

Te Matau a Māui project update Interim report August 2018

Native species thrive where we live, work and play



Kaumatua Trevor Taurima and Kuia Hinei Reti holding Rangimarie, the kōruru chick that Hinei named.
Photo: Melissa Brignall-Theyer

This report provides project status information from 1 January to 30 June 2018
Prepared by the Te Matau a Māui Project Management Team

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Executive summary

The project team would like to thank the Aotearoa Foundation (and through them the Robertson Foundation) for their investment in and support of the Cape to City and Poutiri Ao ō Tāne projects. These projects are now nationally recognised as cutting edge ecological restoration projects. They are reshaping policy, practise and perceptions on what can be achieved in restoring native species across our landscapes. This would not have been possible without the investment made by the Robertson Foundation.

Over the last six months the effort of the Project team has been rewarded with two successful grants: Predator Free Hawke's Bay (PFHB) was awarded \$1.62m from Predator Free 2050 Ltd (PF2050) over four years and Connected to Nature was awarded \$410,000 from the Air New Zealand Environment Trust over 3 years. Both these initiatives are collaborative projects and bring significant co-partner funding.

The 2018 Te Matau a Māui milestones are 72% complete and on track to be fully completed by December.

There are three 2018 milestones that the project team would like to make changes to: The kiwi translocation, bat monitoring, and graduating 30% of farmers to maintenance of predator control (Section 1.3).

Some of the highlights from Te Matau a Māui over the last six months have been:

- Predator Free Hawke's Bay has been launched
- The projects have been presented in a variety of forums, from iwi summits to agricultural fieldays
- Education programmes were reviewed and presented at a national conference, and the Connected to Nature funding proposal with the Air New Zealand Environment Trust was successful.
- The final kōruru translocation was completed successfully, previously translocated seabirds have started returning to Poutiri Ao ō Tāne, and unbanded toutouwai/robins are now being seen and heard outside their original release site on the Maraetotara plateau in Cape to City.
- An additional 26,000 plants are going in the ground this winter bringing the total planting in Cape to City to 253,000.
- Live capture knockdown of predators in Cape to City is now complete

In the next six months the project team will be very busy, not only completing the 2018 Te Matau a Māui milestones, but also getting PFHB and 'Connected to Nature' up and running.

1. Project management update

For the first six months of 2018 the project team has been focusing on developing funding proposals to transform the knowledge gained in the last seven years into a regional context. This is predominantly around predator control work and education. However, the team did also manage to have some fun and time to reflect at a Team day in May.

1.1 Project structure update

There have been a couple of minor changes to the project team. Hetty McLennan returned to the team and the Habitat Restoration workstream lead, and Theresa Thornton replaced Bonny Hatami as the Ngāti Pāhauwera representative, as Bonny is on Maternity leave.

1.2 Governance update

Iain Maxwell, Resource Management Group Manager at HBRC is replacing Graeme Hanson, because Graeme has left HBRC.

Charles Dougherty will join the Governance team. Charles is also the Chair of the Hawke's Bay Biodiversity Foundation. Bringing him into the team will strengthen links between the projects and the Hawke's Bay Biodiversity Strategy and allow for a smooth transition to allow the projects and Predator Free Hawke's Bay to sit under the Hawke's Bay Biodiversity Foundation.

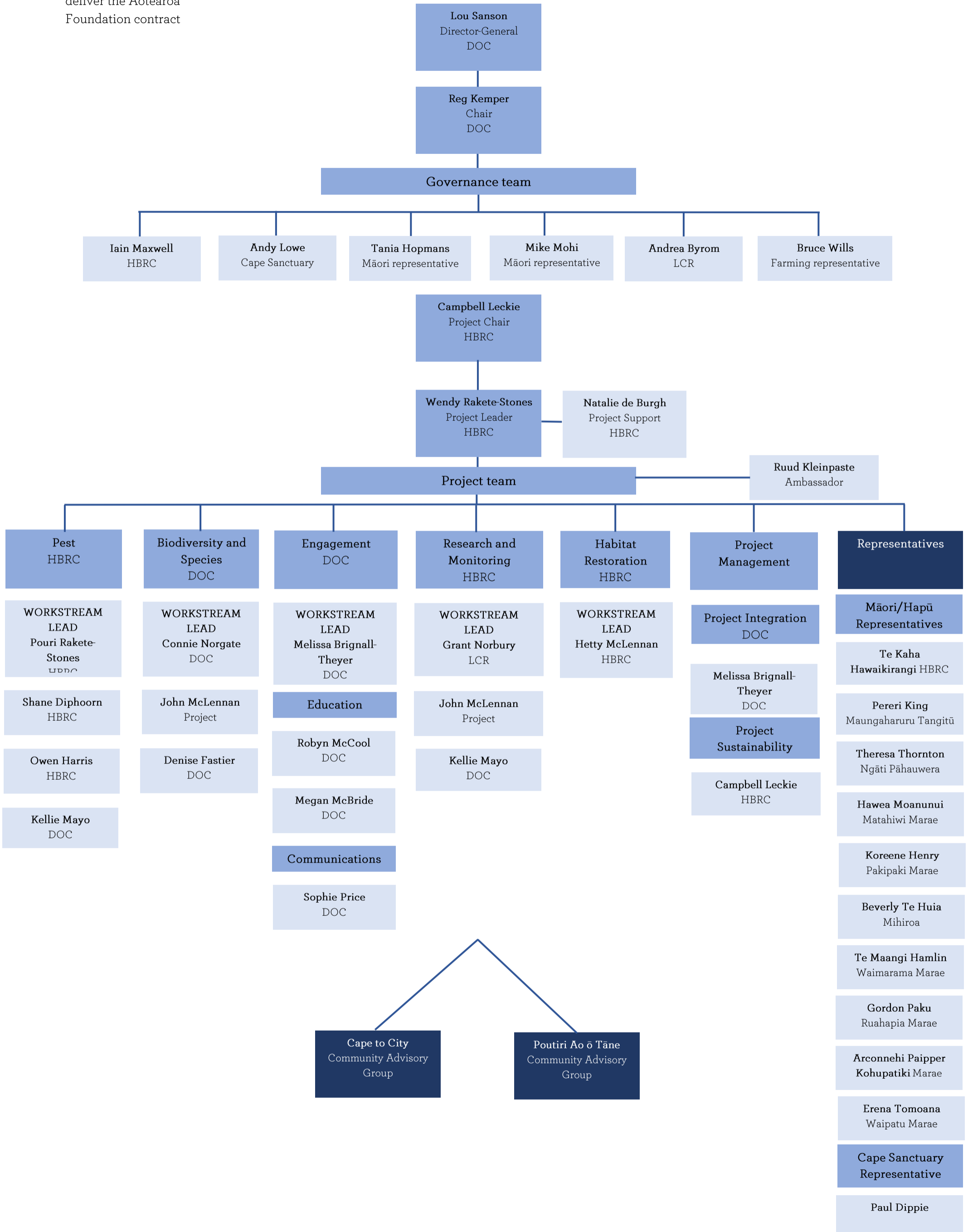
1.3 Milestone update

There are three 2018 milestones that the project team would like to make changes to: The kiwi translocation, bat monitoring and graduating 30% of farmers to maintenance of predator control:

- **Kiwi:** The project team would like to re-locate this translocation to Mahia, into the Predator Free Hawke's Bay Possum eradication and predator suppression area, where risks of reinvasion are much lower and additional support from other stakeholders and funders is likely to be higher.
- **Bats:** After much consideration and expert advice it is looking like the cost of bat monitoring will be prohibitive and will outweigh any environmental and project benefit in this area. We are still discussing this, but want to highlight that the team may request to remove this milestone in the December milestone review.
- **Graduating farmers:** The project team would like to remove 'graduating 30% of farmers to maintenance of predator control' by the end of 2018 and keep the 2019 milestone, which is graduating 50% of landowners. The reason for this change is to make sure that the trapping data-capture technology is fit for purpose when we begin graduation of landowners. It is anticipated this technology will be ready by early 2019. If the project team tries to graduate farmers without having the technology fit for purpose, we risk the reputation, integrity and ongoing sustainability of the project.

Cape to City and Poutiri Ao ō Tāne Project structure

Figure 1: Project structure to deliver the Aotearoa Foundation contract



1.4 Community advisory group update

The Poutiri Ao ō Tāne community advisory group has met a couple of times in the last six months. This group has developed a new vision to match the community aspiration of being a project which goes from Mountain to sea. The vision is: *Kia Haruru a Maungaharuru, Kia ukiuki a Tangitū, Whakari ora a Papatuanuku. From Maunga to Moana flourishes an environment for future generations to enjoy.*

The Cape to City community advisory group met in April and went on a field trip around the Cape to City footprint. The group really enjoyed this and provided them with a deeper context about the project.

1.5 Big picture update

Predator Free 2050 and Predator Free Hawke's Bay.

The last six months have been exceptionally busy for the project team. An intensive period preparing material, submitting it to and negotiating with PF2050 Ltd has resulted in \$1.6m funding for the first four years of PFHB. This funding package is focused on Cape to City, Poutiri Ao ō Tāne and Mahia peninsula. A significant amount of the investment is in learning how to do possum eradication on farmland in Mahia between 2018-2020. The learning over the next three years then being applied into beginning farmland possum eradication in 2021 in Cape to City. The intention that this would be a significant expansion of Cape to City and the beginning of Hawke's Bay's regional possum farmland eradication programme. This is another key phase in the projects lifecycle as the eradication of possums will set up the transition to feral cat and mustelid control.

Zero Invasive predators (ZIP).

