



# MAKETU ONGATORO WETLAND SOCIETY

## ANNUAL REPORT 2023







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# Chair Report

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**The Chair at work!**

It is 15 years since what became MOWS started, and 14 years since we decided to become an incorporated Society. A year later we agreed with the Regional Council to start our first Biodiversity Management Plan (now renamed Environment Programme), which came into force in July 2011. The BMP was a very new concept and MOWS had the first one that was intended to be a blueprint for comprehensive ecological restoration. That first BMP covered Maketu Spit, and we are now more than halfway through our third version of that plan. Looking at Maketu Spit, the BMP was funded by BOPRC, WBOPDC and DOC, and it has been remarkably successful, not just in supporting the population of NZ Dotterel -tūturiwhatu- or even in helping to establish and grow the colony of red-billed gulls – tarāpunga- which is now around 3000 pairs, but in helping to create a more robust and resilient ecosystem by getting rid of or controlling most of the serious pest plant species. This allows the natural vegetation to prosper and in turns supports native invertebrates and vertebrates, particularly the native shore skink.

That success has been, and is being, repeated at our other three Environment Programme sites, Dotterel Point, Pukehina; Newdicks Beach, Maketu and Waihi Wetland Wildlife Management Reserve. In addition, we have made good progress on the Pukehina Esplanade Reserve and also manage a fifth plan with Maketu Taiapure which is restoring the Te Huauri o te Kawa Wetland (previously Borrow Pits) on the Kaituna. We are expecting to establish a sixth EP on the Pukehina Wetland in Waihi Estuary that we are in the process of acquiring.

MOWS has always looked at changing the paradigm, we saw early on, that the model of an all-volunteer operation would not work with such significant projects in such a small community as Maketu, this resulted in us going down the Social Enterprise route and we now have four full-time employees without whom it would be impossible to do the mahi. Because we chose this route we can set an example, which we hope others will follow, of acquiring an 8 ha wetland on the edge of Waihi Estuary. This is not without its challenges, largely because it is a fairly new concept, but I strongly believe that we need to build what I would call a 'Private Conservation Estate'.

We know that DOC has responsibility for managing a huge public conservation estate, some 30% of the entire country, and that they do not have anywhere near enough funding to look after it. However, if MOWS, and other like-minded groups can build a private conservation estate, then we can add to the work that DOC performs for our environment along with the work that MOWS and other community groups already do in looking after some of DOC's smaller reserves.

I should also mention the huge success of our Education Programme. Initially we did random presentations to a variety of schools in the neighbourhood, but they were unstructured and while nice, did not really give the students what they really needed - a good all-round understanding and appreciation of our natural environment to ensure long term sustainability of all our environmental initiatives. Our current programme was set up by our past secretary, Tania Bramley, and has since been expanded by our current Secretary and Education Manager, Janie Stevenson. Thanks to the strong support of WBOPDC and our philanthropic funders, we now provide a robust and structured programme to twelve schools and cover a further 7 schools through the extension programme run with Bay Conservation Alliance (BCA). The programme includes Primary, Intermediate and High Schools.

Talking of BCA, this is another significant achievement as MOWS was a founder member. BCA has become an extremely successful support operation which also runs a ground-breaking training programme, BCA Conservation Cadets – Tauria Mahi – funded by MfE via the Jobs4Nature Programme. BCA now has 29 members from a wide range of community and iwi-based organisations throughout the Bay of Plenty.

I have been Chair of MOWS since its establishment, and I have decided that it is high time I stepped down. It has been a very rewarding experience guiding MOWS through its start-up years including dealing with the Rena disaster – if you have not yet seen the film ‘Taking back our Beach’ then you really should as it is a reminder of how susceptible our environment, particularly our coastal environment is, and with Port of Tauranga expanding with ever larger ships the danger of another similar disaster will always be with us.

One of my favoured epithets is, if we are not still doing this work in 100 years’ time, then we may as well pack up now. We all know that the target of Predator Free 2050 is unattainable, and that programme does not even tackle some of the worst pests: deer, pigs or feral cats, and does nothing at all about the hundreds, maybe thousands of pest plant species which can be at least as damaging to our native species and ecosystems.

So, while I am stepping down, I will not be disappearing and will be keen to follow the progress of MOWS over the years. We have made some amazing advances in the last 15 years, but the challenge is huge. We must continue to build on what we have achieved, and never be complacent, or think that the task is done – it most assuredly is not. The price of success is eternal vigilance.

This has been a team effort, many people have helped and supported us over the years, our key supporters have been BOPRC, WBOPDC and DOC with their Environment Programmes and additional contract work. Our two local philanthropic funders, TECT and BayTrust have shown amazing faith in MOWS as well as Trevelyan’s and Te Arawa Lakes Trust, and of course the many individuals who have been involved. Particular thanks are due to Tania Bramley who was a key partner in establishing the Society in the first place and in developing our Education Programme. More recently Tania’s successor as Secretary and Education Programme Manager, Janie Stevenson, and Jenn Sheppard, our Operations Manager, and who will be handing over to Awhina Awhimate this month. Jenn took over my operational role and has taken us to a whole new level of technological proficiency. I should also offer a special thanks to Pim de Monchy from BOPRC, he has been with us all the way, from suggesting the first BMP back in 2010, to supporting our acquisition of the Pukehina Wetland.

What the future holds for MOWS I cannot be sure, but as long as we keep our eyes on the prize of restoring the mauri and integrity to our natural ecosystem, then I am sure that we will prevail.

Julian Fitter,  
Maketu November 2023



# About Us

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## **Our Mission**

### ***To protect, preserve and enhance the natural environment***

Maketu Ongatoro Wetland Society (MOWS) was established in 2008 when members of the local community came together to protect the colony of New Zealand dotterel or tūturiwhatu that breed on the distal end of Maketu Spit.

Since then, MOWS has expanded and now the Society focuses on biosecurity and restoration at several ecologically significant areas in the western Bay of Plenty from the lower Kaituna River to Waihi Estuary, including Maketu Spit, Newdicks Beach, Dotterel Point Pukehina, Te Huauri o Te Kawa wetland, the Waihi Estuary Wildlife Management Reserve, and the adjacent Pukehina Esplanade Reserve.

MOWS is comprised of four branches:

1. A biosecurity and restoration team of full-time employees and occasional contractors that carry out the Environmental Programme work and biodiversity monitoring at our key areas, as well as several contracts in the area and beyond. Volunteers assist with conservation efforts when needed.
2. A successful education program that is run by an education team of employees, contractors, and volunteers to deliver a range of ecology and conservation related topics to local schools.
3. A contract department that handles contract work on non-core projects which helps to provide additional funding for maintenance and other expenses.
4. A support team of committee members and volunteers who continue to guide the efforts of MOWS and assist with events and working bees.



**Gulls on Maketu Spit**

## **Our Aims**

***To support and encourage the conservation and restoration of the Lower Kaituna River, Maketu and Waihi Estuaries and their associated wetlands***

## **Our Objectives**

In alignment with our mission of protecting, preserving, and enhancing the natural environment, the primary objectives of the Maketu Ongatoro Wetland Society are as follows:

1. Protect, monitor, and ensure the breeding success of NZ dotterel and other native shorebirds on Maketu Spit.
2. Protect, monitor, and ensure the breeding success of tūturiwhatu and variable oystercatcher on Dotterel Point, Pukehina.
3. Protect and monitor populations of migrant arctic and NZ shorebirds that use both estuaries, notably kuaka, huahou, kuriri, pohowera and kōtuku ngutupapa.
4. Enhance and improve visitor experience and the sustainability of Newdicks Beach and Okurei Point, Maketu through dune protection, pest plant and animal control and planting natives.
5. Restore the natural biodiversity of the Waihi Estuary Wildlife Management Reserve with particular focus on critically endangered Australasian bittern and other at-risk wetland birds.
6. Develop, organise, and execute a comprehensive mammalian pest and alien plant control program for our areas of interest.
7. Develop a comprehensive survey of the ecology of our programme areas together with ongoing monitoring.
8. Expand our education programme to include all local schools.
9. Work with other local community groups to support Bay Conservation Alliance with the intent of supporting, expanding and ensuring the sustainability of our conservation and restoration work.
10. Develop our science and monitoring programme to make best use of the data that we collect as a tool for developing improved management plans in the future.

