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Dear Members and supporters,

In this issue: Fairy tern news; Sandmining; Kiwi Coast; New trailer; Northern Regional Council; Waiata Manu; Links to: Research, Trip report; Ranger summaries.

Fairy Tern News

DOC hui and summary of the 2022 -2023 season

The Tara Iti (fairy tern) population is currently 31 adult birds plus one juvenile.

This was revealed at DOC's recent hui for all groups involved in the fairy tern recovery effort.

There were 10 breeding females active at tara iti sites with two females breeding for the first time. From a total of 22 eggs laid, 13 chicks were hatched. Only one chick fledged successfully in the wild. Two others did not survive the cyclone. Seven chicks were released at Manukapua Island, Kaipara Harbour. Nine eggs were lost to predation or infertility. An eighth chick hatched at Auckland Zoo died of Avian Malaria at 66 days. The two chicks fledged in the wild at Waipu died during Cyclone Gabrielle. Harriers predated four eggs from two nests. There were no chick predations this year.

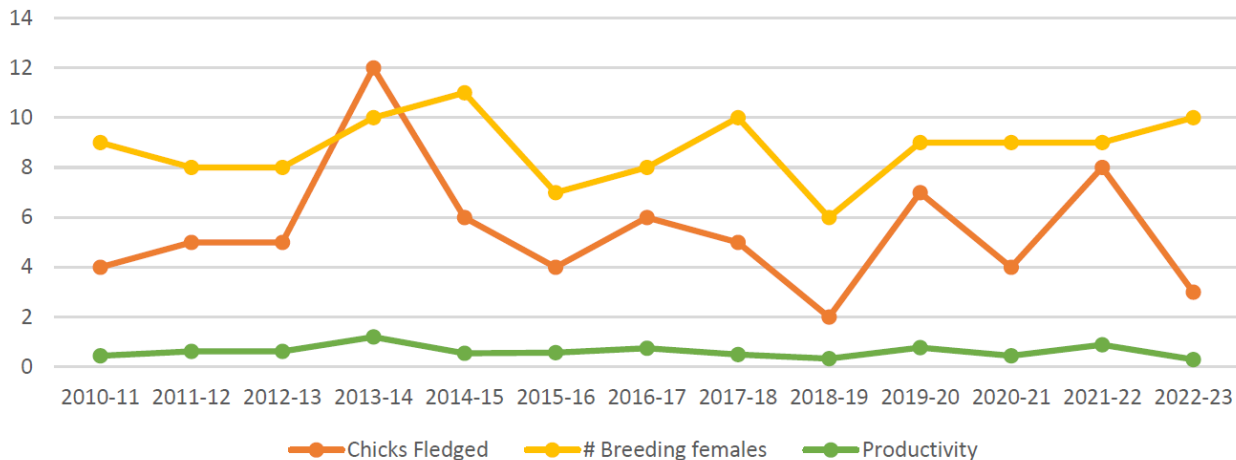


Figure 2. Tara iti breeding summary data 2010-2023. Productivity = chicks fledged/breeding females. Note that this graph does not include captive reared individuals as we are still in the trial phase of captive rearing.

The high number of storms and extreme weather events this season played a big role in only one chick surviving post-fledging, RpG-YM.



This season's juvenile, RpG-YM

Photo: DOC

The likely increase in future severe storms on the east coast during the breeding season highlights the importance of continued captive rearing and management of tara iti, eg disabling unfavourable nest sites, holding eggs during severe weather events, wild chick rescue after abandonment, predator vigilance, and protecting nest sites from storms. Despite the difficulties caused by the storms, all abandoned eggs were recovered, and some were used in the captive rearing trials. A record 7 chicks were reared and released but have not been sighted since.

Future management of the Tara Iti programme will involve scientific review of work done this season. The Hui held in Wellsford described the captive breeding, the aviary's history and development and fish supply methodology. The zoo's unique egg incubation, hatching and chick-rearing programme is the first of its kind attempted world wide. Katherine Francesca, leader of this programme, described the many challenges and successes. Significant results and conclusions are expected from data collection and comparison with previous years, which will enhance protocols for the future captive breeding initiatives.

