HM/OW appear to have a nest. The pair have been seen alighting from the cavity on the Kauri at AN10/11, many times during the day. Another male HM/?? also seen entering the cavity, but is not thought to be the dominant male of this site.  
Calls also heard on ACW in from upper entrance, just short of Pukatea sign. Appears to be possible territory, as calls heard there each day heading up to AN10.
- 19/9/08  
BH/M seen to enter nest at AN10.  
YY/JM seen at AN10 and calling all day. Seen and heard around 50 times.  
YY/JM entered cavity on one occasion and stayed in for 30 seconds.  
BH/M seen to enter a second time, and popped his head out, and had a good look around before re-entering nest for around 30 seconds again.  
M/NG also in this area, and chased by YY/JM.  
Calls again heard at F4 on the opposite side of ACW, appears to be a strong territory.
- 20/9/08  
HM/?? seen at F4  
Male seen at F6, bands unknown  
Nest found west of ACW, opposite F4. HM/WG (f) and HM/GH (m). Multiple comings and goings by both the male and the female.
- 22/9/08  
HM/WG and HM/GH both seen entering nest cavity. Starlings present.  
BH/M seen at F1. BH/M also seen at AN10 site, and chased by YY/JM.
- 23/9/08  
New nest found at Uk L7. Both male and female seen to enter and leave nest cavity on multiple occasions.  
Male and Female both seen to enter and leave nest at ACW F4.
- 24/9/08  
Male and Female both seen to enter and leave nest at ACW F4.  
Mynas and Starlings seen near nest cavity.  
YY/JM, BH/M and HM/OW all seen in the AN10 nest site area. Lots of calling in the area.
- 25/9/08  
Uk L7 now appears to be occupied by Starlings, no hihi seen at the cavity, or nest Kauri.  
Activity at AN10 continues with both male and female present.  
New nest found on hihi knoll, in the same cavity as the first nest found from previous season.
- 26/9/08  
Female still coming and going from Uk L7 nest.  
Female and male present at ACW F4. Rosella and Mynas also present.
- 29/9/08  
No sightings of hihi seen at ACW F4  
Male and female seen entering and leaving nest at Uk L7. Starlings also present.  
No birds seen entering nest at hihi knoll.  
Activity continues at AN10 nest, with both male and female coming and going from nest.
- 30/9/08  
Male and female briefly seen to enter ACW F4 nest, but otherwise no activity in area apart from several calls heard to the north. Both birds seen feeding heavily on Alsosmia.
- 1/10/08  
Male seen in area of ACW F4, but did not enter nest cavity.  
Male seen to enter nest Uk L7.  
Hihi activity observed at AN17 ACW area, and appears to be a new territory.
- 2/10/08  
Starlings, Rosella and Myna seen to enter nest at Uk L7. hihi are not seen to enter nest cavity.  
Starlings seen to enter ACW F4 nest for 50 seconds. Male hihi approached the nest cavity but did not enter.

New nest found at AN17 ACW, with male and female entering and leaving on multiple occasions.