## **Our Services**

We offer a range of services in environmental conservation, delivered by friendly, reliable, qualified, and experienced staff. Our services include:

1. Animal pest control
2. Pest plant control
3. Planting and plant maintenance
4. Ecological monitoring
5. Freshwater monitoring
6. Infrastructure, fencing and site maintenance
7. Community and school education



# Our Volunteers

A year without any Covid disruptions meant we were able to offer working bees on a near monthly basis. As a result, our volunteer numbers have greatly increased, and our environment is benefiting. We would like to thank all the amazing people who have dedicated some time over the past year. The success of MOWS and of our environmental outputs stems from your hard mahi.

This year, we held several working bees including:

- 2 planting bees and 2 rubbish clean ups at Maketu Spit
- 1 planting bees at Pukehina Esplanade Reserve
- 2 seed shucking working bees which focused on extracting seeds of dune plants for future restoration projects

In addition, Bay Conservation Cadets undertook aquatic weed control at Te Huauri o te Kawa, the Graeme Dingle Foundation spent an afternoon collecting rubbish at Maketu Spit, and the Te Puke High School helped erect the dotterel breeding fence at Maketu Spit.



**Cleanup on Papahikahawai Island**

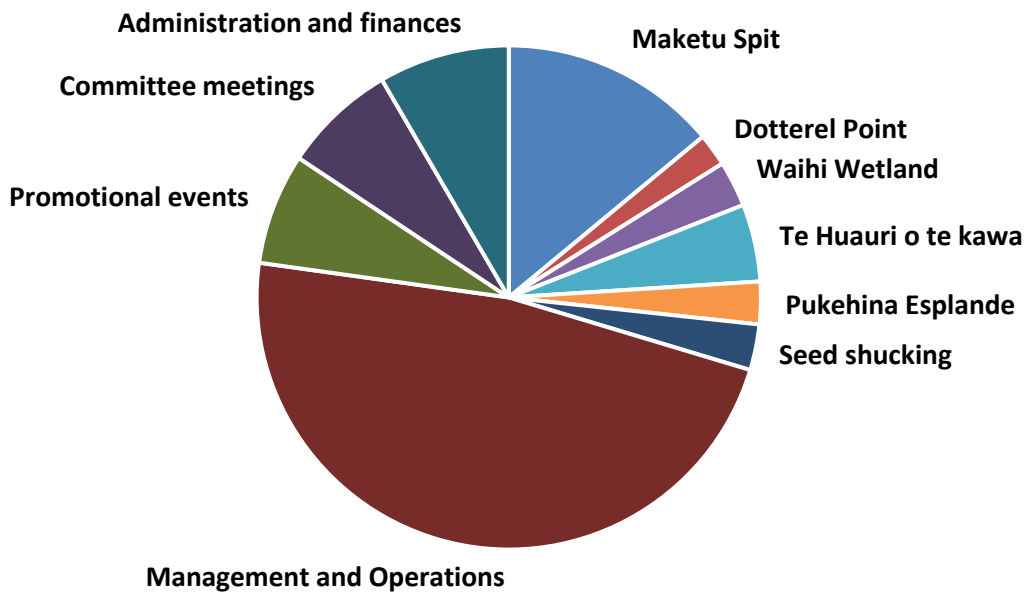


**All set up an awaiting volunteers at Te Huauri o te Kawa Planting Bee as part of the Environmental Enhancement Fund provided by Bay of Plenty Regional Council**

Through promotional events, team members engaged with over 5500 members of the public, sharing information about MOWS, our work, the pests we target and native birds that we protect. Our team was present at the Te Puke Matariki Celebrations, Te Puke Multicultural Show, Tauranga Expo, Te Puke A&P show, and several smaller events hosted by various councils.

Approximately 160 people volunteered during working bees, or as part of the Committee this year. An additional 229 students partook in restoration activities at our sites through the education programme.

Our working bees, combined with occasional volunteer assistance on workdays, volunteer committee meetings, administration, promotional events and other backend volunteer work undertaken by Julian, Gary, the MOWS team and others has resulted in over 2000 hours of volunteer work this past year. Through the education programme students contributed an additional 460 volunteer hours, mainly focused on planting and rubbish clean ups. This equates to over 50 weeks of full-time work!



A breakdown of the 2000 volunteer hours over the past year by MOWS staff and volunteers.

Finally, a huge shout out to Coast Care for assisting with our planting working bees and providing plants and equipment!





# Our Sponsors

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Much of our work would not be possible without sponsorship and donations from our funders. Outside of our Environmental Programme and contract work, this year we received funding from the following organisations:

- **TECT** provided funds to support our vehicle operations, operations management and the education programme - \$45,000.
- **Bay Trust** provided financial support towards our education programme, website and software costs, accountancy, project management, maintenance and repair of equipment, and lease of our shed - \$41,800.
- **Western Bay of Plenty District Council** through their **Environment Fund** provided funds to continue ongoing weed control and tree removal, at Pukehina Esplanade Reserve, undertake additional planting at Dotterel Point, additional support for track upgrades at Te Huauri o te Kawa wetland, and to purchase remote sensing live capture traps to help protect bittern at Waihi WMR and Kaituna WMR - \$24,000. Council also provided funds to cut the new trail and replace two bridges in the Te Huauri o te Kawa wetland -\$25,000.
- **Bay of Plenty Regional Council** Environmental Enhancement Fund provided funds to create a new wetland track, gates and a new fence, plus planting and weed control at Te Huauri o te Kawa - \$18,000.
- **Bay of Plenty Regional Council** Care Group Plan grant to use funds as necessary to offset some of our overhead costs - \$10,000.
- **Environmental Protection Agency** support our proposal to conduct a year's worth of eDNA sampling at Te Huauri o te Kawa, granting us 6-replicate eDNA kits (24 eDNA kits) valued at nearly \$7,000.
- **Trevelyan's** donated funds towards general ecological restoration works - \$5,000.
- **Bay Conservation Alliance** Seed Fund to purchase additional equipment including another pair of binoculars - \$3,700.



# Our Work

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The Maketu Ongatoro Wetland Society (MOWS) dedicates its efforts to executing four Environmental Programmes (EPs), formerly known as Biodiversity Monitoring Plans (BMPs), in the Western Bay of Plenty district that covers Maketu Spit, Newdicks Beach, Dotterel Point, and Waihi Wildlife Management Reserve. These initiatives are supported by the Bay of Plenty Regional Council, Western Bay of Plenty District Council, and the Department of Conservation. Additionally, MOWS oversees a fifth EP in collaboration with the Maketu Taiapure. Within the framework of these EPs, MOWS is entrusted with the responsibility of executing animal and pest plant control, as well as engaging in ecological restoration and monitoring activities.

## **Maketu Spit**

Maketu Spit, a 45-hectare coastal duneland, serves as a critical ecosystem for endangered shorebirds and native skinks, including the New Zealand Dotterel and shore skink. Their survival hinges on the sandy shores and native vegetation found on the spit.

MOWS conducts vital biodiversity monitoring to support conservation initiatives here. Native plant species like spinifex and pingao, play a pivotal role in dune stabilization and erosion prevention. The collaborative efforts of our team and Coast Care involve the community in planting, cleaning up litter, and weeding projects at various locations across the spit.

Pest plant control remains an ongoing challenge, with burr medic, gravel groundsel, forget-me-not, wild parsnips, and exotic grasses making an appearance on the spit. The team diligently hand pulls or sprays weeds in order to control or contain their spread.

Animal pest control is conducted on a monthly basis, increasing to weekly checks during breeding seasons. A detailed report on our animal pest control efforts can be found in the following pages. Maketu Ongatoro Wetlands Society (MOWS) leads these conservation endeavours, with invaluable support from our dedicated partners, funders, and volunteers.



**Maketu Spit**

## **Dotterel Point**

Dotterel Point, also known as Ōpūnake, is a coastal dune extending from Pukehina Parade's surf club to the mouth of the Waihi Estuary entrance. Our Environmental Programme (EP) has two main goals: restoring ecological balance and preserving coastal functions.

African ice plant, montbretia, and sea couch continue to cause problems for the team as a lot of trial and error goes into figuring out how to control these weeds without impacting on the native vegetation. Significant progress has been made in terms of controlling the spread of lupins, but montbretia and sea couch are ongoing concerns.

