



No. 2: 2018

11 June, 2018

P.O. Box 401072
Mangawhai Heads 0541

Our website: www.fairytern.org.nz
Email: info@fairytern.org.nz

Dear Members,

In this issue: Fairy tern news; Thanks: Sheila Coombs, Bennetts, Malcolm Pullman;
News snippets: Obama visit, Mangawhai dredging, Museum display, Fish study;
Rangers' reports: Waipu, Mangawhai, Pakiri, Papakanui.

First, welcome to new member: Georgina O' Connor of Mangawhai.

Fairy Tern News

Sightings: Ian Southey reports seeing four of the current juveniles in the Kaipara in April. and he saw a total of 25 fairy terns there in early June, but only two juveniles this time.

Trapping: The Trust has bought 10 traps for the Waipu About Tern volunteers who have been trapping on the Waipu Spit for the last few months. Their catch totals March - May: 37 rats, 47 mice, 1 cat, 1 stoat.

Reg Whale has continued trapping on the Mangawhai Wildlife Refuge and boundaries. His catches March – May: 49 rats, 7 hedgehogs, 2 cats, 2 stoats, 1 weasel, 1 rabbit.

The Mangawhai Endowment Fund, which part funded the Mangawhai trapping last year, has this year turned down our funding application, leaving us casting about for other funding sources to carry on this vital work.

Fairy Tern Recovery Workshop: This was held on 22 March this year and for the first time brought together all the groups and individuals involved in NZ fairy tern recovery. It built on the work of the Review which was completed last year.

The first task was to agree on **fundamental objectives**, which are: 1) Increase viability of wild NZFT population 2) Decrease probability of global extinction 3) Integrate *Matauranga Mauri* 4) Increase cost effectiveness 5) Increase wider ecosystem benefits 6) Increase awareness.

The **means** of achieving these were the subject of much discussion, but everyone agreed that year-round predator control at all breeding sites is a priority. Nest management, increasing breeding sites, protecting existing sites including foraging areas were also considered important. Captive breeding was considered a long shot at this stage.

Next steps: DoC is to set up a Fairy Tern Recovery Group to guide the process and update the Fairy Tern Recovery Plan as the current plan expired in 2015.

Task groups to work on the fundamental objectives have been set up.

Thanks.....

.... to **Sheila Coombs** who joined us earlier this year and has made a most generous donation of a thousand dollars to the Trust. As we have been unsuccessful in all our funding applications so far this year, this donation is most welcome and very much appreciated.

Thank you, Sheila!



.... to **Bennetts Chocolates** who have produced these beautiful fairy tern chocolate eggs with most realistic praline shells. They are donating some of the revenue from sales to the Trust and have already this year donated more than \$500. Thank you, Mary Bennett and all the team at Bennetts!

Photo: Bennetts Chocolates

.... to **Malcolm Pullman** who is donating one of his limited edition framed fairy tern prints to the Trust to help with fundraising to assist our work protecting our rare shorebirds. Malcolm says: "Note this edition has the \$1.40 stamp, personally licked (imprinted with the photographer's DNA) in the bottom left hand corner."

Thank you, Malcolm!

Photo: Malcolm Pullman



News Snippets

Obama Visit Highlights Land Grab:

When former US President Barack Obama came to play golf at the Tara-Iti Golf club which adjoins the Mangawhai Wildlife Refuge, there was the expected heightened security and police presence along with media trying to get the best pictures of the event. What was surprising was that the police had been told that a large section of the DoC Wildlife Refuge was private property and public access was not allowed! Fortunately, trapper Reg Whale was on hand to point out where the correct boundary lay. Cameramen from TV3 and TVNZ were grateful for his assistance and at his suggestion have made donations to our Trust.

It has long been a concern that because the developers of the Tara Iti golf course were allowed to put what was supposed to be a boundary fence, some considerable distance inside the Refuge, that fence would in time be regarded as the boundary, effectively allowing some two hectares of public land to be taken over by a private overseas developer. The Obama incident serves to show that there is a very real danger of this happening.