- 3/10/08  
AN10 nest continues to be active with both male and female entering and leaving the nest on multiple occasions.
- 7/10/08  
Uk L7 nest no activity.  
ACW F4 nest no activity.  
AN17 ACW nest still has male in area
- 8/10/08  
HM/GH seen feeding on Fushia near Cascade stream bridge.  
WR/HM seen at F6.  
AN10 continues to be active.  
AN17 ACW continues to have male and female enter. Female is seen to apparently be licking honey from honey comb adjacent to nest entrance.
- 9/10/08  
Uk L7 birds still occasionally seen entering and leaving cavity. Starlings present.  
Uk L9 appears to be another hot spot.  
AN17 ACW nest active, with male and female entering and leaving nest.  
Hihi know still active, but birds not seen entering nest.  
ACW F4 nest no activity.
- 10/10/08  
Uk L7 nest, no hihi, no starlings, no activity.
- 14/10/08  
AN17 ACW male and female coming and going all day.
- 15/10/08  
Massive amounts of activity at the hihi knoll. The following birds were positively identified...  
M/NG  
HM/HB (f)  
RW/HM  
YN/HM  
YR/HM  
HM/GH  
AN17 ACW nest continues with strong activity. Some wasps or bees seen at entrance to nest!  
AN10 nest continues with strong activity, with female feeding chicks regularly and never far from then nest.
- 16/10/08  
Hihi knoll site again very active with the following birds identified...  
M/NG  
HM/HB (f)  
HM/BH  
WR/HM  
YN/HM  
B/HM  
BO/RM  
With up to 5 males calling simultaneously.  
AN17 ACW nests continues with activity.
- 17/10/08  
Hihi knoll still active, with M/NG appearing to be the dominant male at the site, chasing all other males in the area. No birds seen entering cavity. Nest possibly no longer active.  
AN17 ACW continues to be active. Rosellas and a Tui appear interested in nest cavity.
- 20/10/08  
AN17 ACW continues to be active with male and female coming and going from nest every 2-3 minutes.  
AN10 nest continues strongly, with the female in and out of nest all day.
- 21/10/08  
Hihi knoll active still, but no birds seen entering or leaving nest cavity.

AN17 ACW nest continues strongly with male and female entering and leaving the nest regularly at about 5-7minute intervals.

AN10 still strong with female in and out of nest ever 5 minutes or so.

○ 22/10/08

Hihi knoll still lots of calling, but no activity seen at the nest cavity.

AN10 nest continues with male and/or female at nest every 2-5 minutes.

AN17 ACW nest continues strongly. Two halves of a hihi egg found at the base of the nest Kauri. Male appeared to feed female at the nest entrance, by Yvonne and Mike. NB this was also possibly noted later in season by Grant & Andy.

○ 23/10/08

AN10 very strong with male and female in and out every 1-5 minutes.

Hihi knoll, Mynas, Rosellas and Tuis all present. No activity at the nest cavity seen. Male calling in the area.

AN17 ACW continues with both female and male in and out of the nest every 5-10 minutes. Tui feeding nearby, and starling have nest in same tree.

○ 24/10/08

AN17 ACW nest male and female entering and leaving nest around every 5 minutes.

Starling present near nest. Male chased by Tui.

AN10 nest still busy, with both male and female birds in and out of the nest every 1-3 minutes. The male from Mike and Yvonne's place in Kitewaho st also seen at the nest site again. This was one of the original competitors for the nest site dominance.

YY/JM seen a number of times at AN10/13 (bait station 13) on the way in to monitor AN10 nest. This is possibly a hot spot.

○ 28/10/2008

Hihi activity across the valley from the knoll, with lots of calling from one particular area of R0/7.

This area was investigated several times, but no reliable territory tree or specific site was established.

AN17 ACW nest continues with strong activity, with multiple birds being heard in the area. Female continuing to enter and leave the nest. She usually stitches once or twice just before entering the nest.

AN10 nest continues with strong activity, with male and female both coming and going from the nest. Female seen to be chased by two male at one point.

○ 29/10/2008

Hihi activity further investigated in the area of R0, and male M/NG sighted positively in the area, but doesn't appear to have a nest cavity, or a female in the area.

○ 30/10/2008

AN17 continues strong activity with both the female and the male entering and leaving the nest every.

Indications of a new hot spot, beyond F4 next to the adjacent hand rail on ACW. Several calls from a particular tree over 3 consecutive days.

○ 31/10/2008

AN10 continues with the female showing most activity around the nest. The male continues to make many calls from outside the nest, in particular while the female is in the nest. A particular Rewa Rewa adjacent to the nest Kauri seems to be in favour as a calling post and food source. A new arrival at the nest seems to be a regular feature, male BH/M. This is the male from Mike and Yvonne's place, and was also originally a competitor for this nest and female.