Presentations from DOC and Auckland Zoo staff - Ayla Wiles, Tony Beauchamp, Katherine Francesca and Jake Ball were followed by lively discussion involving attendees who expressed a strong commitment to continuing the effort to protect and expand the Tara Iti population.

Summary by Melanie Scott

Summaries of Rangers' reports for each site are on p.6 ff. of the newsletter.

Sandmining

Last week, the appeals about the three applications for sandmining off the Mangawhai - Pakiri coast were before the Environment Court.

The three consents sought by McCallum Brothers (MBL) were for inshore, mid-shore and offshore sand extraction. The Trust represented pro bono by barrister, Chris Patterson, appealed against the near shore and mid shore applications on the grounds of the detrimental effects on fairy tern habitat.

Following expert conferencing, it became apparent that most experts agreed that fairy tern habitat would be at risk if the applications were granted.

Chris reports that MBL's mid-shore consent has been surrendered and its appeal abandoned.

The inshore was resolved in principle last Wednesday.

MBL's inshore appeal (based on its expired in-shore consent) is to be withdrawn following the Environment Court granting, by consent of all parties, MBL a temporary and additional right to extract sand from two offshore locations. The volume is capped at 227,000m³ in total, 76,000m³ per annum, with a monthly cap of 7,500m³ per month (the same volume as the expired inshore consent, which MBL had a s124(3) right to continue extracting). The right will expire on the earlier of: a) reaching the total cap (227,000m³), b) all appeal rights relating to the offshore ending, or c) three (3) years. The granting of the temporary and additional offshore right is completely without prejudice to the rights and positions of all parties to the offshore appeal.

The offshore appeal will be heard next month.

Huge thanks to Chris for all his efforts on our behalf and to Alex Flavell-Johnson who was our expert witness.

Kiwi Coast

The trapping tallies of the Trust's trapper, Reg Whale have been entered into Kiwi Coast's Northland Pest Control Summary by Lyn Whale who forwarded their report:

"The new grand tally is a whopping 708,536 pests trapped over 10 years!!

Kiwi Coast Total Collective Pest Control Results, 2013 - 2022

Year	Possums	Rodents (rats + mice)	Ferrets	Stoats	Weasels	Feral Cats	Wild Rabbits & Hares	Feral Pigs	Pest Birds (magpies + myna's)	Hedgehogs	Other	Total Pest Animals Caught	No. of projects and groups contributing data	No. people groups/projects
2013	8,997	11,999	1	647	456	384	657	11	68	1,751	n/a	24,971	31	n/a
2014	14,295	16,386	3	864	638	479	618	100	261	2,396	n/a	36,040	48	n/a
2015	23,762	16,893	3	873	542	760	2,309	180	4,538	2,095	136	52,091	55	n/a
2016	22,861	24,000	5	963	568	678	1,855	231	3,175	2,054	239	56,629	65	n/a
2017	25,496	23,590	9	1,242	713	619	1,724	415	3,612	2,150	71	59,641	92	6,302
2018	28,475	27,272	13	1,507	1,046	814	1,441	792	4,024	2,767	605	68,756	115	6,779
2019	42,213	37,738	17	1,600	1,120	1,048	2,621	1,098	7,168	3,133	750	98,506	155	6,360
2020	38,224	34,024	15	1,614	843	1,068	5,754	1,141	9,175	3,449	517	95,824	142	6,238
2021	44,263	38,836	32	1,512	801	1,524	3,763	1,488	1,908	4,180	819	99,126	159	7,145
2022	57,631	43,240	28	1,804	1,417	1,274	2,271	1,375	917	4,369	2,626	116,952	180	7,950
Grand Totals	306,217	273,978	126	12,626	8,144	8,648	23,013	6,831	34,846	28,344	5,763	708,536		

A total of **180 projects, groups, organisations and landowners** shared their data, setting a new record **with 116,952 pests collectively trapped on the Kiwi Coast in 2022 alone!** That's the first time we've topped 100,000 pests.