The team have been engaging closely with the ZIP team over the last six months. We are now in a discussion about having access to a range of their technology to apply into a farmland context to help the delivery of possum eradication. This includes critically access to their wireless trap monitoring technology which is easily the most advanced in New Zealand. This is a valuable partnership as it allows the team to be aware of and plan for the most cutting-edge predator control technology available in New Zealand.

Tangata Whenua.

The team have been actively increasing their engagement with Tangata whenua within the project. In the next phase of the project this will include co funding a couple of cadetships for hapū associated with the projects.

Connected to Nature – Air New Zealand Environment Trust proposal

An environmental education proposal was submitted to the Air New Zealand Environment Trust earlier this year. This proposal was successful, and the stakeholders have been granted \$410,000 over three years to develop outdoor learning spaces in Hawke's Bay and to deliver teacher training programmes which support teachers (pre and post service) to use the environment as a context for learning throughout the curriculum.

Regional Pest Management Plan

The Hawkes Bay Regional Pest Management plan (RPMP) has been set up to provide a policy and statutory process for securing the gains made in Poutiri Ao ō Tāne and Cape to City predator control over the last eight years. The RPMP also includes the ability to have possum eradication areas which will set the foundation for the incremental roll out of possum eradication in 3-4 years' time. This use of the RPMP to create Predator Control Areas and Possum Eradication Areas is a first in New Zealand.

Long Term Regional Council Plan (LTP)

The LTP sets councils funding for a ten year period and is a significant strategic investment document prepared in consultation with the community. In this LTP Council have committed an additional \$4m over the ten year LTP or \$400,000 per annum to regional predator control as a result of the work done in Cape to City and Poutiri Ao ō Tāne.

1.6 Māori engagement

Kaumatua Trevor Taurima gave a presentation about Poutiri Ao ō Tāne at the Ngāti Kahungunu Fishhook summit (<https://www.kahungunu.iwi.nz/e--fish-hook>) to share the project with the wider iwi community.

Trevor has also been organising a Hikoi Tutuki (discovery and learning walks) programme to enable hapū and community to re-connect with the whenua (land) stories and Poutiri Ao ō Tāne and Cape to City. The first of these is due to start in August at Lake Tutira and will include planting native species around the lake shore. These were due to start in February, but due to bad weather the Hikoi has been postponed twice.

A Research hui (meeting) was held in Lincoln at Manaaki Whenua – Landcare Research in March. Four hapū representatives were involved in this hui.

The projects from a Māori perspective

Maungaharuru-Tangitū

Maungaharuru-Tangitū Trust continue to actively contribute to the direction of the project at all levels of the movement. With a continued and combined effort on the ground, the Trust is active in the restoration of Lake Tutira and Maungaharuru in seeking to create more habitat for the taonga species and provide opportunity for members of the hapū to actively participate in the restoration of the environment.

With two trust representatives in attendance at the Manaaki Whenua research hui, the opportunity to add a mātauranga Māori perspective into forward thinking was valuable for all stakeholders.

The trust in partnership with DOC have a hapū ranger where the synergies of cultural philosophies are being applied in the activities of Poutiri Ao ō Tāne and Cape to City, in particular through education.

Leadership contributions have continued into the launch of PFHB with the trust contributing resource to continue building capability and capacity and habitat for our taonga.



Kaumatua Trevor Taurima giving a presentation about Poutiri Ao ō Tāne at the Ngāti Kahungunu Fishhook summit. *Photo: Jarrod Wilkinson-Smith*

2. Workstream update: 1 January – 30 June 2018

This section outlines progress on the activities and objectives outlined in Attachment 1 of the Aotearoa Foundation contract. These are separated into five workstreams: research and monitoring; community engagement and education; biodiversity and species; habitat restoration and pest control. **Table 1** summarises progress in each workstream.

Table 1: Progress on 2018 activities

Workstream	Number of activities	% complete
Research and monitoring	6	75
Community engagement and education	5	60
Biodiversity and species	6	65
Habitat restoration	2	100
Pest control	6	58

Significant risks and opportunities are reported under each workstream. These have been kept the same as the August 2015 interim report so that progress can be measured against them. New risks and opportunities have been added as appropriate. The full list of risks and opportunities (as provided in the August 2015 interim report) can be viewed if required.

2.1 Research and monitoring

The research and monitoring workstream is led by Manaaki Whenua/LCR. There are four strands to this research: pests, indigenous biodiversity, social research and economic research. This work is substantially delivered through milestones described in two contracts: one between LCR and HBRC, the other between HBRC and John McLennan (private consultant).

2.1.1 Progress towards outcomes



A motion sensitive camera used for monitoring predators. *Photo Al Glen*

Highlights:

- A Research meeting was held in Lincoln at Manaaki Whenua – Landcare Research in March. Research projects over the last year were presented which led to discussions about future research projects under Te Matau a Māui.
- A report on socially-acceptable compliance monitoring system for predator monitoring was completed. It highlighted that if motion sensitive cameras were to be used as a compliance tool for landowners keeping predator numbers at very low levels, it could only be used as a compliance tool in properties over 500ha.
- A report was completed on the need for a national framework for predator monitoring using trap-catch data. Trap-catch data is often used for monitoring as it is a low-cost easy option, but it is not a standard, or recommended method. This report addressed the need for standardised design, collection and management of trap-catch data to ensure they are utilised consistently, so that questions such as: does trapping at one site have benefits for adjacent sites? can be answered.
- An agreement was obtained with TrapNZ (a trap catch data capture tool) to include outcome monitoring data. This will allow production of relationships between pests and their impacts.

Table 2: Progress on research and monitoring milestones

Milestone	2018 activity	Update	% complete
Research outputs.	A minimum of three research outputs, two of which are submitted to peer-reviewed journals.	<p>Research outputs since the beginning of Te Matau a Māui:</p> <ul style="list-style-type: none"> • 9 research articles published in science journals • 7 manuscripts (either submitted or drafted) • 30 conference presentations • 35 unpublished reports • 5 public lectures • 5 newsletter articles • 2 PhD Theses 	100
Methods of monitoring introduced mammalian predators before and after control.	No 2018 milestone		NA
Decision-analysis models for predicting the most cost-effective trapping configurations for managing introduced predators over large areas.	Gather sub-sample predator movement data (from trapping / telemetry) to determine optimal trap spacing.	<p>This milestone was completed in 2017 as part of developing an online decision-support tool called TrapSim to simulate trapping of target predators.</p> <p>https://landcare.shinyapps.io/TrapSim_C2C/</p>	100

Milestone	2018 activity	Update	% complete
Increase in skinks, geckos and native invertebrates in the Cape to City area; continued increase in skinks, geckos and native invertebrates in the Poutiri Ao ō Tāne area.	Continue Poutiri Ao ō Tāne and Cape to City monitoring (Poutiri Ao ō Tāne monitoring times may be extended).	Predator monitoring has shown an increased predator abundance in Poutiri Ao ō Tāne and a corresponding decline in lizards and invertebrates since the Wide scale predator control (WSPC) was reduced to only 4 checks per year. Discussion is ongoing to decide if WSPC checks should be increased to determine level of checks needed to suppress predators and increase biodiversity. This is part of a wider discussion about the WSPC at Poutiri Ao ō Tāne.	50
Analysis and reports on the integrated economic benefits of Te Matau a Māui.	No 2018 milestone		NA
Decrease of toxoplasmosis-related lamb abortion rates. Because of research and reduction in cat numbers, vaccinations will no longer be necessary, leading to significant economic benefits to the region and nation.	Produce a detailed mid-programme research review.	This milestone was completed in 2017 and is reported on in the February 2018 Interim report	100

Milestone	2018 activity	Update	% complete
Use of restored habitat by native wildlife.	Conduct occupancy assessment of key indicator species.	A report has been completed on strategies to promote localised planting of the right plants in the right places to maximize benefits for biodiversity. This includes the management context and lessons to foster uptake in other parts of Hawkes Bay and other regions	100
Student participation.	Engage two tertiary students in the project per annum.	There will be some students engaged in the second half of this year	0
Increasing the participation in pest management and ecological restoration by landowners and the community.	No 2018 Milestone		NA

Note: research progress is also reported in other workstream updates.

2.1.2 Significant risks update

Original Insufficient pest-control intensity to achieve desirable biodiversity outcomes is a potential risk that will be mitigated by monitoring and adaptive management.

Update Research continues into pest density impact functions to address this issue. *No change to this update*

2.1.3 Significant opportunities update

Original Working closely with the Biological Heritage National Science Challenge (BHNSC).

Update We continue to work closely with the BHNSC with the Director on the Governance team.

Original LCR is considering aligning another of its core research portfolios ('Enhancing biodiversity') to Te Matau a Māui. This work is in progress.

Update Research from the Enhancing Biodiversity portfolio continues to be aligned with the project through the 2017/18 LCR contract and will continue into 2018/19.

2.2 Community engagement

This workstream is led by DOC – but with significant input from other project partners because it is intimately linked to all other workstreams. The workstream has three strands: education (school and curriculum-based), communications, and community engagement in general.

2.2.1 Progress towards outcomes



Te Maangi Hamlin being filmed for the Cape to City and Poutiri Ao ō Tāne short film.