AN17 Both male and female in and out of the nest every 1-2 minutes. Female usually gives a single stitch before entering the nest.

A kaka is seen nearby the nest, and seems to stay in the area for some time. A kaka was observed feeding in a tree near to F4 for around half an hour at about this time.

Rosella in the area, and chased by Tui.

○ 3/11/2008

AN17 continues strong activity, with both the female and male entering and leaving the nest at regular 1-2 minute intervals.

AN10 nest shows no sign of the male or female coming and going from the nest. Chicks are thought to be heard from the area. However, after several hours attempting to locate the chicks, no sighting was made. It is felt 3-4 chicks are out of the nest, and in the area.

The male from this nest appears to be establishing a new territory across the small valley from the nest site.

Another male BH/M is in the area, and might be feeding the fledged chicks, but not sighted.

○ 4/11/2008

3 chicks photographed in the area of AN10. The chicks were extremely close, so much so that they were hopping across Laurence Bechet's large camera lens, and around her hands. However, once she moved around 2m from the chicks she was able to take some particularly spectacular photos.

It is noted that while in the immediate vicinity of the chicks, ie within 10m, the male BH/M will not in general feed them, but stays at a distance. However, feeding was observed at a close proximity on one particular occasion, which resulted in high quality pictures being taken.

All three chicks appear in particularly good health, with one chick appearing a little more developed than the other two. Some small flights are taken by the chicks, which are all very vocal, and appear to be getting roughly even amounts of food.

A fantail appears to take some interest in the chicks. Also, two males briefly enter the nest cavity, and leave together, one chasing the other.

AN17 female and male continue to make regular visits in and out of the nest.

There is at least two entrances to this cavity, with both regularly being used. At the lower entrance there is a confirmed at least partial bee's nest, the female has been seen apparently feeding on, probably licking honey from the surface. Chicks are thought to be heard calling from within the nest, particularly as parent birds approach the nest for feeding.

○ 5/11/2008

Uk L9 shows continuing activity, with both the female and the male entering and leaving the nest cavity regularly. Mynas are seen in the area, and attempts are made to deter these birds, successfully at least on an individual basis in low numbers.

The original hihi knoll nest is judged to be defunct, but a new cavity is identified immediately.

Hihi knoll new nest appears to be well advanced, with male and female birds seen entering and leaving the cavity. The nest male M/NG spends large amounts of time calling in the area, and aggressively chases any other male that comes to the 'knoll' area.

○ 6/11/2008

An attempt to band the AN10 chicks is made. The chicks are successfully located, and appear to be reasonably settled. However, they now appear to be proficient flyers, more wary, and somewhat more agile. A decision is made to not band the birds in the interest of the birds safety and well being.

Some rivalry appears to have emerged between the males BH/M and YY/JM, with each of these two birds vying for the attention of, and the opportunity to feed the chicks.

Both birds are seen to feed at least 1-2 of the chicks, but possibly not two males feeding the same chick.

Hihi knoll nest continues strongly with both female and male seen entering and leaving the nest, and feeding from trees immediately adjacent to the nest kauri, but particularly nearby rewa rewa. This presence of rewa rewa seems to be common to all sites.

Stitching again heard in the R0 direction across from the hihi knoll, but no territory clearly identified.

Uk L9 continues strongly, with a regular stitch by the female prior to entry.

○ 7/11/2008

Uk L9 continues strongly, with both birds in and out of the nest consistently every 1-2 minutes

AN17 continues strongly, with a bird in and almost every minute.

○ 8/11/2008

AN17 continues strongly, with the chicks heard loud and clearly from the nest. The male and female are furiously feeding the chicks, at least one of which regularly comes out to meet the parent bird as it approaches the nest with food.

Uk L9 continues, with both birds spending around 2-6 minutes in the nest at a time.

○ 11/11/2008

AN17 still appears to be continuing strongly, with the chicks clearly audible from the viewing area. Around this time the chicks are also seen to briefly appear out of the nest, and meet the parent birds as they bring food to the nest. The chicks are then seen to follow the parent birds into the nest, and multiple chicks are clearly audible at that time.