The 10 year total for the pests now includes **306,217 possums, 273,978 rodents, 12,626 stoats and 8,648 feral cats!** Just imagine the state of Northland forests if all those pests were still out there feeding and breeding...

Of course this is trap catch data – so tens of thousands more pests are being controlled with toxin, and those numbers aren't included here because they don't get counted – so the true number of pests being controlled is far higher.”

New Trailer

Launching and retrieving the Trust's boat will be so much easier next season thanks to a spanking new trailer and winch bought with funding from the Mangawhai Community Opportunity Shop Trust (MCOST). They raise funds for community projects through the Mangawhai Opportunity Factory.

Our thanks to them for their generous funding and to boat skippers, Debbie Stone and Guy Folster who researched various trailers to find the best one and then applied for the funding.

Debbie and Guy with the new trailer



Northern Regional Council (NRC)

The last of the appeals to the Proposed Regional Plan for Northland was finally signed off last week. The Council will now begin the steps to approve the plan and adopt it for reference to the Minister of Conservation for her approval.

The appeals have taken four years to resolve, partly due to disruption from COVID-19 and policies introduced by Central Government that the parties have had to respond to.

The Trust has been involved in mediation and Court action on various topics including:

- Mangrove removal rules;
- Significant Ecological Areas and Significant Bird Areas, including the introduction of Critical Bird Habitats with particular reference to critically endangered species such as the fairy tern;
- General coastal conditions.

Thanks to the efforts of expert witness, Ian Southey and the goodwill and co-operation of NRC staff and counsel, we feel that the new plan will afford fairy tern habitat in Northland much better protection.

Waiata Manu at the Beehive

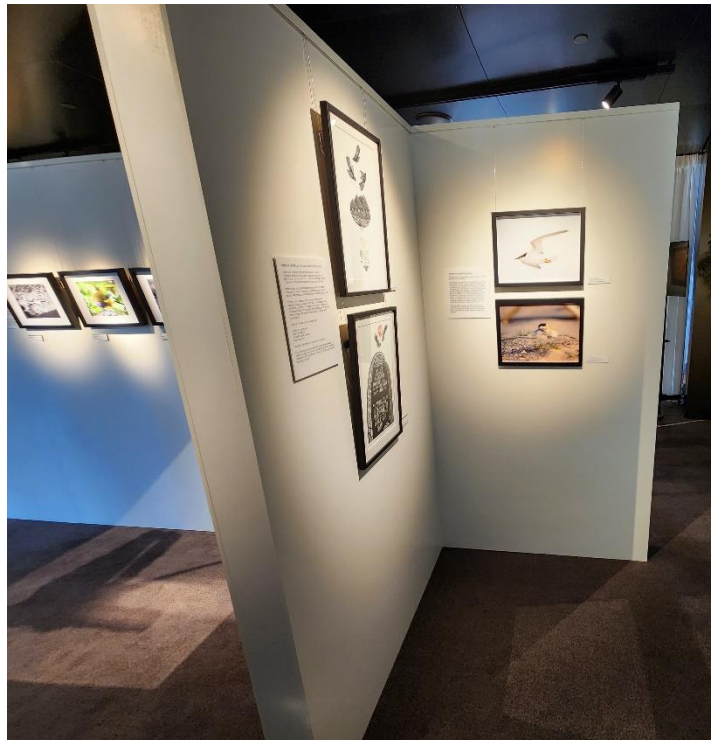
Wellington member, Estelle Cook reports on her visit to the exhibition:

My partner and I visited the Waiata Manu exhibition in March 2023. We had to obtain permission to photograph Chris Patterson's Fairy Tern photographs and were accompanied by a security guard as we viewed the diverse range of exhibits.

The fairy terns were the first to greet us on entering the space - the two photos took pride of place alone on the first wall we came to.