Photo: Melissa Brignall-Theyer

Highlights:

- The evaluation of the education programmes was presented at the New Zealand Association for Environmental Education conference in May. This presentation was well received, and the report is a good foundation for future research in this area.
- A collaborative funding proposal to expand on the teacher training work the education coordinators deliver with EIT was developed for the Air New Zealand Environment Trust. This proposal was successful. The partners involved are now working with the Trust to finalise the details.
- Cape to City and Poutiri Ao ō Tāne were showcased in the DOC pavilion at Fieldays, which is the largest agricultural show in Australasia. This included a film which was part of the display <https://www.youtube.com/watch?v=HLJWAZ2GFvk&feature=youtu.be>

Table 3: Progress on community engagement and education milestones

Milestone	2018 activity	Update	% complete									
A marked increase in the number of volunteers participating in the programmes over the next 5 years.	A measured increase in volunteer hours trending upward	<p>There was significant volunteer effort in the kōrure translocation at Poutiri Ao ō Tāne.</p> <p>The volunteer effort in Cape to City has been mostly through supporting the education programmes.</p> <p>Volunteer hours (to June 2018)</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>2017</th> <th>2018</th> </tr> </thead> <tbody> <tr> <td>Poutiri Ao ō Tāne</td> <td>2,388</td> <td>1100</td> </tr> <tr> <td>Cape to City</td> <td>464</td> <td>14</td> </tr> </tbody> </table>		2017	2018	Poutiri Ao ō Tāne	2,388	1100	Cape to City	464	14	50
	2017	2018										
Poutiri Ao ō Tāne	2,388	1100										
Cape to City	464	14										
Increased involvement of schools in the various conservation initiatives.	Develop a forum or process, in conjunction with schools, to transition school support from Cape to City from being actively managed to being confident at using the environment as a context for learning in the long term.	<ul style="list-style-type: none"> • Two teacher professional development workshops were run. One with Early childhood trainee and practicing teachers and the other was a whole school workshop with staff from Napier Intermediate school. • A seminar/workshops was run at the Hawke’s Bay Environmental Education Forum. • Three workshops were run with teacher trainees in the EIT Bachelor of primary teaching course. • The Bush programme has been run with 50 students and four teachers from Richmond school. 	50									

Milestone	2018 activity	Update	% complete
Communications strategy.	Implement communications strategy.	<ul style="list-style-type: none"> In the last six months there has been at least one Facebook post per week, 7 newspaper articles, TV and radio articles, 3 Blogs and 3 magazine/newsletter articles (Appendix 3). The kōrure translocation generated a lot of media interest. 	50
Through the social engagement strategy and communication plan, the Hawke's Bay community will value the importance of biodiversity and act accordingly, so that sustainability behaviours become part of the social norm.	Secure a minimum of \$400,000 to match the final year's investment by Aotearoa Foundation.	<ul style="list-style-type: none"> The new initiative Predator Free Hawke's Bay has a total budget of \$4.86m total over 4 years with \$1.62m Predator Free 2050 Ltd investment. A funding proposal to the Air New Zealand Environment Trust for education using the environment as a context for learning, was successful in securing \$410,000 over three years. 	100
	Review and implement community engagement strategy.	<ul style="list-style-type: none"> The projects were showcased at the National Fieldday's event. Kaumatua Trevor Taurima presented Poutiri Ao ō Tāne at the Kahungunu Fishhook summit. Cape to City education coordinators had a Cape to City table at the Fish and Game kids day 	50
	No 2018 milestone		

2.2.2 Significant risks update

- Original If we do not engage iwi in a meaningful way we risk losing a key partner and jeopardising the success of the project. We therefore need to formalise engagement with iwi at a communication and participation level, and make sure engagement is genuine and visible in all our communications. A Māori engagement strategy is being developed.
- Update The project team has now engaged with all marae affiliated with Cape to City. These marae are in varying stages of committing a marae representative to the project. *No change to this update*
- Original There is a lot of interest and excitement about the education programmes. This has created many opportunities for links and involvement outside the project milestones. The risk is that the project team starts working in areas outside the project's deliverables and is unable to meet the contracted deliverables due to resource and time constraints. This risk is being mitigated by assessing all opportunities as a team.
- Update All staff involved in the community workstream are now very good at working within scope. All opportunities are discussed by the whole project team so opportunities can be prioritised. *No change to this update.*
- New (January report) Delivering the education milestones would be at risk if, for some reason, the project lost the education coordinator. This risk will be mitigated by setting up systems to make it easy for someone to take over in the coordinator's absence, and by teaching other team members some of the necessary skills.
- Update A part-time coordinator has been employed to support Robyn McCool. *No change to this update.*

2.2.3 Significant opportunities update

- Original An initial presentation and meeting with EIT teacher training faculty staff and students has provided an opportunity to link the teacher training programme with Cape to City. This is a significant step towards the 2017 milestone 'Engage a minimum of six schools in the Cape to City project plus at least one tertiary institute initiative'.
- Update An MOU between the project and EIT has been signed and is now being implemented. The project and EIT have also been successful with a grant from the Air New Zealand Environment trust to create outdoor learning spaces for teachers and trainee teachers to enable them to become confident in using the environment as a context for learning
- Original The Community Conservation Partnerships Fund (\$26 million over 4 years), administered by DOC, is a significant opportunity for community groups to receive funding and align themselves with. Proposals are being considered.
- Update Projects already funded continue. The Maraetotara Tree Trust has just been awarded further funding under the DOC Community Fund. *No change to this update*

2.3 Biodiversity and species

This workstream is led by DOC, but has significant input by John McLennan and LCR. There are two main strands: species reintroductions and biodiversity monitoring.

2.3.1 Progress towards outcomes



A kōrure chick in its burrow on Whenua Hou/Codfish Is. *Photo: Kelly Eaton*

Highlights:

- Late December 2017 an adult tītī/Cook's petrel returned. This tītī was later caught and the leg band confirmed that it was one which had been translocated to Poutiri Ao ō Tāne. This bird was named Waitangi, as it was caught on Waitangi day. In January 2018 an adult kōrure/mottled petrel returned. These two returning birds are hopefully a sign of more to come in the next few years. Maungaharuru is the most inland site (23km from the coast) for seabird translocations, so this is a great sign that this type of translocation is possible.
- The final kōrure translocation was held in April. Between 2014 and 2018, 368 kōrure have been successfully translocated from Whenua Hou.
- The toutouwai/robin population in 100 acre Bush has flourished. Unbanded toutouwai now greatly outnumber banded ones, showing that several generations of toutouwai have been produced since release. The total population in 100 acre Bush is also increasing rapidly, reflected in both the number of toutouwai detections in standard bird counts, and by increasing spill over into bush patches elsewhere on the Maraetotara Plateau.

Table 4: Progress on biodiversity and species milestones

Milestone	2018 activity	Update	% complete
Reintroduction and re-establishment of kōrure /mottled petrels.	Translocations with systematic refinements of husbandry techniques continue. Camera monitoring initiated at Maungaharuru to detect returning adults.	99 kōrure were translocated in April. 96 successfully fledged. Three died – two due to mishandling of a volunteer and one was found dead next to the fence with the cause of death unknown.	90
Increase in the abundance of introduced and native birds that are already present in the area.	Continue bird monitoring with annual data analysis.	More than 2000 baseline counts have now been obtained, spanning three consecutive years, enabling ‘natural’ year-to-year variations in bird abundance to be measured and distinguished from those caused by top-predator control in the footprint area.	50
Reintroduction and establishment of several threatened bird species into the Cape to City area. Some species will spread from Cape Sanctuary; others will be reintroduced and actively managed until self-sustaining.	Continue monitoring of outflow from Cape Sanctuary; analyse species data to determine extent of spread through wider landscape.	Reports from landowners and the general public show that endangered species of Cape Sanctuary origin continue to trickle out into the surrounding landscape, with some sightings in the footprint area. Toutouwai have already successfully established a small population in the northern end of the footprint - the first endangered species to do so as a result of natural outflow from Cape Sanctuary. Pāteke are likely to be next.	50

Milestone	2018 activity	Update	% complete
Successful re-establishment of North Island brown kiwi onto the Maraetotara plateau in the Cape to City footprint.	No 2018 milestone	The project team would like to re-locate this translocation to Mahia, into the Predator Free Hawke’s Bay Possum eradication and predator suppression area, where risks of reinvasion are much lower and additional support including from other stakeholders and funders is likely to be higher	NA
Successful re-establishment of whio/blue duck on the Maraetotara River (subject to risk analysis and resourcing). Successful colonisation of ponds and wetlands by pāteke in the Cape to City and Poutiri Ao ō Tāne areas.	If funding is sourced and in-depth analysis provides recommendation to proceed, catch and radio-tag wild whio adults to identify nest locations. Collect whio eggs to be hatched and raised to fledging age in captivity	A whio expert, Andy Glazier assessed the Maraetotara river suitability for whio. He reported two main issues: 1. The river is too silty and will only improve with more riparian planting; 2. The nearest wild population is too far away to maintain genetic diversity. The project team have decided not to continue with this milestone, as these two issues mean translocation is not feasible at this time.	100
Improvement in the numbers of long-tailed bats inhabiting Mohi Bush.	Monitor bat population.	After much consideration and expert advice it is looking like the cost of bat monitoring will be prohibitive and will outweigh any environmental and project benefit in this area. We are still discussing this, but want to highlight that the team may request to remove this milestone in the December milestone review.	10

Milestone	2018 activity	Update	% complete
Reintroduction and re-establishment of kōrure/mottled petrels, tītī/Cook's petrels, kākā, kākārīki, and pāteke in the Poutiri Ao ō Tāne area.	Transfer and successfully fledge petrels.	<ul style="list-style-type: none"> • 99 kōrure were translocated in April. 96 successfully fledged. • Over the Christmas New Year period one adult kōrure and one adult tītī returned • kākārīki will be translocated in September as long as rat numbers remain low • Pāteke are still breeding at Opouahi 	90

2.3.2 Significant risks update

Original It is yet unknown what level of predator control is sufficient for survival of pāteke and whio; there is therefore a risk that control cannot be achieved to levels supporting the survivability of these species. This will be managed through monitoring and adaptive management.