Collaborative efforts between MOWS, Coast Care, the community, and the local school students to weed, plant and collect rubbish were undertaken throughout the year. Here at MOWS, we believe that education, and community involvement is key to overcoming many of the environmental challenges we see today.

Fortnightly trap checks, rabbit baiting, and tracking tunnels help us to effectively control the pest animal population at Dotterel Point. See our detailed report in the Animal Pest Control section.

Bird surveys and reptile assessments provide valuable insights into the biodiversity that inhabits the area. This year, we recorded a record-high of 17 shore skinks at our two main survey sites. A Shore plover was also reported at Dotterel Point although briefly, this is the first record of this species in the Bay in 150 years!.

Temporary fences are erected as needed during the breeding season to complement the semi-permanent fences which protects the nesting birds from human disturbance. We appreciate your patience as we navigate through the breeding season. Storms and erosion are a recurring challenge.

Dotterel Point continues to thrive under MOWS management, with more skinks and the rare shore plover spotted, demonstrating the success of our conservation efforts.



**Dotterel and bird nesting sign and view of Dotterel Point sand spit**



## **Newdicks Beach**

Newdicks Beach, east of Okurei Point, Maketu, encompasses coastal cliffs, dunes, and rocky shores, a site under the vigilant care of MOWS for eight years. The preservation mission here revolves around safeguarding indigenous vegetation, community involvement, and preserving native biodiversity.

In the ongoing battle against pest plants, the team focuses on addressing threats like moth plant, boneseed, gorse, lupin, and more. While some progress has been made, continued vigilance is crucial, especially as the moth plant spreads so rapidly.

Restoration efforts in conjunction with Coast Care, though occasionally delayed due to road accessibility issues, did not stop our team of volunteers from planting 270 plants along the coast at Newdicks beach. While the total of 270 plants falls short of the 400 plants allocated in the EP, it is anticipated that this shortfall may be compensated for in the coming years.

Animal pest control, carried out through regular trap checks, faced occasional disruptions due to road closures and washouts. See a detailed report of pest control efforts on Newdicks beach in the Animal Pest Control section.

Monitoring activities, including bird and reptile surveys, provide insights into the beach's dynamic ecosystem. An impressive 11 shore skinks were captured and released this year, showcasing the effectiveness of our conservation measures.

Despite the occasional literal roadblocks and increasing challenge of rubbish buildup, Newdicks Beach remains a pivotal conservation site under MOWS' watch. The ongoing commitment to protecting native vegetation, community engagement, and the preservation of native biodiversity is a testament to the team's dedication.



**Newdicks Beach dunes**

## **Waihi Estuary Wildlife Management Reserve**

On the south side of Waihi Estuary, this 45-hectare DOC wetland holds a unique status as a “Priority 1 Biodiversity Site”, one of the highest conservation status’ in the region, and is recognized as a “Significant Ecological Feature” for the Western Bay. This status is largely due to the restoration work that MOWS has undertaken there since 2015.

Pest plant control remains a key focus of our efforts at this wetland. Invasive species like yellow flag iris, *Glyceria maxima*, cow cress and water pepper pose significant threats to the ecosystem. Controlling them poses significant challenges, tidal issues, and seasonal constraints, like high water levels, impacting our work. Containment measures are underway to address these issues and protect the indigenous flora that call this reserve home.

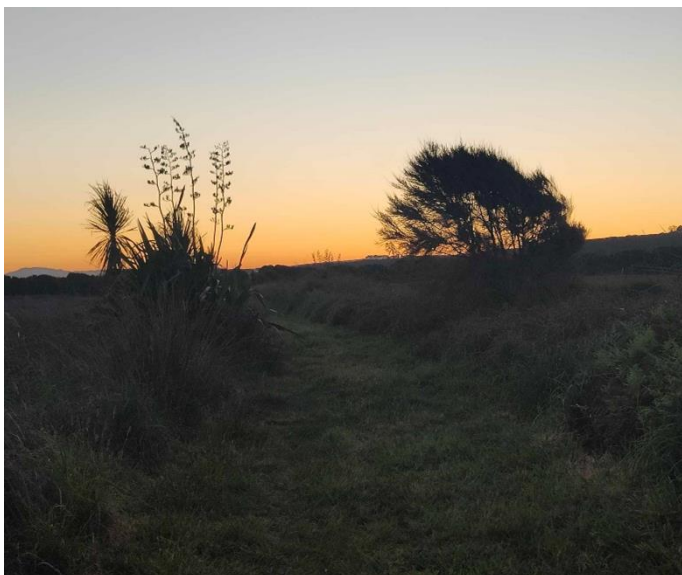
Planting initiatives have seen successful outcomes, with 250 ribbonwood, kanuka, and wineberry thriving along the Pongakawa Stream stop bank. The addition of plant covers ensures their safety and encourages growth within their new environment.

Animal pest control is a crucial aspect of our work at the Wildlife Management Reserve, with regular trap checks yielding the capture of 228 animals. Recent high catch rates emphasise the need for vigilance, particularly during peak breeding times. Tracking tunnels reveal a 60% detection rate for mice, highlighting the importance of our ongoing pest control measures in safeguarding the reserve's unique biodiversity.

The predator fence in the western section is well-maintained, and a new gate has been installed for added security. Plans for educational signage are in progress, offering an informative experience for visitors in the future.

Ongoing monitoring of invertebrates, birds, and reptiles provides valuable insights into the reserve's ecosystem. This year's capture and release of our very first moko skink underlines the significance of our efforts here.

The Waihi Estuary Wetland thrives under MOWS' dedicated conservation efforts, protecting a vital ecosystem of immense value.



**Wandering percher dragonfly (*Erythrodiplax avittata*) and sunset at Waihi Wetland**

## **Te Huaui o Te Kawa**

This Environment Programme (EP) is operated in conjunction with the Maketu Taiapure. Last year saw the construction of a new hard-surfaced track through the centre of the wetland, plus the construction of two new robust wheelchair friendly bridges. This has greatly improved our ability to manage the site and provides good access for school groups.

The site covers 7.5 hectares, our main focus remains on preserving inanga (*Galaxius maculatus*) spawning and rearing habitat. This wetland is a priority 2 biodiversity site due to its importance for inanga.

We've made significant strides in controlling the spread of invasive plants like glyceria, Japanese honeysuckle, tradescantia, gorse, bramble, and pampas. Eliminating these weeds is essential as they tend to disrupt the natural functions of the wetland and threaten native plant diversity. Our approach to manual removal of aquatic weeds seems effective, potentially negating the need for digger work. The beauty of this, we can adapt as needed. Ongoing track maintenance and mowing operations aim to ensure the accessibility and usability of the tracks, which is fundamental for conservation efforts.

We've seen moderate success with DOC200s, but the introduction of an AT220 trap has proven helpful in controlling possums and rats, thanks to their self-setting capabilities.

The Environmental Protection Agency supported a 12-month project to collect quarterly eDNA samples at the wetland. eDNA samples were collected by the Bay Conservation Alliance Cadets and some local school groups, and results of this data has only recently been completed but should be available before the end of the year. In addition, MOWS actively engaged in observing whitebait spawning events.





**The newly installed bridges and wider track now allows for LUV access through the wetland. The track is also suitable for prams and wheelchairs**



# Animal Pest Control

This year, we continued to use the BOPRC Care Group App (Kete Taiao) to report our animal pest control efforts. We have 200 traps spread throughout 10 areas including 161 DOC 200's and 12 AT220's which reset automatically. New additions to our programme included trapping at the Waewaetutuki Fish and Game block located at the end of Waikokopu Road and purchasing and trialling 18 live capture cat traps. DOC owns 10 of the live capture traps, but we outfit each with an Econode sensor, which can send a signal to your app and an email notification when the trap is triggered. To protect nesting bittern, these traps will be deployed throughout our local wetlands during breeding in September - December.