We would like to see the fence erected on the boundary as directed by the Environment Court. It is up to DoC to make this happen.

Mangawhai Dredging Covers Nest Site:

In April, Mangawhai volunteers went to the Sandspit to remove some of the fences put up during the breeding season to guide walkers away from the nesting sites. They were upset to find that a part of the northern shell patch behind the fence had been covered in sand, including a nesting site used recently by a fairy tern pair.

This was caused by the dredge from the Mangawhai Harbour Restoration Society (MHRS) pumping sand from nearby in the channel. Each winter, they have permission to dredge out various parts of the channel to keep boaties safe and keep up the water flow.

A week later a DoC Ranger came and inspected the site and found that MHRS had gone 50m inside the permissible area agreed upon. The sand pumping immediately ceased and it is hoped that the shell patch will be renewed when the rain washes off most of the sand and leaves the shells which fairy terns prefer as nest sites.

This is an unfortunate mistake, and the Trust has asked to be present with DoC and MHRS whenever decisions are made about when and where dredging will take place in the future. I am sure we can work together to keep the critically endangered fairy tern nest sites safe.

Jane Vaughan,
Mangawhai Volunteer coordinator

Mangawhai Museum Special Fairy Tern Exhibition:

Plans for this exhibition which also marks our Trust's tenth birthday, are coming together nicely.

We've recently been in touch with Shaun Lee, a talented designer and graphic artist who has been making 3D fairy tern models. His solar powered 3D printer enables him to make multiple models at a reasonable cost. We hope to include some of his models in the museum exhibition.



Shaun with one of his models

Photo: Gulf News

Calendar: We are putting together a 2019 fairy tern calendar, which will be launched at the exhibition, in time for Christmas and overseas posting.

Trustee, Bryan Clark is co-ordinating the project, so please contact him if you have any materials or information that might be of interest.

Contact Bryan at: bryansandraclark@gmail.com or phone 021 672 806.

Fish study:

Every month since October last year, Ian Southey and his team of helpers have been collecting and measuring fish for Ian's fish study, undertaken on behalf of the NZ Fairy Tern Trust. Already changes in the composition and sizes of the fish collected have been noted. Collecting sessions are continuing every month and all helpers are warmly welcomed.

Meet at the bottom of North Avenue, Mangawhai Heads.

Contact Ian at: iansouthey@yahoo.co.nz or check our Facebook page to confirm dates and times.

Fairy Tern Rangers' Reports 2017-18

The following are extracts only. Full reports can be emailed on request.

Waipu: Ranger Ayla Wiles

Summary: This season at Waipu there were two fairy tern breeding pairs and one single male (Nil-M). He is unusual in that he has been present at Waipu for four breeding seasons but has never had a mate, so we are unsure if he is fertile or not.

The breeding pairs had a total of three nests. Five chicks hatched, but two of these were lost to a storm surge and another two were lost to a suspected pollution/predation event. The last chick was banded WM-W and fledged successfully in January 2018. This chick hatched from an egg transferred from a Papakanui nest under threat from shifting sand dunes. The second egg from this nest did not hatch and was sent away for autopsy.

Nest 1: W387 Found: 30/10/17 Parents: Red pair – M-pGR (Female) and R-RM (male)

The nest was on the beach front and during normal tides was not at risk, but with king tides approaching there was concern about its safety, so the nest was moved 10m up the beach and a sandbag wall and trench built in front of it. This meant it survived the king tides. After the eggs were confirmed as infertile, they were switched with fertile eggs from a Mangawhai nest, in order to improve productivity. The eggs hatched on 17 and 18/11/17. However on the night of 18/11/17 an easterly system unexpectedly stalled during the high tide period. This resulted in sweeping storm surges which unfortunately washed over the chicks. Despite an extensive search no bodies were found.