Update After review, it was concluded that it would be unwise to release more pāteke while the current level of predator control is in place. Increasing predator control at this stage would interfere with the Wide scale predator control experimental design. *No change to this update*

The species team has advised that we should make sure adequate control and planning is put in place for kiwi translocation.

Original If adequately sized founder populations cannot be achieved due to limited numbers of source birds, the project is at risk of not reaching sustainable populations in the release area.

Update This is a long-term risk and can be planned for. *No change to this update*

2.3.3 Significant opportunities update

Original Techniques developed for petrel translocations will enable further populations to be established elsewhere in New Zealand.

Update Rachael Sagar's PhD, which will inform this opportunity, is still to be completed. *No change to this update.*

2.4 Habitat restoration

This workstream, led by HBRC, is focused on restoring native habitat and water quality through planting.

2.4.1 Progress towards outcomes



Planting at the Maraetotara River. *Photo Ben Douglas*

Highlights:

- The majority of the milestones in this workstream are completed. Maintaining the planting areas to ensure plant survival and effective restoration are now the focus.

Table 5: Progress on habitat restoration milestones

Milestone	2018 activity	Update	% complete
Improved water quality in the Maraetotara River following stock exclusion and riparian revegetation.	Confirm and implement water monitoring programme.	Water monitoring is carried out under state of the environment reporting by Hawke's Bay Regional Council	100

Milestone	2018 activity	Update	% complete
Increase in native habitat in the Cape to City area.	Ensure a minimum of 50,000 plants planted within project footprint by partners or community groups.	<p>This milestone was completed in June 2017 and reported on in August 2017 interim report.</p> <p>However, an additional 26,000 plants are going in the ground this winter bringing the total planting to 253,000.</p> <p>Maintenance of areas planted continues plus: 1. The Maraetotara Tree Trust has been doing infill planting, 2. Willow removal continues, and 3. the Waipuka planting through the Million Metres Streams programme will be completed this winter.</p>	100
Enhancement of DOC's efforts on public land through landscape-scale ecological restoration on private land.	No 2018 milestone	LCR produced a report about identifying the type of data that needs to be collected on Public Conservation Land and adjacent land to understand the mutual putative benefits of predator Control. This report highlighted the need to collect consistent data throughout the country.	NA

2.4.2 Significant risks update

- Original Not delivering maintenance after planting is a risk that often turns into a reality due to lack of resources for weeding, watering and other maintenance. This is being managed with effective planning and resource allocation.
- Update DOC 'Dirty Dozen' funding is delivering \$30,000 for old man's beard and banana passionfruit control to the Maraetōtara. The Maraetōtara Tree Trust has also been awarded DOC community funding to infill past plantings. This planting is currently underway.
- Original Lack of landowner cooperation is another risk; this will be managed through landowner/council agreements and by forming solid relationships with landowners and community groups.

- Update Landowner support is growing as the results of the Maraetotara Tree Trust and Cape to City plantings become more and more visible. Likelihood of being required to fence off (due to HBRC plan changes) is helping increase landowner interest in being involved in programme. *No change to this update*
- New (Aug 2017 report) The myrtle rust incursion has the potential to restrict new and existing plantings of mānuka. Scion, and Plant and Food Research have launched a research programme, but the effects of the rust are unclear at this stage as the research is not complete. *No change to this update*

2.4.3 Significant opportunities update

- Original HBRC is working on a partnership with Million Metres Streams for Maraetotara River as part of the project. This organisation raises money through sponsorship for riparian restoration.
- Update There have been two successful Million Metres Streams projects, highlighted in previous reports. No more Million Metres Streams projects are being planned at this stage.
- New (Feb 2017 Report) There is an opportunity to establish mānuka for honey production on erodible land (classes 6 and 7) within the footprint. Planting mānuka will provide important habitat and erosion control. This is a partnership between HBRC, Kauri Park, AGS (Afforestation Grant Scheme) and landowners.
- Update The mānuka site on Taurapa Station is growing well
- New (Feb 2018 Report) Waimarama Marae applied to the Ministry for the Environment Community Environment Fund for a planting project on the Waingongoro Stream. This application was successful and so Cape to City will partner with the marae by organising HBRC willow removal and funding weed control prior to planting. The decision to be due in February.
- Update Funding was approved and so Cape to City will partner with the marae to support willow removal.

2.5 Pest control

Although led by HBRC, this workstream has substantial input from LCR. It covers wide-scale suppression of predators within Poutiri Ao ō Tāne and Cape to City.

2.5.1 Progress towards outcomes



Mustelid podiTRAP with wireless node. *Photo: Pouri Rakete-Stones*

Highlights:

- The initial control in Cape to City using live capture has been completed and the kill trap network is being maintained by the project team. Monitoring of predator abundance will also continue to ensure the trapping network is maintaining low levels of predators.
- Intensive year-round rat control continues in three forested areas in the Cape to City footprint area, including 100 acre Bush, the site where translocated robins were released in 2016 and 2017. Efforts are currently underway to expand the rat control programme on the Plateau, to aid the spread of robins across the wider landscape.

Table 6: Progress on pest-control milestones

Milestone	2018 activity	Update	% complete
<p>High-level landowner participation in pest control in the Cape to City area.</p> <p>'In principle' agreement among participating landowners to continue predator control beyond timeframe of the programme.</p>	<p>Obtain voluntary agreements.</p>	<p>Voluntary agreements have been obtained from all Landowners.</p>	<p>100</p>

Milestone	2018 activity	Update	% complete
A marked reduction in introduced predators in the Cape to City area.	Begin graduating 30% of farmers to maintenance of predator control and continue initial control.	<ul style="list-style-type: none"> • Initial live capture control has been completed. • The project team would like to remove 'graduating 30% of farmers to maintenance of predator control' by the end of 2018 from this milestone and keep the 2019 milestone, which is graduating 50% of landowners. The reason for this change is to make sure that the trapping data capture technology is fit for purpose when we begin graduation of landowners. It is anticipated this technology will be ready by early 2019. If the team tries to graduate farmers without having the technology fit for purpose, we risk the reputation, integrity and ongoing sustainability of the project. • Research continues into synthesising ferret odour as a long-life lure. 	50
Use of wireless trap networks to optimise control.	Optimise wireless trap networks within Cape to City as a template for very large-scale use.	The project team is currently reviewing the best wireless product moving forward. This technology is advancing rapidly, with additional suppliers in the market and the team wants to ensure we have the best technology for larger scale use, as well as to meet the MPI live capture requirements. The team has learned a lot from the trials about usability for landowners and using wireless in a farmland context.	50

Milestone	2018 activity	Update	% complete
Examination of the long-term effectiveness and reliability of self-resetting traps for rat control in Boundary Stream mainland island.	Reduce checking frequency to two times per year and monitor rat density.	Rat tracking tunnel rates went from 2% in February 2018 to 13% in May 2018. This increase was disappointing because it had stayed below 6% since September 2016.	50
Sustained suppression of introduced predators at low densities in the Poutiri Ao ō Tāne pest control area.	Continue contractor control at reduced control intensity.	Predator monitoring has shown an increase predator abundance in Poutiri Ao ō Tāne since the wide scale predator control (WSPC) was reduced to only 4 checks per year. This is a reflected in an increase in trap catches which is also being reflected throughout NZ. Discussion is ongoing to decide our response moving forward to suppress predators and increase biodiversity. This is part of a wider discussion about the WSPC at Poutiri Ao ō Tāne	50
Demonstration that effective ongoing predator control in the Cape to City area can be undertaken for less than ~\$3/ha.	No 2018 Milestone		

Milestone	2018 activity	Update	% complete
Demonstration that the cost of predator control can be met by transferring resources from possum control programmes, while still maintaining possums at low densities.	No 2018 Milestone		
Operational monitoring for predator control.	Undertake monitoring.	Monitoring using motion-sensitive cameras continues.	50

2.5.2 Significant risks update

Original The perception that rabbits increase after predator control is a risk that will be mitigated with good communications and research. LCR has published a scientifically credible review that demonstrates rabbit numbers are driven by bottom-up influences such as climate, disease and pasture growth, rather than by predators.

Update There are two landowners with high rabbit numbers. The project and governance teams decided not to do predator control on the two properties, but to maintain a cat-trapping buffer around the properties to control reinvasion into the treated area instead. Monitoring of rabbits will continue; these properties are being considered for a new calici-virus trial in 2017. *This will be 2018 now because the virus was not permitted in time for release in 2017. No change to this update.*

Original To get biodiversity and economic gains (through reduction in toxoplasmosis) we need to control feral cats. This is an emotive subject in New Zealand and there is the risk that a farm or domestic cat gets caught, prompting negative media coverage. To manage this risk, we have a communications plan in place, and traps will be placed where they are least likely to trap farm or domestic cats. Where the risk of catching pet cats is high (e.g. around urban areas) live-capture cage traps will be used.

Update Buffer zones for kill-traps have been created around landowner dwellings. As part of the roll-out, vets and the SPCA were consulted and landowners were offered the chance to have their domestic cats photographed and/or microchipped. If landowners are concerned, they can put their cats in a cattery. *No change to this update.*

2.5.3 Significant opportunities update

Original	Initial meetings have been held with Zero Invasive Predators (ZIP) and the Biological Heritage National Science Challenge (BHNSC) to align appropriate parts of each project, or learn from the work these groups are doing.
Update	<ul style="list-style-type: none">• The project team and ZIP will partner under Predator Free Hawke's Bay to deliver possum eradication at Mahia.• The project continues to work in partnership with the BHNSC.
New (Feb 2017 report)	In July 2016 PF2050 was announced. Cape to City was used as an example in the announcement and has a very good chance of benefitting from PF2050.
Update	The Predator Free Hawke's Bay proposal was successful and was signed off in late June 2018. This is a \$4.86M project over four years.