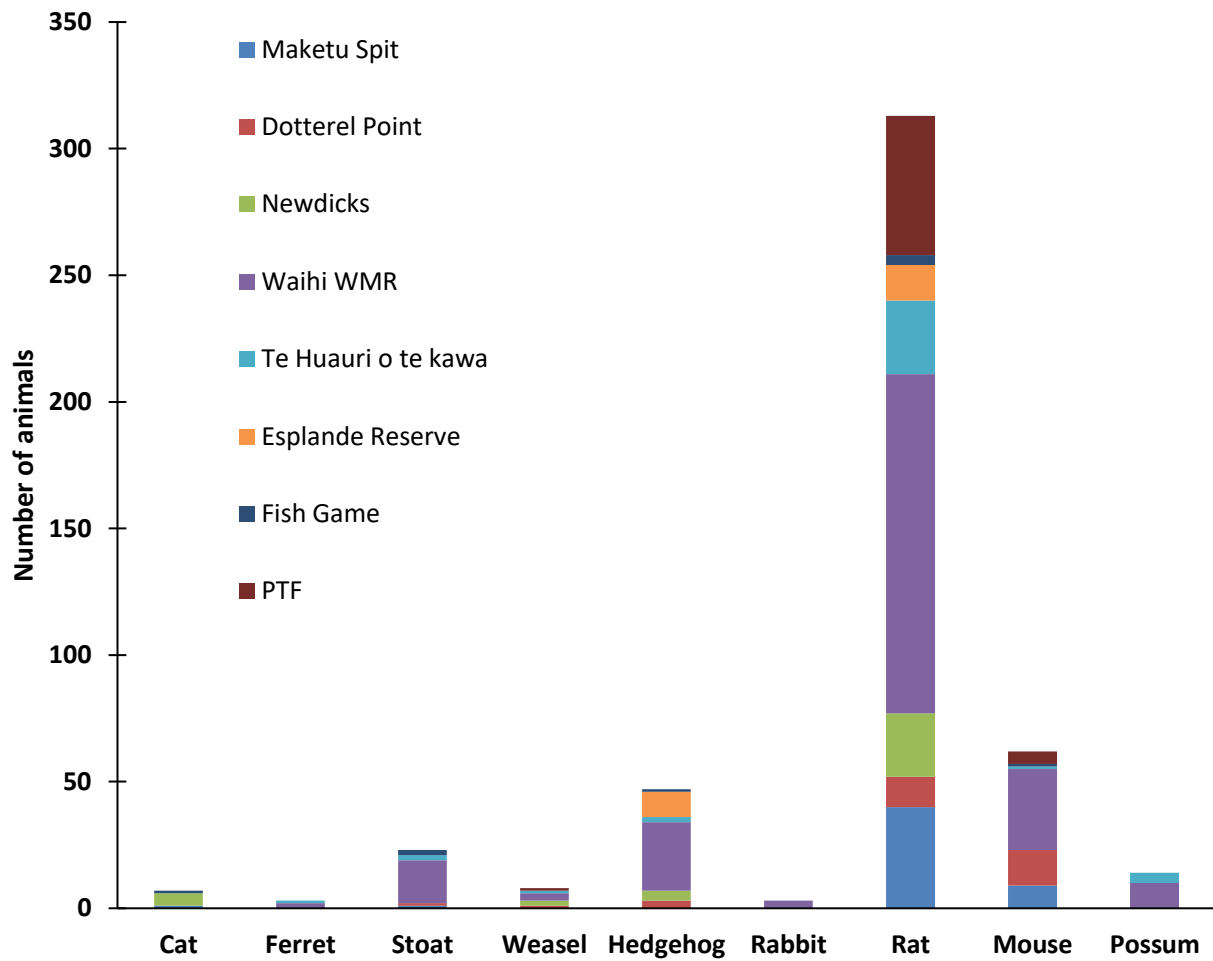
From July 2020 - June 2021, 546 hours were spent checking or re-baiting these traps as well as deploying and checking a network of around 700 bait stations at Maketu Spit and Dotterel Point. An additional 230 hours were spent undertaking animal pest control activities at Te Pa Ika wetland and Papahikahawai and Ford Islands.

Rats were the most common predator across all our sites, followed by mice, hedgehogs and stoats. Since July, we recorded 480 catches throughout Maketu Spit, Dotterel Point, Newdicks Beach, Waihi WMR, Te Huauri o te Kawa, Pukehina Esplanade Reserve, Waewaetutuki Fish and Game block, Papahikahawahi Island, Ford Island and Te Pa Ika. Early records of our cat trap trial was not reported this year, but our system is up and running now, so from August 2023 those records will be available through Trap NZ.



**Josh setting live capture traps at Kaituna Wildlife Management Reserve (left) and some of our DOC 200s brought in for maintenance**

## Mammalian Predators



**Number of mammalian predators captured at our sites from 1 July 2022 – 30 June 2023. Fish and Game is the Waewaetutuki Fish and Game block; PTF is a combined total from Papahikahawai Island, Te Pa Ika and Ford Island.**

# Ecological Monitoring

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Ecological monitoring continued this year, but to a lesser degree than last year. The focus was on our four main EP programmes and no additional monitoring took place.

## **Fortnightly Bird Surveys**

Fortnightly counts of breeding birds have occurred at the breeding areas of Maketu Spit since 2009 and Dotterel Point since 2011.

### **Dotterels and Oystercatchers**

This year, Awhina conducted all the monitoring at Maketu Spit. During 2 September – 23 January, 8 counts were carried out. On average, 16 NZ dotterel (8 breeding pairs) and 34 variable oystercatcher (17 breeding pairs), were observed over the season (Table 1). For the second year in a row, dotterel numbers remain below the long-term average of 23.2. Numbers of dotterel are similar to those reported pre-2012. In 2021/2022 oystercatcher numbers were the highest ever reported, but this year numbers of oystercatchers were also below the long-term average of 37.7.

Julian conducted 11 surveys at Dotterel Point between 2 September and 30 January. During the season, an average of 14 NZ dotterel (7 breeding pairs) and 30 variable oystercatcher (15 breeding pairs) were observed (Table 1). This was the lowest average count of NZ dotterel reported since 2013, and lowest number of oystercatchers since 2017. A highlight from this year was that Julian reported a shore plover at Dotterel Point on two occasions. This bird has a GPS tracker and was released in the Hauraki Gulf earlier in the year.

Fran counted birds at Newdicks Beach, and this was the second year of data collection. No dotterel were observed during high tide surveys in 2021 and only 1 bird was observed in 2022. Average count of variable oystercatcher in 2021 and 2022 was 8.2 (SD = 5.4) and 1.6 (SD = 2.0), respectively. It appears that neither NZ dotterel or oystercatcher are currently nesting in the area, but instead, they are using the area to feed, particularly at low tide when staff note numerous birds in the low tide area.



**Shore plover at Dotterel Point in November 2022. Photo credit: Tim Barnard**

We continue to voice concerns about the dotterel population. Possibly, trends observed here are a result of natural fluctuations in the population or related to climatic and weather variables. However, we worry that the local dotterel population is decreasing. Research into emigration, nest survival, offspring survival and



natal dispersal would certainly help answer some of our questions and provide a better understanding of current population trends. Possibly, the breeding areas have reached carrying capacity or competition from nesting gulls (or oystercatchers) is forcing dotterels to emigrate out of the area. This is of significant concern and some sort of research into the cause(s) is certainly warranted.