A bird in flight, and an adult and chick on their nest neatly captured not only the fairy tern's life stages, but also its beauty and vulnerability. These themes were repeated around the corner with the gannet, bell bird and dotterel.

Some exhibits captured sad stories, like the demise of the huia. However, others showed that there is still time for other species, if we humans take the necessary steps. There were hope-filled stories about opposition to a proposed smelter in Aramoana (symbolized by the bittern) and to logging in the Waikato (to protect the Kokako) – as well as the recent return of tui and kaka to Wellington gardens, thanks to the Zealandia sanctuary. And so we left the exhibition with renewed determination to do our bit to support and protect our wonderful birds.



Links to.....

Research paper on fairy tern genetics: Chris Patterson forwarded the link to this paper by Marleen Baling and Dianne Brunton.

<https://onlinelibrary.wiley.com/doi/10.1111/ibi.13048>

Fairy tern trip report: Lutz and Utta Schmechta from Germany visited Waipu during the fairy tern breeding season and sent the link to their trip report.

<https://www.ringdrossel.de/Reisebericht-Neuseeland-2022/20-waipu-cove---en.html>

Ranger Summaries

Waipu – Ranger Charlotte Donald



YM-YR bringing fish to chicks and pGM-(W) in nest scrape. Photo by Charlotte Donald

During the 2022/2023 tara iti breeding season one nest was established at North Crater and three nests at Trial Site 2 (TS2). pGM-(W) (female) and YM-YR (male) produced three of the four nests across North Crater and TS2. This was a new pairing. The other pair to produce a nest was WM-KW (female) and (pG)M-pG (male) at TS2. They were also a new pairing.

pGM-(W) and YM-YR laid two eggs in North Crater on 9 November, however, they were predated on 15 November by a suspected Australasian swamp harrier (Kahu). The pair re-nested on TS2 ten days after the predation with a two egg clutch. These eggs were collected after 9 and 12 days of incubation, as part of a planned captive rearing programme. The pair re-nested yet again after 11 days, laying a one clutch egg which was later joined by an egg recovered from Mangawhai nest 470. These eggs hatched and fledged but were unfortunately found dead on 17 February due to cyclone Gabrielle.

The other pair (WM-KW and (pG)M-pG) laid a single clutch egg on TS2. The chick from this nest was abandoned by its parents and as a result taken to Auckland Zoo for captive rearing.

Eight mustelids (5 stoats and 3 weasels) were caught this season. The five stoats were caught in one night dispersed along the estuarine trapline. They were identified as a female and her kits. An additional 14 DOC 200 traps were deployed in response to the increased mustelid presence on the spit.

This season saw a total of 32 compliance incidents, most of which were low flying aircraft, which were reported.

A colony of approx. 200 white fronted terns had 40 nests on the north site of the Waipu river mouth. However, the colony abandoned their nests likely due to vehicle and human disturbance on 13 January. There was an abundance of fish species in the Waipu estuary and river and this remained high throughout the season resulting in no difficulties foraging for the adults.