3. Work planned for 1 June – 31 December 2018

3.1 Research and monitoring

- Monitoring predator, lizard and invertebrate populations
- Baseline eDNA surveys of invertebrates in Manuka
- Formulating restoration goals with Maungaharuru ki Tangitū hapū
- Continuation of the Te Matau a Maui Case study
- Rural and wider community surveys (although might be delayed)
- Once the 18/19 contract is finalised there will be quite a lot more projects starting or continuing

3.2 Community engagement and education

- Early Childhood Educators workshop
- Seminar at EIT symposium
- Hikoi Tutuki
- A&P show

3.3 Biodiversity and species

- Kākāriki translocation
- Monitoring seabird return
- Bird monitoring and rat control continues in Cape to City
- Wetlands in Cape to City will be searched this coming spring to determine if any breeding pairs of pāteke are present.

3.4 Habitat restoration

- Planting maintenance
- Willow removal

3.5 Predator control

- PAPP operation across the Poutiri Ao ō Tāne footprint targeting feral cats completed
- Planning, consulting and roll out of an additional 4,000 ha of predator control in Poutiri Ao ō Tāne to support the “Mountains to the sea” vision
- Optimisation of existing Poutiri Ao ō Tāne network across 8,000 ha
- Implement wireless kill trap network across 4,000 ha in Poutiri Ao ō Tāne
- Ongoing maintenance checks for existing networks in both Poutiri Ao ō Tāne and Cape to City

4. Conclusion

Over the last six months a lot of the project team effort has gone into securing funding so that all the knowledge gained in Poutiri Ao ō Tāne and Cape to City can be built on, extended and new initiatives developed. This effort has been rewarded with two successful grants: Predator Free Hawke's Bay was awarded \$1.62m from Predator Free 2050 Ltd over four years; Connected to Nature was awarded \$410,000 from the Air New Zealand Environment Trust over 3 years. Both these initiatives are collaborative projects and bring significant co-partner funding.

The project team have also been delivering the 2018 Te Matau a Māui milestones, which are 72% complete and on track to be completed by December.

There are three 2018 milestones that the project team would like to make changes to, or signalling changes: The kiwi translocation, bat monitoring and graduating 30% of farmers to maintenance of predator control (Section 1.3).

Some of the highlights over the last six months have been:

- Predator Free Hawke's Bay has been launched
- The projects have been presented in a variety of forums, from iwi summits to agricultural fieldays
- Education programmes were reviewed and presented at a national conference, and the Connected to Nature proposal with the Air New Zealand Environment Trust was successful.
- The final kōruru translocation was completed successfully, previously translocated seabirds have started returning to Poutiri Ao ō Tāne, and unbanded toutouwai are now being seen and heard outside their original release site on the Maraetotara plateau in Cape to City.
- An additional 26,000 plants are going in the ground this winter bringing the total planting in Cape to City to 253,000.
- Live capture knockdown of predators in Cape to City is now complete

In the next six months the project team will be very busy, not only completing the 2018 Te Matau a Maui Milestones, but also getting 'Predator Free Hawke's Bay' and 'Connected to Nature' up and running.

5. Appendix 3: Project outputs so far

Workstream	Title	Status	Description	Interim report date
Community engagement	<i>Backyard Biodiversity</i> teachers' resource for primary and intermediate school students (years 5-8)	Published	Teacher resource that is part of the Backyard Biodiversity education programme.	August 2015
	Cape to City on Nature Watch naturewatch.org.nz/projects/cape-to-city	Published	Cape to City set up as a project on the Nature Watch website.	August 2015
	Project pledges \$6 m for conservation	Published	<i>Hawke's Bay Today</i> 18 December 2014 – article about Te Matau a Māui signing.	August 2015
	Redressing human impact	Published	<i>Hawke's Bay Today</i> 18 December 2014 – editorial about Te Matau a Māui signing.	August 2015
	Hawke's Bay TV presentation	Published	Campbell Leckie gave a presentation on Hawke's Bay TV in June 2015 about Cape to City.	August 2015
	Nature corridor	Published	Short article on Cape to City in May 2015 issue of Bay Buzz magazine.	August 2015
	Back to the way it was	Published	Article on Cape to City in the <i>Profit</i> Magazine – May 2015 issue.	August 2015
	Cape to City on Facebook www.facebook.com/capetocity	Active	Cape to City Facebook page set up.	August 2015
	Trustworthy Biodiversity measures www.landcareresearch.co.nz/science/plants-animals-fungi/animals/birds/biodiversity-measures/research-updates	Published	Highlights the results from the Building Trustworthy Biodiversity Measures focus groups.	August 2015

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Andy Lowe gave a speech at the Deer Industry Conference www.youtube.com/watch?v=tARC D82ACy8 (4 hr 14 min)	Published	Link to Andy Lowe's speech at the Deer Industry Conference in May 2015.	August 2015
	Sir Jerry visits Sanctuary	Published	<i>Hawke's Bay Today</i> , 11 June 2015, p 5: Governor-General visited Cape Sanctuary with Andy Lowe and Ruud Kleinpaste; a small part of the article is about Cape to City.	August 2015
	Hawke's Bay DOC update	Completed	Dave Carlton gave a talk to the Napier branch of Forest & Bird about DOC, but focused on Te Matau a Māui.	August 2015
	Pushing for a predator-free New Zealand	Published	<i>Hawke's Bay Today</i> , 4 July 2015, pp.12-13. Double-page spread of articles about Cape to City.	February 2016
	Cape to City website	Active	http://capetocity.co.nz/	February 2016
	Radio article – Rod Dickson interviewed	Published	Radio New Zealand article on morning rural news, 5 November 2015, about Cape to City (forward to minute 1.28). http://www.radionz.co.nz/audio/player/201777443	February 2016
	Te Matau a Māui: Māori Communications and Engagement Strategy (Draft)	Draft	Draft Māori Communications and Engagement Strategy.	February 2016
	Pair bring skills to work in Cape to City project	Published	Article in <i>Hawke's Bay Today</i> , 6 January 2016, p4 about the Sir Peter Blake Ambassadors.	August 2016
	Cape to City and Poutiri Ao ō Tāne: Education for our future	Published	An information brochure on the Te Matau a Māui Education programmes, to be distributed to parents and whanau, via schools engaged in the programmes.	August 2016

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Project document templates	Completed	A set of templates – Powerpoint, letter, factsheet and banners, designed by DOC’s Publishing team – to give all project documents across Te Matau a Māui (Cape to City and Poutiri Ao ō Tāne) a common ‘branding’ look that transcends those of individual projects and related agencies.	August 2016
	Backyard Biodiversity Teachers' Resource for Primary and intermediate school students (Years 5-8)	Published	DOC blog story about school programme done with Te Mata School.	August 2016
	Bugman helps in nature push	Published	Hawke’s Bay Today article, 5 March 2016, p.9, about education programmes.	August 2016
	Poutiri Ao ō Tāne and Cape to City overview talk	Presentation	Melissa Brignall-Theyer gave an overview talk to lower North Island Biosecurity Institute meeting – April 14 2016.	August 2016
	Cape to City Newsletter (winter 2016)	Published	Articles include: info from the rural survey, education programmes, mānuka, habitat restoration, cat trapping, toxoplasmosis and bringing nature back into peoples’ lives.	August 2016
	Digging deep to create a better world	Published	Article in <i>Hawke’s Bay Today</i> , July 2016, advertising the Clifton County Cricket Club planting day.	February 2017
	Planting for the future	Published	Article in <i>Hawke’s Bay Today</i> 25 July 2016, regarding the Clifton County Cricket club planting day.	February 2017
	Project overview talk	Completed	NETS conference presentation by Campbell, July 2016.	February 2017
	Project overview talk	Completed	Campbell and Wendy gave a talk at the BHNSC general meeting in August 2016.	February 2017
	Cape to City was included in Lou Sanson speech for Conservation Week 2016	Completed	Cape to City was included in Lou Sanson’s speech for Conservation Week 2016.	February 2017

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Poutiri Ao ō Tāne endorsed in Maungaharuru Tangitū newsletter Parikaranga, August 2016	Completed	Poutiri Ao ō Tāne endorsed in Maungaharuru Tangitū newsletter 'Parikaranga', August 2016.	February 2017
	Kaitiakitanga Hui at Waimarama	Completed	Hui held at Waimarama Marae 14 September 2016 to gauge how local Hapū want to be involved in Cape to City.	February 2017
	Kaitiakitanga Hui mentioned in Hawke's Bay today	Completed	Small piece on page 2 in the "what you need to know" section of <i>Hawke's Bay Today</i> , Thursday 15 September 2016.	February 2017
	Submission on the draft National Strategy for Environmental Education for Sustainability	Completed	Cape to City submission on the draft National Strategy for Environmental Education for Sustainability.	February 2017
	Cape to City and Poutiri Ao ō Tāne brochure	Brochure	Brochure with an overview of the projects to be used at events, etc.	February 2017
	Painting helps restore natives	Published	<i>Hastings Leader</i> p.5. Oct 19 2016. Article promoting Cape to City and Poutiri Ao ō Tāne involvement in the Hawke's Bay A&P show, and prints of 'Boundary Stream' by local artist John Staniford.	February 2017
	A closer look at Cape to City	Published	A DOC blog/ intranet story providing an introduction and overview of the Cape to City project. https://blog.doc.govt.nz/2016/10/31/cape-to-city/	February 2017
	Hawke's Bay A&P show exhibit	Completed	Cape to City and Poutiri Ao ō Tāne exhibit at the Hawke's Bay A&P show.	February 2017
	New Cape to City website	Completed	A revamp of the original Cape to City website to improve efficiency, design and user friendliness. Server relocated to HBRC (December 2016).	February 2017
	Cape to City overview talk	Completed	Campbell gave a talk at the New Zealand Association of Resource Managers conference (Napier). Audience of around 150.	February 2017
Cape to City overview talk	Completed	Campbell gave a talk at the Ecological Resilience Conference in Hamilton in November 2016.	February 2017	