**Table 1 – The maximum count and average number of NZ dotterel and variable oystercatcher and associated standard deviation (SD) as determined from fortnightly counts collected during the breeding season at Maketu Spit, Dotterel Point and Newdicks Beach. Maximum counts likely include non-breeders, and/or juveniles seen roosting in the area as well as breeding pairs.**

Year	# of counts	<u>NZ Dotterel</u>			<u>Variable Oystercatcher</u>		
		Max	Average	SD	Max	Average	SD
<b>Maketu Spit</b>							
2009	13	26	11	8.0	31	19	7.6
2010	11	30	19	7.7	38	30	7.8
2011	17	25	15	7.4	41	23	8.9
2012	15	26	19	7.1	63	30	13.1
2013	11	38	27	6.4	41	31	8.5
2014	17	35	22	8.2	40	26	9.2
2015	10	38	26	8.1	53	44	6.9
2016	10	34	26	4.	52	42	6.2
2017	7	40	28	9.4	57	49	4.0
2018	11	47	30	12.6	65	41	10.5
2019	8	49	28	12.9	56	26	7.4
2020	10	47	29	8.5	55	39	10.1
2021	9	23	14	5.7	88	51	18.1
2022	8	31	16.6	6.4	42	33.6	7.2
<b>Dotterel Point</b>							
2012	12	16	12	3.1	21	13	4.3
2013	10	22	15	3.2	24	16	5.6
2014	12	23	16	4.5	28	21	3.2
2015	12	37	20	6.4	34	28	3.8
2016	9	24	18	3.5	31	26	3.1
2017	9	29	21	3.7	34	27	4.8
2018	6	24	20	3.1	37	30	3.3
2019	7	26	18	4.9	36	28	5.8
2020	7	26	23	2.5	47	35	6.8
2021	10	22	15	4.0	43	33	5.0
2022	14	24	14.3	3.4	38	29.9	8.9
<b>Newdicks Beach</b>							
2021	6	0	0	0	16	8	4.9
2022	5	1	0.2	0.4	5	2	1.7

### Black-billed and Red-billed Gulls

The gull colony is simply too big to count from the ground, so drone imagery has been used since 2020 to obtain counts. Once again, we commissioned local photographer Andy Belcher to take three sets of drone photos during October/early November to enable us to better count the nests. To provide consistency among counts, Awhina counted all the 2022 photos and re-counted 2020 and 2021 using Dot Dot Goose. Unfortunately, poor image quality in 2020 meant she was unable to use all 3 images from 2020. Results from 2022 were more akin to 2020 numbers, with approximately 700 less gull nests last year than in 2021.

**Table 3 – Red-billed gull nests identified from drone imagery in last year compared to this year**

2020		2021		2022	
Date	Nests	Date	Nests	Date	Nests
2 Oct 2020	2765	3 Oct 2021	3471	10 Oct 2022	1908
21 Oct 2020	2790	10 Oct 2021	3049	21 Oct 2022	3511
4 Nov 2020	2652	27 Oct 2021	3843	14 Nov 2022	2768
<b>Average ± SD</b>	<b>2736 ± 60</b>		<b>3454 ± 324</b>		<b>2728 ± 655</b>



**Gulls nesting and preparing to nest at Maketu Spit**

### Other birds

We counted all other birds observed during our fortnightly counts as well. Other highlights from this year include:

- 1 shore plover at Dotterel Point in November 2022
- 63 black-billed gulls were reported at Maketu Spit in October 2020
- 200 white-fronted terns and 1000 bar-tailed godwit at Dotterel Point in January 2023
- Godwit occurred during 4 surveys at Dotterel Point from December - end of January
- 37 wrybill at Dotterel Point in September 2022, and wrybill occurred during 7 counts
- 10 Caspian tern at Dotterel Point in December 2022
- At Maketu Spit, maximum counts of pied shags was 6
- At Dotterel Point, maximum counts of pied and little pied shags were 30 and 30, respectively

## **Wetland Birds**

This year, bird surveys were carried out only at Waihi Wetland. Awhina did all the surveys at Waihi East and Jenn did the surveys at Waihi West. Jenn has prepared an in-depth bird report that details avian abundance and numbers throughout the sites, this is available upon request.

There was nothing usual at the wetlands last year. Bittern were about and booming, fernbirds were quick to make their presence known when observers entered their territory and the occasional rail and crane responded to call playbacks.



**Fernbird pops out behind observers during bird surveys at Waihi wetland**



## **Estuarine Birds**

Since 1955, 97 species have been reported in Maketu Estuary and 96 species have been reported in Waihi Estuary (Table 2). This includes some rare and vagrant birds such as Far-eastern curlew, Hudsonian godwit, whimbrel, sharp-tailed sandpiper, pectoral sandpiper, terek sandpiper, black-fronted dotterel, black-fronted tern, white-winged black tern, Australian ibis, and brown and chestnut teal.

Shore plover were reported for the first time this year at Dotterel Point and grey-faced petrels for the first time at Maketu Spit/Kaituna bar. Below we have summarised results for both Estuaries over the last year and have compared these counts to historic high counts reported through eBird.

In Maketu Estuary, there were new all-time highs reported for: NZ scaup (5) and red-billed gull (2000). In Little Waihi Estuary, all time highs were reported for pūkeko (35) and Caspian tern (25).



**Sharp-tailed sandpiper at Little Waihi Estuary in March (photo credit: Tim Barnard)**



**Cattle egrets mixed with royal spoonbills in Maketu Estuary in August (photo credit: Pauline and Ray Priest)**

**Table 2 – Species reported in Maketu and Little Waihi Estuary through eBird by members of the public**

Species	Maketu Estuary		Little Waihi Estuary	
	2022/23	Historic high (year)	2022/23	Historic high (year)
<b>Waterfowl</b>				
Australasian shoveler	40	100 (2007)	2	100 (2018)
Black swan	50	500 (2019)	15	500 (2017)
Brown teal	—	—	—	1 (2016)
Canada goose	150	400 (2017)	160	400 (2017)
Chestnut teal	—	—	—	1 (2016)
Grey duck	—	4 (1975)	2	4 (2015)
Grey teal	13	400 (2021*)	1	1500 (2015)
Mallard	65	200 (2016)	28	250 (2017)
Mallard x grey duck hybrid	35	100 (2018)	70	200 (2019*)
NZ Scaup	5	2 (2015)	1	1 (2020)
Paradise shelduck	15	56 (2016)	34	390 (2018)
<b>Rails</b>				
Australian coot	—	1 (2011)	—	—
Banded rail	1	4 (2017)	—	3 (2015*)
Pūkeko	14	34 (2015)	35 <sup>2</sup>	16 (2015)
Spotless crake	—	1 (2019)	—	1 (2017)
American golden plover	—	—	—	1 (2011)
Banded dotterel	10	121 (2015)	139	189 (2018)
Bar-tailed godwit	900	1300 (2022)	804	900 (2017)
Black-fronted dotterel	—	6 (1977)	—	—
Black-tailed godwit	—	1 (2014)	—	—
Far-eastern curlew	—	2 (2021)	—	—
Great knot	—	—	—	1 (2013)
Greater sand dotterel	—	—	—	1 (2017)
Grey-tailed tattler	—	1 (2017*)	—	1 (2017*)
Hudsonian godwit	—	1 (2017)	—	1 (2016*)
Lesser sand dotterel	—	—	—	1 (2018)
Marsh sandpiper	—	4 (1970)	—	2 (2018)
NZ dotterel	14	45 (2018)	27	32 (2014)
Pacific golden plover	40	52 (2022)	2	90 (2018)
Pectoral sandpiper	—	1 (1970)	—	3 (2013)
Pied stilt	86	350 (2020)	284	580 (2015)
Pied x Black Stilt hybrid	—	1 (2022*)	—	2 (2016)
Red knot	81	200 (2022)	22	202 (2017)
Red-necked stint	—	4 (2000)	—	4 (2011)
Red phalarope	—	1 (1977)	—	—
Ruddy turnstone	—	13 (1970)	—	5 (2016)
Sanderling	—	1 (2011)	—	1 (2013)
Sharp-tailed sandpiper	1	23 (2022)	—	4 (2021*)
Shore plover	—	—	1	—

**Table 5 – continued**

Species	Maketu Estuary		Little Waihi Estuary	
	2022/23	Historic high (year)	2021/22	Historic high (year)
SI Pied oystercatcher	150	403 (2020)	200	400 (2014)
Spur-winged plover	40	150 (2016)	12	65 (2018)
Terek sandpiper	—	—	—	1 (2003)
Variable oystercatcher	133	206 (2022)	112	120 (2020)
Whimbrel	—	2 (2017*)	—	3 (2016)
Wrybill	6	38 (2022)	85	140 (2021*)
<b>Large waders (Bitterns, egrets, herons, ibises, spoonbills)</b>				
Australasian bittern	—	1 (2015)	1	1 (2020)
Australian ibis	—	1 (1975)	—	—
Cattle egret	10	14 (1999)	—	26 (2015)
Glossy Ibis	—	—	—	2 (2016)
Kotuku/great egret	—	20 (2005)	—	2 (2017)
Reef heron	—	2 (2021)	—	1 (2015)
Royal spoonbill	52	84 (2014)	60	80 (2021)
White-faced heron	35	50 (2020*)	20	300 (2015)
<b>Gulls and terns</b>				
Arctic tern	—	1 (2015)	—	—
Black-backed gull	150	212 (2021)	50	200 (2016)
Black-billed gull	16	50 (2015)	14	40 (2015)
Black-fronted tern	—	1 (2019*)	1	1 (2018)
Caspian tern	5	12 (2021)	<b>25</b>	25 (2018)
Common tern	—	1 (2020*)	—	—
Crested tern	—	1 (2015)	—	—
Fairy tern	—	2 (2004)	—	—
Little tern	—	8 (2005)	—	4 (2017)
Red-billed gull	<b>2000</b>	1684 (2021)	250	400 (2017)
White-fronted tern	200	600 (2015)	120	500 (2018)
White-winged black tern	—	3 (2014)	—	—
<b>Shags</b>				
Black shag	21	24 (2020)	6	23 (2016*)
Little black shag	—	25 (2015)	1	20 (2018)
Little pied shag	19	35 (2015)	8	34 (2017)
Pied shag	50	55 (2012)	21	37 (2015)
<b>Raptors</b>				
Falcon	1	1 (2018)	—	—
Kahu	2	5 (2018)	3	4 (2018*)
<b>Kingfishers</b>				
Kotare	12	30 (2018)	30	30 (2021*)
<b>Passerines</b>				
Fernbird	—	5 (2020)	<b>1</b>	10 (2022*)