○ 12/11/2008

AN17 continues very strongly, with both the female and male coming and going very strongly. Visits to the nest by both birds seem to last around 1 minute, and the chicks continue to be heard clearly from the viewing area.

The male YY/JM from the AN10 site makes occasional calls to this nest, including briefly entering the nest cavity.

Uk L9 continues to have both the female and male coming and going continuously.

Rosellas are seen around the nest, and the female approaches them, and appears to chase them away from the vicinity of the nest. Mynas also present, which appears to make the hihi both male and female very hesitant to enter the nest cavity.

AN10 chicks continue to be heard, but not seen. The male BH/M that was feeding these chicks is still in the area constantly, and calls regularly.

- 13/11/2008
 

Uk L9 continues strongly with both male and female seen at the nest, and entering/leaving regularly. However, Mynas are regularly still in the area, and when they are present in the immediate vicinity of the nest, the male and female will not enter, and do not enter the nest for some time, up to half an hour, after the Mynas have left the general area. Chicks are possibly seen at the entrance of the nest. Two Mynas are removed at the nest site. One more possible. AN17 continues strongly. Both birds in and out of the nest regularly. There is a Tui nest in adjacent tree. The parent Tui sometimes chase the hihi from this nest site, but it doesn't appear to deter the hihi overall from feeding chicks, and calling.
- 14/11/2008
 

Uk L9 continues strongly, with both birds in and out of the nest. Tuis are seen to show interest in the nest, along with Rosella to a lesser degree. However, this does not appear to deter nesting efforts. No Myna are seen at the nest site or surrounding area. Hihi Knoll nest continues strongly with both birds coming and going from the cavity at about 3-5 minute intervals. AN17 is showing elevated levels of activity, with chicks seen at the entrance of the nest again greeting the incoming parent birds. Insects are also seen at the entrance of the nest. Given the events of the previous season there are concerns that these may be wasps. An insect nest is obvious at the entrance, and some nest material (nest comb) is taken away by Kelly Booth and analysed by her supervisor. He reports the comb is that of Bees. Interestingly, this concurs with earlier reports that the female appeared to be licking honey from the comb area. These birds continue to be inquisitive, and regularly 'check out' and visit nest monitors at close quarters, i.e. <2m.
- 5/11/2008
 

AN17 Continues with both male and female birds seen to come and go from the nest cavity. The male comes down to ground level next to the nest monitors, and call loudly.
- 16/11/2008
 

AN17 chicks clearly able to be heard when parent birds away from nest, and are very loud when parent birds at the nest. One chick individual in particular regularly moves outside as parent bird approaches, get fed outside the nest, then enters the nest following the parent bird's entry. Uk L9 continues strongly, with both parent birds visiting at approximately 1 minute intervals. Mynas and Cockatoos regularly present in the area. When they are present, both hihi parent birds appear reluctant to enter the nest cavity.
- 18/11/2008
 

AN17 nest parent birds both in and out of nest cavity at regular 1 minute intervals roughly. Male hihi chased at one point by a blackbird and on another occasion by a tui. Tui nest noted adjacent to hihi nest tree, and tomtit nest also nearby. The tui from the adjacent nest appear agitated, and chase any bird between roughly 2m above ground level, and 2m beneath the canopy.
- 19/11/2008
 

AN17 nest has fledged with 3 healthy looking and well developed chicks forming a crèche adjacent to the nest kauri. The female only appears to be feeding the chicks, and behaves aggressively toward the male when he attempts to approach the chicks. Both parent birds are still entering the nest cavity at regular intervals, possibly indicating at least one more chick still to fledge. Multiple hihi heard in the area of the koura sign, next to Cascade Falls track and bridge. Uk L9 nest continues strongly, with both nest male and female in and out of the nest at about 1-2 minute intervals. Rosella show some interest and curiosity in the nest cavity.
- 20/11/2008
 