Nest 2: W388 Found: 7/11/17 Parents: Blue pair - BM-K (Female) and BM-B (Male)

This nest was on a man-made shell patch, inland near the estuary so was safe from the tides. This was the first recorded nest for this pair at Waipu and the first time the female had bred. On 3/12/17 both eggs hatched. Worryingly, on 4/12/17 a blue tinge was noticed on the feathers of both parent birds and the blue colour was also observed on three of the fish brought in to feed themselves and the chicks.

On 5/12/17 volunteers arrived to find that both chicks had been eaten and only the male was on site. Analysis suggested they were eaten by a Norway rat. However it is not known whether the chicks were sick or dead at the time, as a result of poisoning from the blue substance. The male stayed around and revisited the site for up to five days after the event, but the female was not seen again despite extensive searches. The single male also disappeared around the same time. It is unclear if this was a coincidence or if he too was affected by the blue dye.

The source of the blue substance is unknown, but may have come from chemical/sewage run-off from the increasing number of dwellings close to the estuary.

Nest 3: W389 Found: 30/11/17 Parents: Red pair – M-pGR (Female) and R-RM (Male)

The nest was laid in the North crater, the site chosen after the Ranger closely monitored the birds, moved them off from undesirable locations, removed shell from the beach and added shell to the crater, which was safe from all tides. On 6/12/17 two fertile eggs from Papakanui were transferred from the zoo out to W389. On 15/12/17 one of these eggs hatched. The other egg failed to hatch. On 3/01/18 the chick was banded WM-W and it fledged in mid-January.



Figure 2 Trail cam photo showing egg shell being removed after the chick hatched.

Credit: Zoological Society of London and the Te Arai and Mangawhai Shorebird Trust.

This year a PhD candidate, Thalassa McMurdo shadowed the Waipu ranger between 13 and 22 December and trialled two trail cameras on this nest. The birds were surprisingly tolerant of the cameras and largely ignored them. Ayla recommends leaving the cameras there for longer periods to provide a feeding record and also to capture images of any predators or humans entering the nest area.

Compliance: On eight occasions the ranger spoke to dog owners who had walked their dogs past the no dog sign and into the wildlife refuge. On one occasion the ranger caught a dog running free in the refuge with no owners in sight. The dog was taken back to the carpark where Armouguard picked it up and the owner was fined \$550. Two vehicles were also caught in the refuge and had to be persuaded to leave.

Predator control: A total of 43 pests were caught this season, almost half of which were Norway rats. Others caught were mice, rabbits, weasels, stoats and hedgehogs.

Recommendations: 1) Poisoning to knock back rabbit and rat populations; 2) Nest site enhancement; 3) Protection of the north side of the refuge for possible future nesting; 4) Developing relationships with owners of property beside the refuge to encourage protection and predator control.

Mangawhai: Ranger Keven Drew

Summary: There were five breeding pairs at Mangawhai and a total of five nests. Two pairs were also pseudo nesting. Both pairs exhibited all the correct courtship activities but did not lay eggs. A total of nine eggs were laid of which eight were deemed fertile. The total number of eggs present at some stage at Mangawhai was 11. Two eggs were transferred to Waipu and later in the season, two eggs were received from Pakiri. There was one predation event – the egg and chick from Pakiri. Red-billed gulls are strongly suspected of being responsible. Five chicks hatched and four fledged.

Te Arai: Sioux Plowman and Reg Whale were keeping an eye out for the Ranger at Te Arai Stream, but fairy tern did not nest there this year as last year's pair split up and the female paired with the Pakiri male.

Mangawhai Nesting Data

South Sea Valley

Nest M380 Parents: M-R (Male) KpG-M (Female)

Eggs found 26 and 27/10/17. Canded 7/11/17 and both eggs deemed fertile. 12/11/17 eggs transferred to Waipu now W387. The parents continued to sit on wax and then plastic dummy eggs until 19/11/17 when they received two eggs from Pakiri. These were candled and deemed fertile. One hatched on 2/12/17; the other did not hatch. The next day, the ranger arrived to find that both chick and egg had been predated, it is suspected by red-billed gulls as they had been around the site and had to be chased off. For two days the parent birds continued to come to the site with fish, calling and searching.