## Reptiles

Our annual reptile monitoring report provides insights into our efforts to track and conserve the native skink populations at various locations. Skinks are super sensitive to changes in their environments and can serve as valuable indicators of an ecosystem’s health. During November 2022 and March 2023, our monitoring efforts were primarily concentrated on Maketu Spit, Dotterel Point, Waihi Wetland and Newdicks Beach and involved several observers capturing mostly shore skinks, using pitfall traps.

### Skink Capture Summary (Table 6)

Site	Shore Skink		Moko Skink	
	Mar 2021 – Nov 2022	Mar 2022 – Nov 2023	Mar 2021 – Nov 2022	Mar 2022 – Nov 2023
Maketu Spit	47	72	0	0
Dotterel Point	8	17	0	0
Newdicks Beach	6	7	0	0
Waihi West	5	6	0	0
Waihi East	1	1	0	1

### Key Highlights

- Maketu Spit: The shore skink population at Maketu Spit showed a significant increase, rising from 47 in 2021-2022 to a record high of 72 in 2022-2023. This suggests that conservation efforts in this area have been effective in supporting the shore skinks.
- Dotterel Point: Like Maketu Spit, Dotterel Point saw a positive trend in the shore skink population, with numbers rising from 8 in 2021-2022 to 17 in 2022-2023.
- Waihi East: In March 2023, the discovery of a Moko skink was made at Waihi East. This discovery is particularly significant as the conservation status for Moko skink is listed as at risk. Finding them in this location highlights the importance of Waihi East for Moko skink conservation.

### Moko Skinks

The Moko skink *Oligosoma moco*, is a lizard species native to New Zealand, that possesses several distinctive features and characteristics: Moko skinks are small to medium-sized lizards with a relatively slender body and a flattened head. They are typically brown or grey in colour with darker bands and markings. Moko skinks are considered a species of conservation concern due to their limited distribution and vulnerability to habitat loss and predation. The exciting discovery of the Moko skink at Waihi East, is a positive development as it indicates that this rare species is present in the area. However, more research is needed to assess the size and health of this population, as well as the potential impacts of any habitat changes.

### Conclusion

Our reptile monitoring efforts in 2023 have provided us with valuable insights into the changing dynamics of skink populations at all our sites. A comprehensive report with detailed analyses of this year's findings will be released shortly.



**Raven Nicolas undertaking Skink monitoring at Maketu Spit**

# Education Programme

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The MOWS Education Programme has seen another successful year thanks to Western Bay of Plenty Council (WBOPDC), BayTrust and TECT for continued funding. Additional support from WBOPDC has allowed us to increase our number of schools and we now work with all but one school in our area. MOWS collaborates with multiple partners on our education programme. We are very grateful for their input and appreciate their support: Taiapure Trust Maketu, Otanewainuku Kiwi Trust, Te Runanga o Ngati Whakaeue, BOP Regional Council, Predator Free BOP, Te Whakakaha Trust, Wai Kokopu Inc., Bay Conservation Alliance, Coast Care BOP, Redwood Valley Farm, Western BOP District Council Library, Wildlands and House of Science.

## **Term Four 2022**

Our focus for Term 4 was the Rocky Shore. Under the famous cliffs of Okurei, Maketu, lies a fantastic rocky shore with all the ecological zones for students to explore. This year, we included a hiko through the Kotukutuku Gully in Maketu to view a great example of a coastal forest. Lauri Russel gave us a korero on the history of the gully and her role as the lead volunteer in charge of managing the maintenance of the gully. Carolyn Symmans showed us how she sets the traps and some of the grizzly things she finds in the early hours of the morning when she checks them.

We hosted five field trips to the rocky shore and gully in term 4 where the students rotated through several activities. They volunteered their time to collect rubbish along the beach and rock wall, collecting bag loads of discarded litter. They also viewed the incredible bird colony across the Maketu estuary entrance on Maketu Spit. To see the baby birds, the students used high powered scopes and binoculars.

During the rocky shore exploration, students carried out a scavenger hunt to find all sorts of creatures in the low, mid and high tide zones. One day, a particularly high tide posed some challenges getting to the rock pools but instead the students discovered hundreds of crabs in the splash zone, hiding from waves under the rocks.

We finished each day with an end of year prizegiving and BBQ. It was great to finish another successful year with a beautiful, busy day at the beach. As in previous years, we provided our schools with a medal and book to be given out at the end of year prizegiving along with a trophy.



**Left: Students from Te Kura o Maketu looking at baby gulls on Maketu Spit through a bird scope**

**Middle: Students from Rangiuru School find a sea anemone under a rock**

**Right: Year 5-6 students from Paengaroa School resting after a big search for an octopus**

## **Term One 2023**

During term 1 this year, we focused on our local estuaries. Our in-class lessons covered the importance of estuaries, the estuarine habitat and factors that negatively impact our estuaries. In each lesson, students examined kaimoana and marine pest species. They also played a game matching items with metaphors describing the estuary. Awhina, our bird expert, shared information about estuarine birds and their adaptations.

Maketu is one of two areas in Australasia with an estuary on both sides of a point. We made the most of this unique landform by visiting both estuaries and comparing them. Local freshwater scientist, Meredith Davis, joined us at Little Waihi for each field trip to discuss the sedimentation and pollution affecting the estuary. Students explored the estuary, searched for crabs and noted what made Waihi estuary unique.

Students also visited Maketu estuary and helped Elaine from Maketu Taiapure Trust with her kaimoana surveys. Niven Rae took the students for a short historical hikoī of the area, showing key landmarks from Te Arawa history. Students love exploring and crab hunting so we made sure we had plenty of time for that.

Our follow up activity was to paint cut out birds for our local murals and to develop new murals in their schools. Four of the schools have requested an estuary mural for their walls. We are employing an artist with funding from Creative Western Bay of Plenty to paint the backgrounds and hope to have these completed by March 2024.

Te Puke High School also enjoyed a day at the estuary doing the deeper kaimoana surveys that couldn't be done by the younger students. We also ran two forest field trips for the high school students. We developed a new unit for the Year 12 Biology students where they completed a stratification survey of plants at Otanewainuku. The Year 11 Science students ran a trapline and monitoring line at Otanewainuku.



**Top photos: Students from Paengaroa and Rangiuru with their estuary discoveries**  
**Bottom photos: Niven Rae giving a historical hikoī of Maketu. Students from Otamarakau School figuring out the estuary metaphor game**



## **Term Two 2023**

Our focus for Term 2 was Climate Change, a new unit that we taught for the first time. Every year, we collaborate with Coast Care on a dune unit. We wanted to change the focus slightly so that the students would get two dune-based units over two years with different activities included. Our angle this year was on how our dunes and other natural environments protect us from the impacts of climate change.

In our in-class lesson, we explored what climate change is and how it impacts us and our local ecosystems. We used resources from the Councils to highlight the changes we may expect, including sea level rise, heavy rain, drought, and more frequent, stronger storms. We discussed how communities can become more resilient to the impacts of climate change and how we can reduce our carbon footprint. We gave examples of migratory birds that are already adapting to climate change by changing the way they feed and travel around the globe.