Summary by Guy Folster

Mangawhai – Rangers Shannan Courtney and Isabella Holst

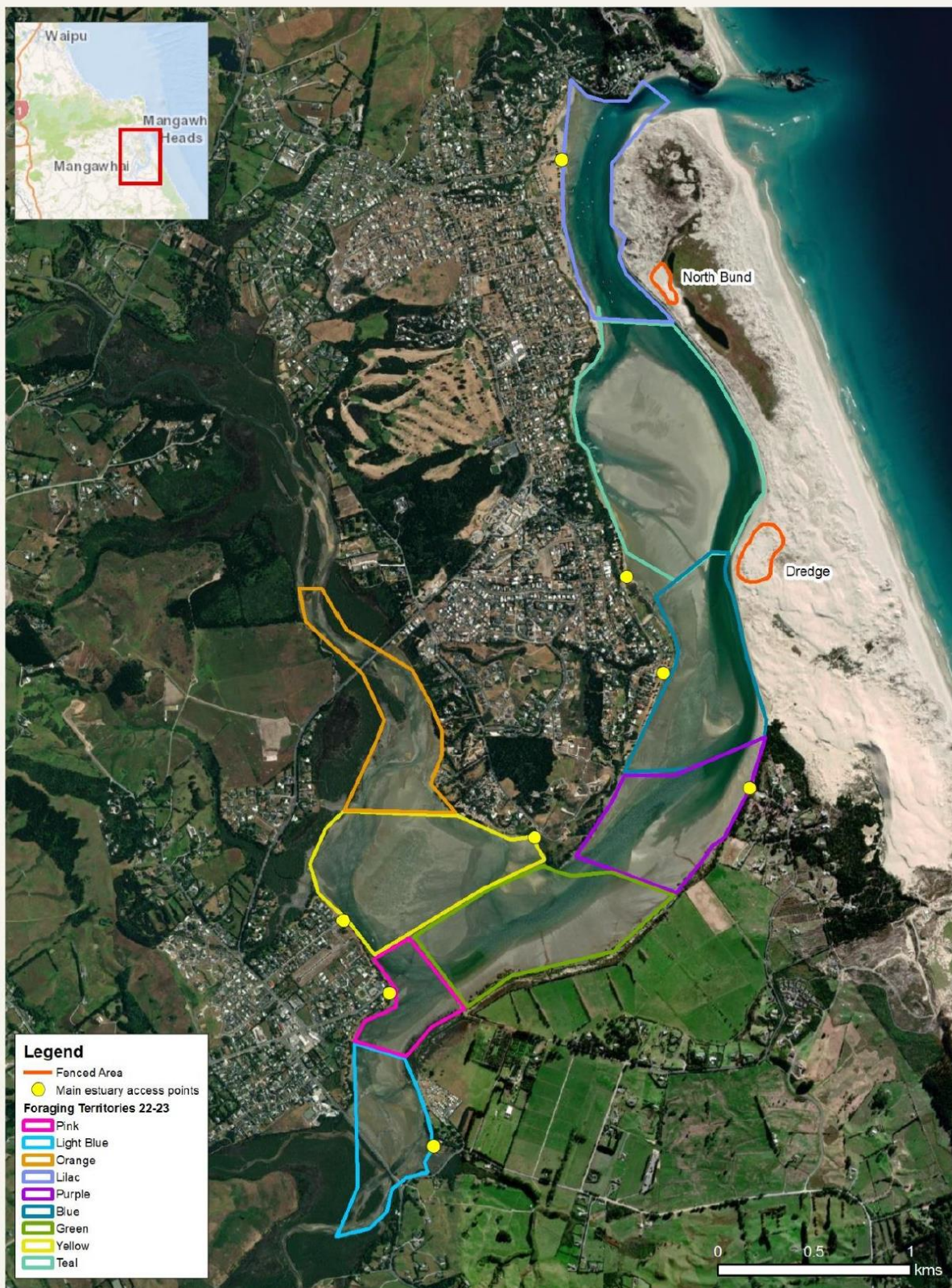
Mangawhai had six breeding pairs this season; however no eggs hatched on site, with all eggs being collected for the captive breeding program, recovered during storms from nests that were subsequently abandoned, or predated prior to hatching. The one predation this year was from a harrier hawk. All abandoned eggs were taken to Auckland Zoo, along with eggs collected proactively for captive rearing. This resulted in 5 of the 7 surviving captive chicks reared at Auckland Zoo being from Mangawhai nests.

Mangawhai is the largest breeding site for tara iti, with the bulk of the population's breeding pairs nesting there each season. All 6 breeding pairs nested within 40m of one another on shell patches at the Dredge site this season. Also unpaired male fairy terns, immature tara iti, and NZ Dotterels used the Dredge site as a roosting site. The 6 pairs laid 13 eggs in 9 nests this season. Early in the season 5 eggs were taken from 3 nests to Auckland Zoo for planned captive rearing. Due to nest abandonment during adverse weather, a further 4 eggs from 3 nests were recovered as well and taken to Auckland Zoo.