Newly Hatched

Photo: Keven Drew

Nest M383 Parents: BK-M (Male) and RM-K (Female)

First egg found 5/11/17, second found 7/11/17. Canded 20/11/17 – one egg deemed fertile, the second thought to have a dead embryo. The chick hatched on 1/12/17 and was banded on 19/12/17 – **R-YM**. The unhatched egg was removed on 5/12/17.

On 01/01/18 the juvenile followed adult calls and went to sea for 11

minutes. On 3/01/18 the chick followed the female out to sea where it practised diving at least 13 times mainly at the ocean edge and on one occasion caught what looked like a small stick. On 8/01/18, the semi- fledged chick left for the sea unattended by a parent and on 10/01/18 did a solo flight to sea. This was the last time it was seen by the Ranger.

Nest M384 Parents: R-pGM (Male) and R-KM (Female)

First egg found 17/11/17 and second egg confirmed 19/11/17. Canded 28/11/17, both eggs deemed fertile. Only one egg hatched on 16/12/17. The unhatched egg was removed on 20/12/17. The chick was banded on 7/01/18 – **pGM-W**.

The young female was easily unsettled during the incubation period and the male bird did most of the incubation, but she stepped up to the mark once an egg hatched. The chick was last seen leaving the site on 23/01/18 following the male bird in a northerly direction.

Dredge Site

Nest M381 Parents pGM-R (male) and KB-M (Female)

Only one egg laid. Found 28/10/17. Canded 7/11/17, deemed fertile. Hatched 21/11/17 and banded 10/12/17 – **Y-KM**.

On 24/12/17 the chick took a brief solo flight out to the estuary. On 26/12/17 the chick left the dredge site with the male, in a south west direction towards Tern Point. The Ranger saw the juvenile occasionally at the dredge site, also at the Pearson St Reserve and out on the mud flats 30/12/17 and 9/01/18.



Dad with 2-day old chick

Photo: Keven Drew

North Bund

Nest M382 Parents M-KW (Male) and W-BM (Female)

First egg found 4/11/17 and second laid 6/11/17. Canded 20/11/17, both eggs deemed fertile. Only one egg hatched on 30/11/17. The unhatched egg was removed on 3/12/17. The chick was banded on 19/12/17 – **KM-W**.

The chick flew around the North Bund site on 2/01/18, practising manoeuvres and looking down from the hover position, then it flew out over the estuary for about 30m before returning. The chick was seen on 8/01/18 just sitting around its preferred shelter with no parent birds, but was not seen after that. The male parent was seen at Te Arai Stream on 27/01/18 resting with four other fairy terns. It is assumed the juvenile fledged and left Mangawhai with the female.

Chick R-YM and female K-RM



Photo: Keven Drew

Advocacy: 27/11/17 joined NZ Fairy Tern Trust members to talk to three classes at Mangawhai School. The students produced posters, six of which were put up on the Sandspit Refuge. Others were displayed in local shop windows. On 10/01/18 again joined Trust members to talk to approx. 120 visiting Surf Club members. Spoke to members of the public on many occasions; many were interested in how the fairy terns were managing.

Compliance: There were not many compliance issues during the summer, possibly because local community radio advertisements helped. There were two dog issues, helicopters, drones and horses.

Predator Control: During the summer the ranger caught three rabbits and one mouse. Noted that Reg Whale is a very good, dedicated trapper and is the front line defence.

Reg's trapping totals for the breeding season, September, 2017 – February, 2018.

(not part of the Ranger's report)

77 rats, 27 hedgehogs, 7 cats, 3 stoats, 7 weasels, 18 rabbits, 1 pig.

Pakiri: Ranger Eliane Lagnaz

Summary: The pair that nested at Pakiri was female **M-pGK**, an 11 year old female which had previously been paired with an infertile male at Te Arai. The male was **RM-Nil**, a 6 year old male which had been occupying the site for the last three seasons.