AN17 chicks east of nest, 3 of. Female hihi continues to go to nest cavity. A tui harasses the female when she does so. A harrier is seen in the area drifting past. Uk L9 both nest parent birds seen in and out of the cavity all day. A harrier is observed in the area. Myna are observed in the area. Hihi knoll continues with both nest parent birds in and out of the cavity. Myna, blackbird and rosella are observed in the area. Hihi are heard in the Andersons track area of AN10 baitline.
- 21/11/2008
 

Hihi calls heard in the T13/10 bait station area. There is little activity at the Uk L9 nest in the morning. The female is seen to enter once and leave.

At hihi knoll a chick is found at the base of the nest kauri. The chick appears to be very young. Other chicks are possibly heard in the area. The young chick is thought to be fed at least once by the nest male. Excellent photos of this chick are obtained.

Another cavity is spotted, with the female entering and leaving on numerous occasions.

Uk L9 nest continues strongly in the afternoon, with the female in out at roughly 10 minute intervals.

○ 22/11/2008

Uk L9 continues strongly, with the female regularly in at out of the nest at roughly 10 minute intervals. Rosella are seen at the nest, and chased off by female hihi.

Hihi knoll chick seen again, close to the place it was seen the previous day. It looks to be in good health.

Hihi reported to be heard on Robinson Ridge track, near F0 start.

○ 25/11/2008

Uk L9 nest cavity continues strongly with the female in and out of the cavity between 1-5 minutes, or occasionally a little longer.

At hihi knoll the following birds are positively identified;

M/NG

RW/HM

YB/HM.

Multiple chicks are heard in the area. The chick that is thought to be the original one found in this area has grown substantially, and is now managing short flights between trees.

The four AN17 chicks are all now in the F4 area, being fed by a male, but also flying well, feeding them selves, and making stunted sounding hihi calls. All birds look female, but will not be showing full plumage at this stage.

○ 26/11/2008

Original ACW F4 cavity appears to be of interest to a new male. The bird is seen to enter and leave the cavity several times. The same bird BH/M spends long periods in a rewa rewa adjacent to the cavity kauri, calling continuously and chasing any other hihi that enters the area. This is the male that took over feeding chicks at the AN10 site. Mynas present in the area, chasing hihi, but also being chased by tui.

Uk L9 nest very quiet. Rosella seen to enter the nest cavity, and stayed in the cavity for around 2 minutes.

AN17 ACW chicks very well advanced. All four chicks seen feeding, flying, climbing and even attempting calls very well.

○ 27/11/2008

F4 nest building in full swing by female HM/WG. Attempts are made by the female to drag huge sticks (300mm+) into nest cavity. She appears very determined in these efforts, even observed successfully moving her beak to one end of a stick, that had already proven to too difficult to drag into the nest whilst been held in the middle. This all occurred up in the kauri, adjacent to the nest cavity.

The male BH/M (Mike & Yvonne's) calls from within 10m of the nest the entire time she is there.

At the hihi knoll RW/HM and M/NG both present. Female of unknown bands thought to be heard in the area also.

○ 28/11/2008

ACW F4 nest still busy. HM/BB enters the area and is chased away by BH/M. RW/HM also in the area.

HM/WG continues work on the nest. Both female and male in and out of the nest over long periods.

Uk L9 appears to be very quiet. Concerns voiced about the presence of Mynas and Rosella.

○ 1/12/2008

Uk L9 continues to be very quiet.

Hihi knoll, chicks heard in the area. Sounds like 3 in number.

○ 2/12/2008

F4 nest continues strongly. Several males in the area, and the female is seen at ground level collecting more sticks.

Uk L9 shows some activity, with the female seen to enter the nest once, and leave after around 5 minutes.

Multiple Juvenile hihi seen around the ACW.

Chicks seen been fed in the hihi knoll area.

○ 3/12/2008

Uk L7 nest building in full swing. The female is seen to enter with building material and leave on a regular basis. The male calls in the area regularly.