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Spotlight: Cape to City, in New Zealand Biodiversity Action Plan 2016-2020	Published	Spotlight: Cape to City, in New Zealand Biodiversity Action Plan 2016-2020. There is an overview of Cape to City on p.35 of the action plan.	February 2017
	Tuku Whenua - gifting of treasured lands	Published	Media release about Maungaharuru Tangitu giftback week in Jan 2017, which included Poutiri Ao ō Tāne, http://community.scoop.co.nz/2017/01/tuku-whenua-gifting-of-treasured-lands/ Also on: https://blog.doc.govt.nz/2017/01/31/tuku-whenua/	Aug 2017
	Conservation at heart of community hui at Matahiwi Marae	Published	http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11850278	Aug 2017
	National bird survey starts today	Published	Media article about the New Zealand Garden bird survey: http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11881274	Aug 2017
	Cape to City overview talks by Campbell Leckie and Andy Lowe at the Crazy and Ambitious - biological Heritage National Science Challenge conference. May 2017	Completed	https://youtu.be/-PuaqoEK7xM	Aug 2017

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Cape to City overview talks by Campbell Leckie to various audiences	Completed	<ul style="list-style-type: none"> Parliamentary Commissioner for the Environment staff visit 13th December 2016 - Napier Business and innovation function 2nd March 2017 - Napier Environment and services committee (HBRC) 15 March - Napier Corporate services group (HBRC) 17 May - Napier Zero Invasive Predators 18th May - Wellington OMV Group 7th June - Wellington Minister for Research and Technology Paul Goldsmith 15th June - Napier Regional biodiversity Implementation group 15th June - Napier Annual pest contractors meeting 16th June - Napier 	Aug 2017
	Cape to City and Tumbleweed Ts partnership launched	Online	Cape to City and Tumbleweed tees went into partnership. Tumbleweed tees is a t-shirt company which sells t-shirts and gives some of the properties to conservation projects. https://www.tumbleweedtees.com/pages/long-tailed-bat-conservation	Feb 2018
	Volunteers Mulch in for tree planting scheme	Published	<i>Hastings mail</i> article page 7, August 2nd 2017	Feb 2018
	Cape to City bird relocation success	Published	<i>Hawke's Bay Today</i> article page 8, 23rd August 2017 http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11908713	Feb 2018
	EIT puts green values at core with partnership	Published	<i>Hawke's Bay Today</i> article 30 th Sept 2017 http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11928164	Feb 2018
	Predator Free by 2050 on Target	Published	<i>Hawke's Bay Today</i> 28th July 2017 http://www2.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11895429	Feb 2018
	Minister wants wider use of traps in Hawke's Bay	Published	<i>Hawke's Bay Today</i> 9 th Sept 2017 http://www2.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11918965	Feb 2018

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Conservation week Radio Kidnappers articles	Completed	Robyn McCool, Campbell Leckie and Melissa Brignall-Theyer were interviewed on Radio Kidnappers during Conservation week Oct 2017 on various parts of the projects.	Feb 2018
	Hawke's Bay A&P show exhibit	Completed	Cape to City and Poutiri Ao ō Tāne exhibit at the Hawke's Bay A&P show in October 2017	Feb 2018
	Transforming Biodiversity: Challenging the Boundaries Conference	Completed	Cape to City and Poutiri Ao ō Tāne conference 14-16 November 2017 http://www.capetocity.co.nz/conference/	Feb 2018
	Hawke's Bay showcases transformation for biodiversity	Published	<i>Hawke's Bay Today</i> article 22nd Nov 2017 http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11946397	Feb 2018
	Twitter Feed from Transforming Biodiversity Conference	Published	https://storify.com/NZBatman/transforming-biodiversity-challenging-the-boundari	Feb 2018
	Te Kaea, Māori TV episode including Poutiri Ao ō Tāne. Part of Conference	Published	Go to 18.47 min into the episode for the article http://www.maoritelevision.com/tv/shows/te-kaea/S14E320/te-kaea	Feb 2018

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Cape to City overview talks by Campbell Leckie to various audiences	Completed	<ul style="list-style-type: none"> • Biodiversity implementation planning group Napier – 3rd July • Ravensdown management team - 1st August • Biodiversity National Policy Statement working group • HBRC internal staff presentation – bite sized lunch time talks - mid August • Minister for research, technology and innovation - 7th September • Ed Chignall CEO of Predator Free 2050 Ltd - 12 September • Mahia – key community members - 13st September • ZIP and Taranaki Mounga teams - 18th September • Transforming biodiversity conference – Napier (opening address, one talk, two panel discussions and assisting with two other talks) – 13-15th November • Spark digital team on Lora wireless technology and Cape to City - 23 November 	Feb 2018
	Cape to City and Poutiri Ao ō Tāne presentation by Wendy Rakete-Stones	Completed	Kohupatiki Marae 18th September 2017	Feb 2018
	Building home for birds and bugs	Published	Press article about the education programme outcomes at Taikura Rudolf Steiner school. <i>Hastings Leader</i> page 5, 20th Dec 2017	Feb 2018
	Poutiri Ao ō Tāne Education Review	Completed	A review of education initiatives in and around the Poutiri Ao ō Tāne project area. Information taken from interviews with education providers.	Feb 2018
	Hawke’s Bay Fish and Game – Fish-out Day	Completed	Cape to City was promoted at an event organised by Fish and Game.	August 2018
	Helping the mountains roar again	Published	Article about Poutiri Ao ō Tāne in the MPI newsletter: Biosecurity 2025 (March-April 2018 edition)	August 2018
	Restoring the cloak of Papatuanuku	Published	In Living Hawke's Bay Magazine, Winter 2018 edition. About Poutiri Ao ō Tāne and seabird translocations	August 2018

Workstream	Title	Status	Description	Interim report date
Community engagement cont.	Cape to City and Poutiri Ao ō Tāne short promo film for Fieldays 2018	Completed	Short film about Cape to City and Poutiri Ao ō Tāne produced by DOC promoting Predator Free at the 2018 Fielday DOC pavilion. https://www.youtube.com/watch?v=HLJWAZ2GFvk&feature=youtu.be	August 2018
	Cape to City and Poutiri Ao ō Tāne were presented at Fieldays 2018	Completed	Posters and info provided at Fieldays in the DOC Predator Free pavilion	August 2018
	Predator Free projects shown	Published	Hastings leader, page 2, July 4th 2018. Article is about Cape to City and Poutiri Ao ō Tāne being showcased at Fieldays in Waikato	August 2018
	Origin of Poutiri Ao ō Tāne	Presentation	Trevor Taurima presented Poutiri Ao ō Tāne to the Kahungunu fishhook summit. https://www.kahungunu.iwi.nz/e--fish-hook	August 2018
	Predator Free Hawke's Bay promo film	Completed	Short film about PFHB – produced for the PFHB launch July 2018 https://youtu.be/OouMFs16NzU	August 2018
	Govt to put up \$1.6m over four years for predator-free Hawke's Bay	Published	<i>Hawke's Bay Today</i> article 2 July 2018 https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12081755	August 2018
	Ed Chignell: Predator Free 2050 crucial push	Published	<i>Hawke's Bay Today</i> article 3 July 2018 https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12081528	August 2018
	Maungaharuru-Tangitu Trust leads the way for a predator free Hawke's Bay	Published	<i>Hawke's Bay Today</i> article 7 July 2018 https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12083784	August 2018
	Early Childhood – Lifelong learning, by Robyn McCool and Megan McBride	Presentation	Information presentation given to Environmental Education Forum participants as part of Early Childhood - Lifelong Learning- themed workshop	August 2018
Pest Control	Trapped pests will trigger text message	Published	<i>Hawke's Bay Today</i> article 30 April 2015, about the launch; article syndicated by the <i>Dominion Post</i> and <i>Farmers Weekly</i>	August 2015
	Hi-tech traps target possums	Published	<i>Hawke's Bay Today</i> , 5 November 2015, p.17 article about wireless predator traps – not possums (that was a mistake in the title).	February 2016

Workstream	Title	Status	Description	Interim report date
Pest Control cont.	Farmer war on feral cats	Published	<i>Hawke's Bay Today</i> , 19 November 2015, p.7 article about the toxoplasmosis trial.	February 2016
	Cape to City: Next phase – predator control goes wireless	Published	Article in <i>Our Place</i> newsletter, November 2015 issue, p.8 (HBRC publication).	February 2016
	Cat hunt after toxoplasmosis found	Published	<i>Hastings Mail</i> , 2 December 2015, p.15. Newspaper article about the toxoplasmosis trial.	February 2016
	Traps target feral cats	Published	<i>Hastings Mail</i> , 13 April, 2016, p.8. Newspaper article about cat trapping in Cape to City.	August 2016
	Catching more rats using run-through tunnel traps	Published	ZIP article about trapping at Poutiri Ao ō Tāne. http://zip.org.nz/findings/2016/2/catching-more-rats-run-through-vs-single-entry-traps	August 2016
	New podiTRAP a long time in the making	Published	PFNZ article on PodiTRAP. November 30th 2017 https://predatorfreenz.org/new-poditraps-long-time-making/	Feb 2018
Biodiversity and Species	Pāteke fly home after time away	Published	<i>Hastings Leader</i> , 27 May 2015, p.6. Article about the pāteke release.	August 2015
	Norbury, G; McLennan, J. (2015) Biodiversity and predator monitoring for Cape to City Hawke's Bay Project. Report (LC2237) prepared for Hawke's Bay Regional Council	Completed	Biodiversity monitoring plan for Cape to City.	February 2016
	Mohi Bush rodent control operation 15/16	Completed	Report on the rat control and monitoring at Mohi Bush for the robin and tomtit translocation.	August 2016
	Kōrure settling into new home	Published	<i>Hawke's Bay Today</i> article on kōrure translocation, 18 April, p.6.	August 2016
	Massive effort to restore Maungaharuru for endangered Kōrure	Published	Te Kaea, Māori TV article, 17 April 2016, on kōrure translocation. http://www.Māoritelevision.com/news/regional/massive-effort-restore-maungaharuru-endangered-korure	August 2016