The pair produced three two-egg nests, but all three were inundated by high tides. On each occasion, the eggs were taken and replaced by dummy eggs. The first two clutches were taken to Mangawhai and Papakanui respectively. One of the eggs of the third clutch had a hole in it with the membrane still intact. It was not brought back out to the wild from the zoo as its chances of hatching were minimal. The second egg of the third clutch hatched at Pakiri and was banded **KM-YB**. The male was not seen on the site from 20 January and the female had to bring up the chick on her own. Supplementary feeding was attempted but failed because the chick did not return to where the food was placed. The chick was last seen on 7 February and it is hoped that the chick was taken to a more sheltered place by its mother.

The weather was often adverse throughout the breeding season with maximum "super" moon tides (3.6m) once a month. Stormy conditions at sea and/or high rainfall combined with high river levels to cause the entire nesting area to be flooded. Sandbag walls were not effective against the approaching water.

Nest Data;

Nest PA400 M-pGK (Female) and RM-Nil (Male) *The same pair for all three nests*

First egg confirmed 7.11.17 and 11.11.17 second egg confirmed

18.11.17 Rain all day. Evening tide and storm surge threaten nest in spite of sand wall.

Incubating bird leaves, so eggs are exchanged for dummies and held in the incubator overnight.

Candling confirms that both are fertile.

19.11.17 The eggs are transferred to Mangawhai – nest M380.

Nest PA401

First egg of second nest confirmed 1.12.17. A long sandbag wall is built.

2.12.17 second egg confirmed.

4.12.17 A second sandbag wall is built to protect the nest from inundation from the river.

6.12.17 High tide threatens nest. Eggs exchanged for dummies and then taken to the Zoo.

8.12.17 Trial to give 2 eggs from Papakanui via the Zoo that are due to hatch to the Pakiri pair two days after their nest loss. Trial stopped after female bird shows no interest.

Nest PA402

15.12.17 First egg confirmed and second egg confirmed on 17.12.17

18.12.17 – 22.12.17 New sandbag walls built and nest elevated.

3. and 4.01.18 - 3.6m tides do not reach the sandbag wall. Eggs are exchanged for dummies and held in the incubator over the high tide period.

5.01.18 The nest area is inundated from the river side. The eggs are taken to the Zoo.

6.01.18 The undamaged egg is returned from the Zoo and exchanged with the dummies in the nest. Incubation resumed.

9.01.18 Chick hatched.

19.01.18 Male looking rather worn and is not seen from then on. Female feeding chick sourcing fish from the sea.

27.01.18 Chick banded **KM-YB**. 7.02.18 Last sighting of chick on site.

Predator control:

At both Pakiri and Poutawa Stream, traps were checked and maintained all year round.

Pakiri catch totals: 11 rats, 20 hedgehogs, 1 stoat, 7 weasels, 7 rabbits, 3 mice.

Poutawa Stream: 4 rats, 21 hedgehogs, 3 cats, 2 stoats, 6 weasels, 1 rabbit, 2 possums, 3 mice.

Compliance:

Visitor numbers over the holiday period were down probably due to adverse surfing and weather conditions. The biggest disturbance this season were drones from New Year's Eve onwards. The ranger recommends signage and making the beach area a non-drone area.

Papakanui: Rangers Evan Davies and John Neilsen

This season at Papakanui saw the establishment of three breeding pairs from five individuals.

The pairs were commonly recorded as the "East-end pair" (**B-pGM (M)** and **RM-KR (F)**) and the "West-end pair" (**M-BK(M)** and **RM-BW (F)**). This changed during the season as the East-pair split and **RM-KR** paired with the other remaining male, known as "Bertram" (**B-RM (M)**). There was a total of five nests in which nine eggs were laid. Only the West-end pair had three clutches: two clutches of two eggs and one single egg clutch. The other two pairs laid one clutch each. However, the East-end pair was known to be infertile so their clutch was removed and replaced with the first West-end clutch. This nest was later abandoned.