ACW F4 nest has several males calling in the area. No sign of the female, she is probably incubating eggs.

○ 4/12/2008

Visitor Renee Doyle, Birds of Australia, volunteers for the day and positively identifies 2 fledglings with RW/HM. They appear in good health and well developed. The sighting is in the area up the hill from Poe, Maori carving.

Uk L7 continues to have males in the area, female is still unseen so possibly incubating eggs.  
ACW F4 female continues to incubate eggs. Male M/NG enters briefly. Male HM/GH is calling in the area. BH/M also in the area and chased by M/NG.

- 5/12/2008  
Uk L7 female N/HM appears to be still in the area.  
Chicks again heard on the hihi knoll.
- 8/12/2008  
ACW F4 female only appears once over a two hour period from nest. Probably still incubating eggs.
- 9/12/2008  
ACW F4 activity continues with multiple male in the area. No Myna, starlings or Rosella noted. Multiple kereru in area making lots of noise.
- 10/12/2008  
Hihi knoll new nesting efforts found at the original nest cavity. This is the second attempt at using this nest cavity from the 07-08 season, this season. Both the male and female are seen to be entering and leaving the nest cavity at about 5 minute intervals. The parents are probably feeding chicks.  
2 fledglings are seen at the hihi knoll, making short flights.  
Uk L7 WR/HM calling repeatedly in the area of the nest tree. Y/HM also in the area, not calling for the most part, but did call back to WR/HM on occasion. Nest building work still progressing possibly.  
ACW F4 female continues to incubate eggs for half hour periods. Male calling nearby.
- 11/12/2008  
Uk L7 female in and out. Male calling in the area.  
Multiple birds observed on the Uk boardwalk, next to the ARC sign. Male WR/HM feeding two recently fledged chicks. Also, one very well developed bird, either well advanced fledgling from this year, or a female from last year, un-banded of course.
- 12/12/2008  
Hihi knoll, RW/HM feeding a chick on the hihi knoll.  
One unknown bird seen to go into the nest cavity.
- 13/12/2008  
BH/M seen at Feeder 5, calling in the area and stayed in the area for several minutes.
- 14/12/2008  
Fledgling seen been Uk L7 and Uk L9 on the Upper Kauri Track. Adult male in the area also, but not seen to feed chick.  
  
No sign of activity at Uk L7 or Uk L9.  
  
The female continues to come and go from the F4 ACW nest, about every 6-10 minutes. She continues to use the F4 feeder, but is also seen grazing on nectar and berries and possibly insects.
- 16/12/2008  
The hihi feeder use is noted to be very high by volunteers doing the feeder rounds. It was noted by self that a couple of feeders, F4 and F7 were actually empty at one point. This found not to be due to them being missed or not filled, but in fact due to heavy use.  
  
Uk L7 continues with female in and out of the nest ever few minutes. N/HM  
  
Hihi knoll nest continues with female in and out of nest every few minutes. Female thought to have HM on one leg.  
  
F4 ACW nest female continues with activity, in for only a couple of minutes then out. Females 'stitches' on both way in and out.
- 17/12/2008  
One of the chicks from this area is observed, flying well and looking healthy.  
  
No activity seen at the second nest site. (first hihi nest from last season)  
  
Uk L7 nest female continues to enter and leave the cavity every few minutes. Male calling in the area.  
  
F4 nest activity continues, with female in the nest for around 20 minutes at a time. Appears to be incubation behavior.

- 18/12/2008  
Uk L7 female N/HM on the nest for roughly 20minute periods, probably incubating.  
  
Hihi knoll nest female and male in and out every few minutes, probably feeding chicks.  
  
F4 nest incubation of eggs by female continues, with her on the nest for 20 min spells.
- 22/12/2008  
F4 nest appears to be continuing with incubation, spells on nest have dropped to around 13 minutes.  
  