We also looked at how evidence-based science and anecdotal observations can inform how we adapt. To emphasise this, we used a local expert's observations on the effects of a rainy summer on spinifex pollination. The students learnt about the spinifex fertilisation process and helped shuck spinifex seeds for the nursery to grow on as they have a larger demand for plants.

During our field trips, 280 students from 7 schools planted 1200 native dune plants, weeded dune areas and picked up many bags of rubbish as their contribution to protecting our natural dune buffer system. We ran several activities alongside the weeding and planting. The younger students completed dune profile pictures using transect lines and angles, while the older students extended the dune profile pictures by adding vegetation surveys. Our 'Tohu' activity involved the students digging for shells with different 'tohu' or signs that many iwi around Aotearoa use for predicting the weather and climate. The students also enjoyed some active games, including a recycling relay and carbon reduction activity that demonstrated how greenhouse gases are trapped in our atmosphere.

Our follow up activity was a climate change poster competition. The winning posters will be displayed in the Te Puke library later in the year. The prizes included equipment to have in their 'Get Ready' kits.

We started our Te Puke High School wetlands unit with an in-class introduction and field trip to measure the health of the Tumu Kawa wetland and plan the planting sites for term 3. The students investigated a wetland species and worked on their site plan ready to plant 650 plants in August.



**Left: Students from Te Puke Intermediate doing a vegetation survey at Dotterel Point**  
**Middle: Students from Te Kura o Te Matai digging for shells during the 'tohu' game**  
**Right: Chris Pronk, Coast Care Coordinator, shucking spinifex seeds with students from Maketu School**

## **Term Three 2023**

Term 3 is always our wetland planting term at Tumu Kawa and this year was no exception. We started with our classroom lessons, sharing korero on the vital importance of wetlands, the role they play as a habitat and how they store water and carbon. This linked with our previous unit on climate change.

Our activities focused on the awesome wetland plants and birds. The students got to look at the plants up close and identify some of the interesting attributes of the leaves and bark. They also had a close look at some of the MOWS wetland bird taxidermy collection; matuku hūrepo, pāpera, pūkeko, moho pererū and kahu.

Our planting days are a collaboration with multiple organisations. BOP Regional Council organise the space, provide the plants and facilitate the planting for each field trip. Liam Tapsell from Ngāti Whakaeu ki Maketu provided a fantastic korero on the traditional uses of Kahikatea from the wetlands. Meredith Davis from Wildlands Consultants facilitated a wetland habitat activity with lots of wetland bugs and a fun bird game. Karen Scott from House of Science also joined us during a field trip to help with water monitoring.

During the eight field trips, 3500 wetland plants were planted by nine local schools. We have been planting at Te Pourepo o Kaituna for 4 years and this was our last year as the 70 hectare extension to the Kaituna Wetland is now fully planted. We are looking for a new site for 2024.

This term we invited two Year 5-8 classes from Te Ranga School on board for the first time with new funding from WBOPDC. The funding has also allowed for Otamarakau School to receive our programme more consistently and to bring on new schools in Term 4 also.



**Top left: MOWS facilitator Awhina and two students from Te Kura o Maketu searching for wetland bugs**  
**Top middle: Liam Tapsell speaks to students from Rangiora School about Kahikatea**  
**Top right: Student from Te Kura o Te Matai planting a tree**  
**Bottom: Students from Te Kura o Te Matai planting wetland plants at Tumu Kawa**



# Our Team



**Julian Fitter**  
Chair

Julian is a naturalist, conservationist, writer, and lecturer with a particular interest in New Zealand wildlife and island ecosystems. Educated in the UK, Julian spent 15 years in the Galapagos Islands where he established and ran the first yacht charter operation. Since moving to New Zealand Julian has become an ambassador for native wildlife, being involved in many aspects of conservation in the country, and the driving force behind Maketu Ongatoro Wetland Society. He was instrumental in establishing Bay Conservation Alliance, an umbrella organisation linking conservation groups together and giving them extra support in order to assist them in their work.



**Jenn Sheppard**  
Operations Manager

Jenn is a skilled ecologist with 15 years of experience leading and planning ecological projects and conducting robust ecological statistical analyses. Jenn has conducted field research over the past 20 years in a range of habitats and on a variety of species, particularly on waterfowl and shorebirds. As Operations Manager she manages and coordinates biosecurity and ecological restoration activities. Previous to this role, Jenn was the Biodiversity Officer for MOWS and still carries out monitoring of dotterels and other nesting birds, conducting skink and invertebrate surveys, and measuring vegetation throughout the dunes.



**Janie Stevenson**  
Education Facilitator and Secretary

Janie grew up in Mount Maunganui and currently resides in Maketu with her whānau. Janie has a background in environmental education, community engagement and facilitation, and has worked in education roles with BOP Regional Council and NZ Landcare Trust. Janie is the MOWS Secretary and Education Officer, coordinating and delivering school visits and field trips to our local, natural environments. Janie also works for Bay Conservation Alliance as the Education and Engagement Manager. On the weekend, Janie is often found in the garden or at one of Maketu's beautiful beaches with her kids, falling off a surfboard.



**Awhina Awhimate**  
Biodiversity and Conservation Manager

A dedicated advocate of ecological restoration, Awhina brings a wealth of experience and a profound connection to the land as tangata whenua to her role as Operations Manager. She has made significant contributions through her roles as a field worker, Biodiversity Conservation Officer and Education Facilitator for MOWS and Bay Conservation Alliance. Awhina's unique skills and experience in conservation and facilitation along with her background in administration, positions her perfectly for this challenge. As Operations Manager, Awhina is focused on nurturing existing relationships and forging new partnerships in order to enhance restoration and conservation efforts in the area.



**Raven Nicholas**  
Senior Biosecurity and Restoration Ranger

Raven began volunteering for MOWS in early 2021 and found her passion for the restoration of our native flora and fauna. In July 2021 she completed the cadetship with Bay Conservation Alliance where she gained many skills and certifications. As MOWS newest employee, she is excited to be working to restore the Mauri of the whenua and waterways around Maketu. Raven is married with 4 tamariki and lives in Maketu. She has whakapapa links to Te Arawa as Ngāti Whakaue and Ngāti Pikiao, just to name a few. Her hobbies include netball, swimming, and whatever her children need to grow.



**Josh Speeden**  
Biosecurity and Restoration Ranger

A true jack of all trades. Josh brings a wealth of knowledge to his role from previous jobs as an automotive mechanic, handyman, furniture maker/restorer, and avocado orchard maintenance. On top of his other fieldwork duties, he is our maintenance man and boat skipper. Beyond his professional abilities, Josh is an experienced lifestyle blocker who enjoys various outdoor activities such as fishing, freediving, surfing, and hunting. Josh loves the work/life balance that MOWS offers as whanau is a strong focus of his, as Josh is the primary carer for he, and his wife Emma's 6-year-old son Asher





**Lana Ross-Maika**  
Biosecurity and Restoration  
Ranger

Lana is the newest member of the biosecurity restoration team. Her journey in conservation started while volunteering with different community groups and completing the Bay Conservation Alliance cadetship. Lana has experience with pest plant control, and animal pest control. Working with MOWS enables her to combine her love for the outdoors with working towards restoring and protecting native flora and fauna. Lana is a Maketu local who is a descendant of Te Arawa through Tūhourangi and Ngāti whakaue



**Gary Williams**  
Accountant

Gary has been a member of MOWS since 2011 and, as a Chartered Accountant, he is also our Treasurer. Gary kindly donates his time to MOWS and takes care of vital tasks such as paying the wages and bills and preparing our financial reports. When not working hard in the office Gary likes to get outdoors and help the MOWS work team when an extra pair of hands is required. In his free time Gary enjoys time with family, the great NZ outdoors, fishing, cycling and fun in the sun at Maketu. His hope for the future is to see the implementation of a noxious plant and pest free strategy for Maketu village and surrounds.



**Peter Ellery**  
Wetland Restoration Ecologist

Peter has a graduate diploma in applied science and has had a long involvement with sea fisheries management, which led him to embark on the restoration of an inanga spawning site on the Kaituna River known as the Borrow Pits. This has become an extremely successful project, now known as the Te Huauri o Te Kawa Wetland (THOTK). Peter is also involved with Wai-kokopu, Kaituna Ongatoro/Maketu Estuary Strategy, the MOWS Education Program, and is currently participating in the Freshwater Futures, Kaituna, Community Group.