None of the clutches were retained at the nest site during the entire length of incubation. Seven of the nine eggs were removed and taken to Auckland Zoo to avoid risks such as sanding over or tidal inundation, which were too great to overcome in the field. Three chicks hatched at the Zoo, unfortunately none survived past three days old. One clutch was taken to the Zoo then later transferred to a nest in Waipu (W389). The eggs transferred to Waipu fledged one chick (**WM-W**). Pakiri eggs (**PA401**, **RM-Nil** and **M-pGK**) replaced the last laid west-end pair's clutch. These eggs hatched but the chicks died at Day15 and 12 during a large storm.

The Rangers conducted various trials throughout the season to improve the NZ fairy tern's breeding success. These included methods to ground more stable sites for nesting, buffer nests from incoming tides and reduce the risks associated with moving sand dunes.

Summary of nest situations and outcomes from the 2017-18 breeding season at Papakanui

Nest No.	Breeding Pair	Nest Manipulation	Reason for manipulation	Methods before movements	Result
PPK391	B-pGM & RM-KR	Eggs removed (infertile) and waxed	Infertility	-	Unsuccessful
PPK392	M-BK & RM-BW	Eggs moved to PPK391 then zoo, both hatched	Abandonment and Tidal inundation	Sandbag wall and trench	Unsuccessful
PPK393	M-BK & RM-BW	Eggs to zoo, transferred to W389, one chick hatched	Sanding over	After movement a platform trial	Unsuccessful nest site, successful hatch
PPK394	M-BK & RM-BW	Eggs to zoo, new eggs from PA401, both hatched but died during storm	Large storm, high winds, and king tides	Debris placement and land raising	Unsuccessful
PPK395	B-RM & RM-KR	Eggs transferred to the zoo	Abandonment	-	Unsuccessful

Rangers were first instated at Papakanui in 1993. The 2017-18 season saw two full-time Rangers employed (John Neilsen and Evan Davies) and two part-time Rangers (Cam Rathe and Helen Smith). They undertook monitoring and protection of NZ fairy tern seven days per week from September to late January. They also undertook predator control, advocacy and education to the public in the area.

Compliance/Advocacy: Most fishermen at the spit knew about the birds and understood the rules. They and four-wheel drivers were respectful of the birds and little disturbance was seen. The main issue with this area was in the weapons range where four-wheel drivers and illegal campers were present. These activities would disturb wildlife and create problems for travelling around the area as trap line tracks became rutted out.

Predator Control: Predator control is carried out with high intensity during the breeding season (8 September 2017 – 1 February 2018). A total of 154 traps were put out this season which was an increase from 74 in the previous season.

Catch totals: 287 hedgehogs, 149 possums, 25 cats, 15 stoats, 10 rats, 8 rabbits, 6 weasels, 1 ferret, 1 pig.

Winter trapping was carried out by Helen Smith.

Her catches: 45 hedgehogs, 4 rats, 3 stoats, 3 weasels, 1 cat, 1 mouse.

Trials and experiments: NZ fairy tern nests are often at risk from sand movement and tidal inundation. Multiple trials were conducted this season to determine if or how these risks could be minimised. **Fence trials** were carried out to find an effective way to build higher ground. **Shell patches** were constructed to determine if deposited shell could be retained and create new nesting habitat in safe areas. A **raised platform** was trialled to help mitigate the effects of shifting sand and tidal inundation. While the fairy tern pair involved in the trial did not seem to mind the platform, the platform did not cope with the strong winds at Papakanui. The experiment would need to be explored further and with other pairs.



Figure 8: Raised platform used to avoid sanding over was blown out during the night to reveal the timber bottom and no birds

Flood protection: A new sandbag wall construction method was trialled involving a base layer of polythene wrap, but when this was breached it caused a rush of water, so it was deemed that the use of sand bags was more beneficial.

Some recommendations: 1) Trapping should be undertaken all year round and traps should be kept in the field. 2) Two full time Rangers should be on site from September to March, with one focussing on trapping and the other on bird work. 3) Trials and experiments should be carried out through the winter months. 4) Have bags of shell ready by nests ready for use.

Thanks to the Department of Conservation and their hard-working Rangers for these reports.