Uk L7, no nest activity seen. This is a concern, as from previous activity the female appeared to be busy incubating eggs.  
Mynas seen in the area.  
  
Hihi knoll nest appears to have chicks, as both birds in and out of the nest regularly.
- 23/12/2008  
Sadly again, no activity at the Uk L7 nest. It is suspect the female has been predated. This is due to the fact the nest was busy every day, with confirmed sightings of the female, then suddenly the nest has no activity, and the female is not seen.  
  
Juveniles seen feeding on Tutu in the Waitakere stream, in the area of Pou. These birds look well developed, are flying well and are starting to show adult colours.  
  
F4 nest activity is high, with shorter spells spent on the nest by the female.  
  
Hihi know nest continues with activity, and only short spells on the nest of a couple of minutes.
- 26/12/2008  
F4 ACW nest continues with strong activity, the female in on and off the nest around every 5 minutes. The eggs have possibly hatched.  
  
Uk L7, nothing seen or heard, apart from solitary male in the area calling and looking into nest on several occasions.
- 30/12/2008  
Rosellas seen in the area of Uk L7 nest, no hihi.
- 31/12/2008  
Uk L7 no hihi activity.
- 5/1/2009  
F4 ACW nest busy with activity, both male and female in and out every couple of minutes.  
Chicks can be heard, and actually quite noisy.  
  
Hihi knoll also busy, both birds in and out every couple of minutes.
- 6/1/2009  
F4 ACW nest continues strongly with both the female and male in and out of the cavity every 1-2 minutes.
- 7/1/2009  
F4 ACW nest continues strongly, with mostly male HM/GH in and out every minute or so. The female HM/WG also in the nest cavity occasionally.  
  
Hihi knoll nest busy, with both female ??/HM and male RW/HM in and out regularly.
- 8/1/2009  
F4 ACW nest continues strongly, with male HM/GH doing almost all of the feeding.
- 10/1/2009  
No activity seen at F4 ACW nest.
- 14/1/2009  
Calls and possibly chicks heard in the F4 ACW nest area.
- 16/1/2009

Hihi knoll very active, unbanded adult female seen, with adult male and several well developed chicks.

F4 ACW nest very active, with the chicks heard loud and clear. Both birds feeding the chicks at 1 to 6 minute intervals.

- 17/1/2009  
F4 ACW nest continues strongly, with multiple males present and both birds in and out of the cavity at 1-3 minute intervals.
- 19/1/2009  
F4 ACW nest very active. Chicks can clearly be heard from inside the cavity, and Juvenile chicks are hanging around outside the cavity, and appear to get fed occasionally as the male and female come and go from the nest.  
  
Further along the ACW, a fantail is seen to approach Juvenile hihi, with a large bunch of insects in its mouth. The fantail appears to be trying to feed the Juveniles, and also appears agitated when the male hihi HM/GH approaches the young hihi.
- 20/1/2009  
The unbanded adult female seen with 3 Juvenile on ACW near the cascades small wooden footbridge.  
  
F4 ACW nest continues strongly, with both parents feeding the chicks every 1-5 minutes. Juvenile hihi are also hanging around the nest, beating wings furiously and apparently trying to get food from the parent birds.  
The female is seen with a beak full of small red berries, and possibly manuka leaves, prior to approaching nest.
- 21/1/2009  
F4 ACW nest continues strongly with both male and female feeding chicks, and another male RW/HM also entering the nest occasionally.  
  
Hihi knoll nest has fledged, no activity at the nest cavity, chicks heard in the area.
- 22/1/2009  
F4 ACW nest chicks beginning to fledge. Adults seen to feed the chicks in trees around the nest site, but also in the cavity.
- 23/1/2009  
F4 ACW nest fledglings still doing well, at least 3 in the area positively identified. Both female and male feeding the chicks.  
As with the AN10 nest, it is noted that if human watchers are too close to the chicks, the parent birds will not approach the chicks, so feeding does not occur. Roughly 10m seems to be the minimum distance the parents are comfortable with when feeding chicks.  
It is also noted that any noise made by walkers on the ACW coincides with the chicks going very quiet and still, reliably.
- 2/2/2009  
BH/M seen at Kahikatea sign on the ACW with two Juveniles. One of the Juveniles was making stunted sounding male calls.  
  