Workstream	Title	Status	Description	Interim report date
Biodiversity and Species cont.	Release returns robin's song to former homes	Published	Article in <i>Hawke's Bay Today</i> 9 July 2016, regarding the toutouwai release to Cape to City.	February 2017
	The Cape to City Project: Baseline bird counts in treatment and in non-treatment area. Unpublished report by John McLennan. March 2017	Completed	Baseline report on initial bird survey data	Aug 2017
	Re-establishing mottled petrels in the Bay	Published	Media release about the kōrure release in HB Today, page 7, 12th April 2017	Aug 2017
	Cape to City bird relocation success	Published	Article in <i>Hawke's Bay Today</i> 22nd August 2017 http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=11908713	Feb 2018
	Titi discovered at nesting site	Published	Article in Hasting leader. Jan 24 th , 2018 page 11	August 2018
	Project returns native seabirds to Hawke's Bay range near Napier	Published	Article in <i>Hawke's Bay Today</i> 28 th February 2018 http://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12003550	August 2018
	Critter of the week	Published	Radio New Zealand article about seabirds returning to Poutiri Ao ō Tāne https://www.radionz.co.nz/national/programmes/afternoons/audio/2018634442/critter-of-the-week-mottled-petrel	August 2018
	Kōrure Translocation	Published	DOC Blog on Kōrure translocation – series of 3. https://blog.doc.govt.nz/tag/korure-translocation/	August 2018
	New kōrure chicks relocated to Hawke's Bay's Maungaharuru Range	Published	Hawke's Bay Today 17 th April 2018 https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12034132	August 2018

Workstream	Title	Status	Description	Interim report date
Biodiversity and Species cont.	BayBuzz kōrure article	Published	Short article on the kōrure translocation in the May-June 2018 BayBuzz magazine	August 2018
	Shifting seabirds inland Hawke's Bay shows results	Published	This article was on TV1 6pm news. It is about the kōrure translocation. https://www.tvnz.co.nz/one-news/new-zealand/shifting-sea-birds-inland-hawkes-bay-shows-results	August 2018
Research and monitoring	Milestones 1.1 and 1.2 report on integrated research workstream of Te Matau a Māui activities	Completed	The report summarises the main activities within the research workstream, including aligned components that are not directly related to this contract.	August 2015
	Optimising translocation efforts of mottled petrels (<i>Pterodroma inexpectata</i>): growth, provisioning, meal size and the efficacy of an artificial diet for chicks	Published	Link to Rachael Sagar's presentation at inaugural world seabird twitter conference: storify.com/Seabirders/wstc1 .	August 2015
	MacLeod, L.; Dickson, R.; Leckie, C.; Stevenson, B.; Glen, A.S. 2015: Possum control and bird recovery in an urban landscape, New Zealand. <i>Conservation Evidence</i> 12: 44-47.	Published	Bird recovery in an urban landscape.	August 2015
	Glen, A.; Dickson, R. 2015: Wide-scale predator control for biodiversity in Hawke's Bay. <i>Kararehe Kino/Vertebrate Pest Research</i> 25: 6-7.	Published	Newsletter article on wide-scale predator control.	August 2015
	Jones, C.; Norbury, G.; Glen, A.; Dickson, R. 2015: Predator control benefits native species but not rabbits. <i>Kararehe Kino/Vertebrate Pest Research</i> 25: 14-15.	Published	Newsletter article on the effects of predator control on native birds and rabbits.	August 2015

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Glen, A.; Perry, M.; Ruscoe, W. 2014: Wide-scale trapping suppresses predators and promotes biodiversity in Hawke's Bay. Proceedings of the 28 th Australasian Wildlife Management Society Conference. Brisbane, AWMS.	Conference	Effects of wide-scale predator control on biodiversity.	August 2015
	Ruscoe, W.; Glen, A.S.; Perry, M.; Forrester, G. (in prep): Impacts of rabbit grazing on pasture in Hawke's Bay, New Zealand. <i>Wildlife Research</i>	Submitted	Rabbit grazing impacts on pasture production.	August 2015 updated Aug 2016
	Norbury, G.; Jones, C. 2015: Pests controlling pests: does predator control lead to greater European rabbit abundance in Australasia? <i>Mammal Review</i> 45: 79-87.	Published	Predator and rabbit interactions.	August 2015
	Glen, A.S.; Anderson, D.; Veltman, C.J.; Garvey, P.M.; Nichols, M. 2016: Wildlife detector dogs and camera traps: a comparison of techniques for detecting feral cats. <i>New Zealand Journal of Zoology</i> , 43, 127-137	Published	Comparing techniques for detecting cats.	August 2015 - updated Aug 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Nichols M, Glen AS, Garvey P, Ross J (2017). Influence of horizontal versus vertical camera placement to detect feral cats and mustelids. <i>New Zealand Journal of Ecology</i> 41, 145-150	Published	Camera-trap orientation and predator detection.	August 2015 – updated Feb 2018
	Nichols, M.; Gormley, A.; Garvey, P.; Glen, A.S.; Ross, J. (in prep): Estimating abundance of feral cats: a comparison of techniques. <i>Methods in Ecology and Evolution</i> .	In prep	Feral cat abundance estimates.	August 2015
	Garvey, P.; Nichols, M.; Glen, A.S.; Pech, R.P.; Clout, M.N. (in prep): Response of mesopredators to removal of feral cats. <i>Journal of Applied Ecology</i> .	In prep	Response of mesopredators to the removal of feral cats.	August 2015
	Glen, A.; Dickson, R.; Leckie, C. 2015: Wide-scale predator control and fauna recovery: Lessons from Hawke’s Bay. NETS conference.	Conference	Biodiversity recovery following predator control.	August 2015
	Glen, A. 2014: Camera traps for monitoring pest animals. In: <i>Abstracts, NETS Conference</i> . NPCA, New Plymouth.	Conference	Camera traps.	August 2015

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Perry, M.; Glen, A.; Ruscoe, W. 2014: Quantifying rabbit damage to pasture in Hawke's Bay, New Zealand. <i>Proceedings of the 16th Australasian Vertebrate Pest Conference</i> (ed. M. Gentle). VPC, Brisbane, p.115.	Conference	Rabbit damage to pasture.	August 2015
	Milestone 2.1 (LCR contract)	Completed	Proposed strategy for radio-tagging possums in the Cape to City footprint to generate detection probability data used for identifying areas of low, medium, and high possum numbers. This will enable forecasting of where and when control should be applied.	August 2015
	Milestone 2.3 (LCR contract)	Completed	The feasibility of the 'Ramsey' model (which uses occupancy data to estimate population density) for use in analysis of Poutiri Ao ō Tāne camera trap data to generate go and sigma values for feral cats is determined.	August 2015
	Milestone 2.4 (LCR contract)	Completed	A scoping report on optimising a monitoring design for Cape to City using cameras. Includes a critical review of potential gaps that should be addressed, using initial data from the Poutiri Ao ō Tāne camera trap work to date, to minimise risks associated with the use of this method.	August 2015
	Milestone 3.1 (LCR contract)	Completed	Identifies four or five possible scenarios for predator control to test, based on the actual property footprint for Cape to City. Includes the implications of 'friction surfaces' (eg poorly accessible areas) for contractors (in consultation with contractors in the project).	August 2015
	Milestone 4.4 (LCR contract)	Completed	Based on lessons from the Poutiri Ao ō Tāne project and other wide-scale predator control initiatives (eg the Aorangi proposal being developed by LCR for OSPRI), a 10-page scoping document was produced (linking to the high-level milestones developed for the Aotearoa Foundation) outlining the design for biodiversity monitoring in the Cape to City footprint.	August 2015