Another egg was uplifted in another storm and eventually transferred to a Waipu nest, where it hatched on 11th January. 3 eggs did not develop and 2 were predated.

Planned egg collection for captive rearing began with first eggs laid in November, collected early December - nesting pairs were released and most re-nested – and further eggs were collected when nests were at risk of abandonment in adverse weather early January. One egg was rescued from weather event and taken to a Waipu nest. Another 2 eggs were predated, probably by a harrier, on 1st January. 2 harriers were caught finally that day.

This season was impacted by frequent intense low-pressure systems, above average rainfall and strong north-easterly and easterly winds. Due to the timing, intensity and length of 2 major storms, direct intervention was required for all eggs not intended for the captive rearing programme or predated. It is



possible that weather made fishing in the estuary difficult for tara iti this season. Rangers made many attempts to protect nests with logs and sandbags. Rangers also observed and recorded foraging areas for FT pairs all over the Mangawhai Estuary, including above the 2 causeway bridges.

Shorebirds: noticeably fewer dotterels and VOC nests and chicks. 3 banded dotterel pairs attempted to nest but no fledglings seen. 2 pied-stilt chicks observed. Caspian terns and Red-billed Gulls nested on ocean side – 52 nests recorded and 19 fledglings by early January. RBG's nested at Estuary walkway – Rangers changed walking access with signage and counted >100 nests and 36 chicks fledged by early January. White-fronted terns did not attempt to nest this season.

Tara Iti Monitoring: 2 Rangers and volunteers 7 days each week.

- Searching for breeding pairs
- Identifying nest sites
- Monitoring nests
- Collecting data
- Monitoring chicks/fledglings
- Gathering feeding and disturbance data
- Trapping

Pest Control: extra traps, plus a bait trial was undertaken. 20 predators caught – 11 Australasian Harriers, 6 mice, 3 Norway rats. Traps were continually impacted by sand this season, which may have reduced number of predators caught. No cats or mustelids caught by Rangers, but NZFTCT trapper, Reg Whale caught 15 cats, and a contracted shooter got one. Poison had been laid prior to season by DOC reducing numbers of rats and rabbits, which would have reduced prey for predation such as cats and mustelids. Also, low numbers of nesting birds would mean less attraction for Harriers.

Advocacy & Compliance: only one reported to authorities of horse prints on big dune – overnight. Ranger made visits to 3 Camp Grounds to remind them of nesting birds on Sandspit and deliver pamphlets. adverse weather reduced Sandspit use, but increased use by boats and jetskis breaking 5kt speed limit.

Recommendations:

1. Rangers would like solar-charged Ring Cameras installed in hides, instead of on shell-patch, reducing need to enter site to put cameras in.
2. New signage “Please Do Not Enter”, “No Horses” – or Tara Iti specific signs.
3. Pre-breeding Season – mound enhancement to enable better positioning of logs for protection - new vegetation SE of Dredge site removed – set traplines pre-season.
4. Shorebirds - set up monthly shorebird survey with volunteers – investigate influx of blue penguin deaths on beachfront.
5. Predator Control – Adjust traps in Sept to prevent chick by-catch – Continue trapping along Refuge border in winter - Use different traps on sand dune to withstand sand movement. - Trial new traps on sandspit targeting rats.
6. Compliance & Advocacy – Encourage hiring harbourmaster to patrol estuary during holiday season – Install more signage on estuary re ski-lane speed and location.

Acknowledgements: Thanks to NZFTCT, Volunteers, Trappers, About Tern Waipu, DOC, Tony Beauchamp's expertise, ALL Rangers and extra helpers, Shorebird Trust and Auckland Zoo.

Summary by Debbie Stone

Pakiri – Ranger Arthur Bensana

Pākiri Beach is home to two resident male Tara iti that have established over the past few seasons. RM-RW (male) paired with RB-YM from September 2022. K-RM (male) paired late when RM-K joined the group in December 2022 after losing her Mangawhai nest during a storm on 8 December. Despite many pair-bonding behaviours being observed, neither pair established a nest.