3 Males M/NG, HM/GH and unidentified with a female in the vicinity of the F4 ACW nest site. The female is seen to take a whole large berry, Bush Lawyer, and swallow it.  
On another occasion she is seen to take Alsuosmia whole also.
- 3/2/2009  
Activity again building in the area of the F4 ACW nest area. 4 males M/NG, BH/M, WR/HM and HM/GH all seen showing interest in an unbanded Adult female in the area.  
Female HM/WG clearly seen taking large building material into the former F4 ACW nest cavity.  
  
Mynas seen and heard in the area. 3 mynas including 1 adult and 2 Juvenile dispatched.
- 4/2/2009  
F4 ACW activity continues, it would appear in nest building mode.  
Adult male, adult female and Juvenile all seen entering the nest cavity.
- 5/2/2009  
F4 ACW nest building activity continues. Nest female using the F4 feeder heavily.
- 6/2/2009  
Waitangi day.

1 Juvenile  
1 Adult unbanded female  
4 Adult male including M/NG, HM/GH, NY/HM and BH/M  
All seen on ACW just south of F4 nest, near to Large Kauri diagnosed with PTA.

- 7/2/2009  
F4 ACW activity continues strongly. Female seen to enter nest, but did not appear to be carrying anything. This probably means she is carrying the very fine hairs of Punga fronds, which they are known to line the nest with in the later stages of nest building, just prior to, or even during egg laying.  
Multiple hihi in the area, male and female, both banded and unbanded.
- 9/2/2009  
Female is not positively identified as entering the nest all day. Males BH/M and HM/GH both enter the nest briefly, and are seen looking into the nest cavity. At one stage HM/GH enters the nest followed closely by BH/M with the latter apparently chasing the former out. BH/M appears to be the dominant male, and calls loudly in the immediate vicinity of the nest all day.
- 10/2/2009  
Multiple males in the area of the F4 ACW nest, but mainly BH/M and HM/GH. Female on seen all day. Probably in egg laying cycle, thus staying off the nest for long periods of time.
- 12/2/2009  
Female HM/WG seen to enter the F4 ACW nest for 2 minutes, then out. Egg laying??  
An unbanded female is also seen to enter the nest, for 10 seconds! Perhaps just having a look??
- 13/2/2009  
Unbanded Adult female seen several times in the vicinity of F4 ACW nest site, in the company of BH/M male. HM/WG not seen all day.
- 16/2/2009  
HM/WG female seen to enter the nest cavity at F4 ACW and remain in the nest for 10-20 minute intervals. Incubation of eggs has begun. Incubation probably started 13-14<sup>th</sup> Feb, so hatching of chicks will occur around the 28<sup>th</sup> of Feb 2009.
- 18/2/2009  
F4 ACW nest incubation continues, with HM/WG female on the nest for 10-20 minute intervals, and off the nest for around 5 minute intervals.  
BH/M still at nest site, and very vocal and interested in the activity at the cavity.
- 19/2/2009  
F4 ACW nest incubation continues, with female on the nest for 15-25 minute intervals, and regularly checked on by the male BH/M, who looks into the nest, and calls loudly. He appears to call her off the nest each time she leaves, and he also looks into the nest just before she leaves on several occasions.
- 23/2/2009  
The female at the F4 ACW nest site is seen being attacked by Rosella on three separate occasions by two volunteers. She appears to have lost at least a couple of tail feathers in the altercation. On the third occasion it was actually the hihi HM/WG that flew aggressively at the Rosella as she made noise in the immediate vicinity of the nest cavity. Control measures were employed, with 4 Rosella and 2 Myna removed. Nest activity, incubation at the time of this report (early March), continues.