**Carolyn Symmans**  
Pest Control Officer

Carolyn is the most active person in the Maketu community! She is involved with Predator Free NZ, St Paul's Maori Anglican church, and is a member of Maketu Kaumatua Group based at Maketu Houora. Carolyn is passionate about wildlife, and as well as her involvement with MOWS, she also helps with restoration and predator control in Kotukutuku Gully, rescues and rehabilitates native birds, and is always picking up litter. As well as being Pest Control Officer for MOWS Carolyn is also a member of the MOWS education team and teaches the children about the importance of controlling pest mammals in order to protect our native wildlife.



**Claire Hartley**  
Membership Secretary and  
Website Manager

A UK expat with a degree in Zoological Conservation and a background in animal care, Claire is an avid conservationist. Back in the UK she had a varied career including being a zookeeper, a farm park worker, and managing an exotic pet shop. Claire was previously a field team member for MOWS assisting with ecological restoration and has since retrained in website administration, completing a Certificate in Web Design and Writing in order to manage the MOWS website. She also works for Bay Conservation Alliance. When not busy keeping her toddler entertained, Claire can normally be found skating, horse riding, swimming, kayaking, or watching movies.



**Maureen Binns**  
Educator

Maureen has journeyed with MOWS since it began in 2008. She has served various roles on the committee as Chair, Secretary and Member at large. She has volunteered to monitor birds on Maketu Spit and assisted as educator with the education team for several years. In recent years, Maureen has become very busy with her truffle farm in Paeganarao, Te Puke Truffles. Sadly, family commitments have taken precedence and Maureen has recently resigned from the MOWS committee. We acknowledge all the hard work and volunteer time Maureen has contributed over the years and we wish her all the best in her future endeavours.



**Fran van Alphen**  
Avian and Invertebrate Surveyor

Fran has a BSc in ecology and has spent many years working in horticulture. Keen to get back into ecology she completed the BCA cadetship to help her upskill for a role in conservation. She has spent the last 12 years with the Manawahe Eco Trust doing governance and predator control and has carried out forest bird monitoring for the past 4 years. Fran has now stepped into the role of our terrestrial invertebrate ecologist and volunteers to conduct bird surveys for MOWS. Fran also works part time as a junior ecologist for River Lake Ltd, and as a casual contractor for ATS Environmental focusing on fish passage.



**Meredith Davis**  
Committee Member

Meredith is a freshwater and disease ecologist finishing a doctorate at Massey University. She began working with the MOWS education programme in 2022 and joined the committee in 2023. Currently, she works with select catchment groups, iwi/hapū, and as a Senior Freshwater Ecologist. She maintains academic ties, has published multiple peer reviewed papers, and is regularly invited to speak about her research and community work. She is a member of MOWS, One Health Aotearoa, the Au/Ao Freshwater Science Society, the Microbiological Society, Te Ara Paerangi, and the Australasian College of Tropical Medicine and has partnered with Fish and Game, Zespri, and GNS on past projects.



**Laura Rae**  
Biosecurity and Restoration  
Ranger

Laura is an avid conservationist who is very passionate about the environment. In recent years, she has divided her time between MOWS and the Maketu Community Board, always working to improve the well-being of the local community and the environment. Laura started with MOWS in 2018, quickly becoming wetland manager at Te Huauri o Te Kawa and team leader of the biosecurity team. Laura's journey with MOWS has now come to an end and she left the team in September. We acknowledge all the amazing mahi she has done over the years, and we wish her all the best.



# Acknowledgements and Supporters

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We would like to acknowledge the hard work and dedication of our committee, our biosecurity and restoration team, our monitoring team, educators, and numerous volunteers. We would like to extend a huge thank you to all the school kids that we've had the privilege to teach this year and their associated teachers and schools.

We collaborate with several organisations and would like to express our gratitude to: Chris Ward and Chris Pronk (Coast Care); Rusty Knuston, Michael Tyler, Pim de Monchy and Steph Bathgate (BOPRC); Peter Watson and Sue Hammond (WBOPDC); Karl McCarthy (DOC); Michelle Elborn, Wayne O'Keefe and Emma Cronin (BCA); and John Miekle (Eastern Fish and Game).

Numerous people volunteered their day to assist with rubbish clean-ups or planting during our working bees this past year, and we would like to also acknowledge their efforts. Thank you to all our volunteers!

Our hard work would not be possible without the support of our funders and sponsors.





# Financials

## Notes to the Performance Report

### Maketu Ongatoro Wetland Society Incorporated For the year ended 30 June 2023

	2023	2022
<b>1. Analysis of Revenue</b>		
Donations, fundraising and other similar revenue	2,059.93	14,200.40
Fees, subscriptions and other revenue from members	69.59	356.55
<b>Revenue from providing goods or services</b>		
BOP Regional Council - EP's	114,486.25	115,747.78
BOP Regional Council - Other Contracts	106,064.06	63,789.90
Western BOP District Council	60,648.00	72,270.00
Te Arawa Lakes Board Trust	17,906.32	13,082.26
Bay Trust	40,000.00	-
Sponsorship & Grants	5,000.00	-
TECT	48,790.00	40,000.00
Other Contracts	41,698.86	70,671.15
<b>Total Revenue from providing goods or services</b>	<b>434,593.49</b>	<b>375,561.09</b>
Interest, dividends and other investment revenue	1,280.66	170.15
Other revenue	600.00	3,193.70
<b>Total Analysis of Revenue</b>	<b>438,603.67</b>	<b>393,481.89</b>
	2023	2022

### 2. Analysis of Expenses

<b>Costs related to providing goods or services</b>		
Administration	22,513.12	22,163.65
Contract Expenditure	421,525.74	377,899.47
<b>Total Costs related to providing goods or services</b>	<b>444,038.86</b>	<b>400,063.12</b>
<b>Total Analysis of Expenses</b>	<b>444,038.86</b>	<b>400,063.12</b>
	2023	2022

### 3. Analysis of Assets

<b>Bank accounts and cash</b>		
00-CUR Maketu Ongatoro Wetland	82.00	82.00
01-SAV Maketu Ongatoro Wetland	34,605.33	25,600.77
<b>Total Bank accounts and cash</b>	<b>34,687.33</b>	<b>25,682.77</b>
<b>Debtors and prepayments</b>		
Accounts Receivable	32,481.33	7,364.11
Reimbursements & Recoveries	-	(285.76)
<b>Total Debtors and prepayments</b>	<b>32,481.33</b>	<b>7,078.35</b>
<b>Property, Plant and Equipment</b>		
Plant & Equipment	68,380.06	67,510.45

Buildings	84,984.07	84,984.07
<b>Total Property, Plant and Equipment</b>	<b>153,364.13</b>	<b>152,494.52</b>
<b>Total Analysis of Assets</b>	<b>220,532.79</b>	<b>185,255.64</b>
	2023	2022

**Property, Plant and Equipment**

	2023	2022
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**4. Analysis of Liabilities**

**Creditors and accrued expenses**

Accounts Payable	32,448.90	1,380.00
GST	3,201.50	(6,225.88)
PAYE Payable	3,903.68	4,113.52
Wages Deductions Payable	1,482.02	2,137.73
Withholding Tax Payable	242.00	30.00
<b>Total Creditors and accrued expenses</b>	<b>41,278.10</b>	<b>1,435.37</b>
<b>Total Analysis of Liabilities</b>	<b>41,278.10</b>	<b>1,435.37</b>

	2023	2022
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**5. Accumulated Funds**

**Accumulated Funds**

Opening Balance	183,820.27	188,590.59
Accumulated surpluses or (deficits)	(4,565.58)	(4,770.32)
<b>Total Accumulated Funds</b>	<b>179,254.69</b>	<b>183,820.27</b>
<b>Total Accumulated Funds</b>	<b>179,254.69</b>	<b>183,820.27</b>

**6. Events After the Balance Date**

There were no events that have occurred after the balance date that would have a material impact on the Performance Report (Last year - nil).





**WILDLIFE CONSERVATION / RESTORATION / EDUCATION  
ECOLOGICAL MONITORING / COMMUNITY ENGAGEMENT**