It is believed that the high frequency of storms played a significant role in why no tara iti nests were recorded. Both the shell patches held up to the storm surges quite well. The small one was partially washed over by Cyclone Hale (10 January) and the larger one half submersed during Cyclone Gabrielle (14 February).

The temporary fencing that was installed around the potential nesting areas had to be re-instated 9 times after storm events.

Over the season, Pākiri Beach was visited by 15 identified tara iti.

Pākiri Beach is one of the few exceptions in NZ where there is no Queen's chain. Most of the public is unaware of the special ownership of Pākiri Beach which can make compliance and advocacy discussions difficult. There were a high number of disturbances observed during the season, but most of them were small and only a quick talk with offenders was required.

Summary by Guy Folster

Papakanui – Rangers Connor Wanden and Rose Hynson

There were two nests this past season.

1 (B) - RM and (W)M - W

Nest 458

2 fertile eggs

1 chick fledged RpG -YM

1 chick died at one day old

Found 23/10/2022

2 (B) - pGM - and YM - BpG

Nest 462

1 egg, did not develop

Found 22/11/22

12 tara Iti seen

2 breeding females

2 nests

3 eggs

1 infertile

2 chicks hatched

1 fledged



Figure 10. DOC ranger Connor Wanden monitoring nest 458 after the eggs were returned from Auckland Zoo on his first day in the field. *Photo: Shelley Ogle.*

TRAPPING

98 hedgehogs

55 possums

9 cats

A good number of mustelids also with a slight decrease in numbers.

Papakanui is an enormous area approx. 3km by 6km of mostly fairly flat sand areas with very few dunes. The wind blows strongly most of the time so there is continuously moving sand. The NZ Airforce shooting range is in the area which tara iti may nest, so is closed for the 3 months nesting season.

Compliance issues arise as it is a very lonely place with many people travelling by vehicle long distances to fish although the rangers said there were no difficult issues this season.

There were 2 DOC Rangers who used a vehicle instead of a hide for observations as a hide would soon be covered in sand and unstable. Also, a hide may attract people into the area where tara iti nest. Shell was gradually added for several days to help stabilise the area, so the eggs were not covered by wind blown sand. Also logs and sandbags were strategically placed and some driftwood for chicks to hide under.

NEST 458

28/10/22

A big storm was expected so 2 dummy eggs were put in the nest and the eggs taken to the zoo.

5/11/22 eggs returned to nest, both tested and developing.

2/12/22 Chick banded

The chick was observed feeding in the area with both parents until on 11/1/23 it was seen feeding alone. 18/1/23 seen at Waipu at 65 days old.

9/3/23 it was seen at Manukapua Island on the Manukau Harbour

This was the only chick to survive to fledging in the wild for the whole season from all the tara iti sites this past season.

NEST 462

22/11/22 A dummy egg was put in nest and egg taken to zoo via one night in an incubator near site.

Candling proved it was unviable. The nest site and dummy egg was washed away by a storm and very high tide. The parent tara iti soon departed the site



Figure 11. Hilltop shell patch uncovering after 2 seasons under the dune. *Photo: Shelley Ogle.*

Since 2017 shell has been spread by DOC with help from the Airforce and Army at this site. 30 tonnes of shell was trucked and helicoptered to the area and spread. It was not used by the birds. However, a shell patch created in 2018 was covered by dunes in 2019 and in the past season has been uncovered again by the wind. Even though no tara iti have attempted to nest on it, attempts to nest were made by White fronted terns, oyster catchers dotterels and banded dotterels. White fronted tern nests were wiped out by the weather and very few oyster catcher and dotterel nests were seen.

Summary by Jane Vaughan

Thanks to DOC staff for providing the Rangers' reports. If you would like any of the full reports emailed to you, please reply to Info@fairytern.org.nz

Best wishes,

Heather Rogan and your Trust committee