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Glen AS, Latham MC, Anderson D, Leckie C, Niemiec R, Pech RP, Byrom AE (2016). Landholder participation in regional-scale control of invasive predators: an adaptable landscape model. <i>Biological Invasions</i> 19, 329-338.	Published	This research models a range of landowner participation rates on the success of predator control.	February 2016 Updated August 2017
	Milestone 4.2 (LCR Contract)	Completed	Brief options paper that scopes the development of coupled social-ecological models for the Cape to City footprint in tandem with the Biological Heritage National Science Challenge.	February 2016
	Milestone 2.5 (LCR Contract)	Completed	Review of the wireless trial results (Feb/March 2015) from the perspective of operational delivery of wireless technology into the field, and analysis of the ability of wireless technology to reduce operational costs.	February 2016
	Milestone 2.6 and 2.7 (LCR Contract)	Completed	Determined how the Poutiri Ao ō Tāne trap network might be optimised for the maintenance control phase by using existing Poutiri Ao ō Tāne trap data in a simulation model, including three or four scenarios for optimal trap spacing and frequency of checks.	February 2016
	Milestone 4.3 (LCR Contract)	Completed	Report on the findings of the Biodiversity Trustworthy indicators focus groups.	February 2016
	Jones, C.; Warburton, B.; Carver, J.; Carver, D., 2015. Potential applications of wireless sensor networks for wildlife trapping and monitoring programmes. <i>Wildlife Society Bulletin</i> 39: 341-348.	Published	Potential applications of wireless sensor networks for wildlife trapping and monitoring programmes.	February 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Ozarski, J. 2015: Cooperation for Mutual Benefit: Opportunities for Primary Industry and the New Zealand Department of Conservation.	Published	Report by Jill Ozarski (Fulbright fellow), who uses Poutiri Ao ō Tāne as a case study. http://www.fulbright.org.nz/publications/cooperation-for-mutual-benefit-opportunities-for-primary-industry-and-the-new-zealand-department-of-conservation-to-operate-public-private-partnerships/ . Her presentation is at: http://www.fulbright.org.nz/news/video-ian-axford-new-zealand-fellowship-seminar-jill-ozarski/ .	February 2016
	Nichols, M.; Glen, A. 2015: Camera trapping to monitor the results of predator removal on Waitere station	Completed	This report assessed the ability of camera traps as a non-invasive method for monitoring the presence of feral cats. Another objective was to determine the optimal statistical approach to estimating cat abundance from the camera trapping data.	February 2016
	Landcare Research 2015: Predator busters: Hawke's Bay predator control project. <i>Discovery</i> 40.	Published	Article in <i>Discovery</i> (issue 40, Nov 2015) about Cape to City, includes a video. This is an LCR publication: http://www.landcareresearch.co.nz/publications/newsletters/discovery/discovery-issue-40/Predator-busters	February 2016
	Lowe, A. 2015: Cape Sanctuary. <i>NZES 2015 Talk Abstracts</i> . Talk during plenary symposium 'Non-government conservation initiatives'. New Zealand Ecological Society Conference, Christchurch, November 2015: p 60.	Conference	Andy Lowe's talk at the Ecological Society conference.	February 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Sagar, R.L.; Leseberg, A.; Hunt, K.; Nakagawa, K.; Dunphy, B.; Rayner M.J. 2015: Optimising translocation efforts of mottled petrels (<i>Pterodroma inexpectata</i>): growth, provisioning, meal size and the efficacy of an artificial diet for chicks. <i>Emu</i> 115 (2): 137-145.	Published	Paper on optimising translocation efforts of mottled petrels	February 2016
	Sagar, R.L. 2015: Cumulative impact of handling on chick physiology, growth. World Seabird Conference 2015.	Conference	Results of the study of the cumulative impact of handling on chick physiology, growth and condition were presented at the Second World Seabird Conference, Cape Town, in October 2015.	February 2016
	Milestone 7.1 Community Survey Brief report	Completed	Brief report by Pike Brown on the Cape to City community survey done end 2015.	August 2016
	Shiny App	Completed	Prototype 'shiny app' has been developed to allow managers to predict trap catch by altering trap configurations online.	August 2016
	Pech R and Maitland M (2016) Conservation of native fauna in highly invaded systems: managing mammalian predators in New Zealand. <i>Restoration Ecology</i> 24, 816-820.	Published	Conservation of native fauna in highly invaded systems.	August 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Niemiec, R.M., Pech, R., Norbury, G., Byrom, A.E. (2017). Landowners' Perspectives on Coordinated, Landscape-Level Invasive Species Control: the Role of Social and Ecological Context. <i>Environmental Management</i> 59, 477-489.	Published	This paper uses the data from the Cape to City rural survey.	August 2016 Updated February 2017
	Garvey, P.M., Glen, A.S., Clout, M.N., Wyse, S.V., Nichols, M., Pech, R.P., (2017). Exploiting interspecific olfactory communication to monitor predators. <i>Ecological Applications</i> 27, 389-402.	Published	This paper looks at using sense of smell as communication between species as a way of monitoring predators.	August 2016 Updated February 2017
	Gormley, A.M.; Warburton, B. (in prep): Optimising a kill-trap network for cost-effective predator control.	In Prep	Optimising a kill-trap network for cost-effective predator control.	August 2016
	Glen, A.S.; Perry, M.; Yockney, I.; Cave, S.; Gormley, A.M.; Leckie, C.; Dickson, R.; Rakete-Stones, W.; Rakete-Stones, P.; Norbury, G.L.; Ruscoe, W.A. (in prep). Wide-scale predator control for biodiversity conservation: a case study from Hawke's Bay, New Zealand.	Submitted	A look at wide-scale predator control for biodiversity, using Cape to City as a case study.	August 2016 Updated February 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Byrom, A.; Brignall-Theyer, M.; Brown, P.; Dickson, R.; Glen, A.; Leckie, C.; Millard, P.; Norbury, G.; Pech, R.; Warburton, B. 2015: Managing pest mammals in a whole-of-system context: a case study from Hawke's Bay. NETS conference	Conference	Managing pest mammals in a whole-of-system context: a case study from Hawke's Bay.	August 2016
	Cowan, P.; Glen, A.; Norbury, G.; Byrom, A.; Dickson, R.; Leckie, C. 2015: Scaling up: From Island to Mainland Eradication. Proceedings of Vth International Wildlife Management Congress. Sapporo, Japan.	Conference	Scaling up: From Island to Mainland Eradication.	August 2016
	Glen, A.; Anderson, D.; Veltman, C.; Garvey, P.; Nichols, M. 2015: Canine vs camera: comparing camera traps with sniffer dogs for detecting feral cats. p.43 in: <i>Abstracts of the 28th Australasian Wildlife Management Society Conference</i> . Australasian Wildlife Management Society, Perth.	Conference	Comparing camera traps with sniffer dogs for detecting feral cats.	August 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Innes, J.; Fitzgerald, N. 2016: Possible bird-related research in the Hawke's Bay Cape to City project. Unpublished report to Hawke's Bay Regional Council, June 2016.	Completed	Possible bird-related research in the Hawke's Bay Cape to City project.	August 2016
	Brown, S.J.; Latham, C.; Warburton, B. 2016: Cape to City Chew Card Analysis. Unpublished Landcare Research Contract Report LC2582, prepared for Hawke's Bay Regional Council.	Completed	Cape to City chew card analysis.	August 2016
	Gormley, A.M.; MacLeod, C.J. 2016: Assessment of data sources for monitoring birds in Cape to City. Unpublished Landcare Research Contract Report LC2622, prepared for Hawke's Bay Regional Council.	Completed	Assessment of data sources for monitoring birds in Cape to City.	August 2016
	Watts, C.; Holdaway, R.; Davis, C.; Wood, J.; Dickie, I.; Thomson, F.; Thornburrow, D. 2016: Novel invertebrate monitoring opportunities within Cape to City: Research Synthesis 2015/2016. Unpublished Landcare Research Contract Report LC2541, prepared for Hawke's Bay Regional Council.	Completed	Invertebrate monitoring opportunities within Cape to City.	August 2016

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Byrom, A.E. 2016: The Cape to City project and its relationship to New Zealand's Biological Heritage National Science Challenge. Invited presentation, Hawke's Bay branch of the Royal Society of New Zealand, June 2016.	Presentation	Public lecture on Cape to City.	August 2016
	Innes, J.; Fitzgerald, N. 2016: Restoring birds in Cape to City. Four-page infographic for Hawke's Bay Regional Council, June 2016.	Completed	Infographics on restoring birds in Cape to City.	August 2016
	Glen, A. 2016: Cape to City predator monitoring: initial knockdown. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	Report on initial knockdown phase of Cape to City.	February 2017
	Glen, A.; Norbury, G. 2016: Biodiversity monitoring in Cape to City: lizards and invertebrates. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	Lizard and invertebrate monitoring in Cape to City.	February 2017
	Cape to City: Pest management and restoration science at scale	Lecture	LINK Seminar in Wellington, by Campbell and Grant in July 2016. http://www.landcareresearch.co.nz/about/news/events/link-seminars	February 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Norbury, G.; Leckie, C.; Dickson, R.; Glen, A.; Byrom, A.; Pech, R. 2016: Regional-scale biodiversity restoration: towards a Predator-Free New Zealand, in Conference Programme and Abstracts of the 2016 Australasian Wildlife Management Society Conference, Auckland. 29 Nov - 1 Dec, 2016.	Conference	Regional-scale biodiversity restoration using Cape to City and Poutiri Ao ō Tāne as examples.	February 2017
	Norbury, G.; Glen, A.; Pech, R.; Byrom, A.; Leckie, C.; Dickson, R. 2016: Regional-scale biodiversity restoration in Hawke's Bay: towards a Predator-Free New Zealand. Kararehe Kino Vertebrate Pest Research Newsletter, Issue 28, pp 7-8.	Newsletter	Regional-scale biodiversity restoration in Hawke's Bay using Cape to City and Poutiri Ao ō Tāne as examples.	February 2017
	Warburton B, Leckie C, Rakete-Stones W. 2017. Remote monitoring traps using wireless networks. 17th Australasian Vertebrate Pest Conference. Canberra. May 1-4.	Conference	Remote monitoring traps using wireless networks	Aug 2017
	Warburton B, Jones C, Ekanayake J (2017). The economics of using wireless networks for monitoring traps. Kararehe Kino - Vertebrate Pest Research 29.	Newsletter	The economics of using wireless networks for monitoring traps	Aug 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Glen A, Norbury G, Warburton B, Pech R. 2016. Predator monitoring for compliance in Cape to City: Discussion paper. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	Predator monitoring for compliance in Cape to City	Aug 2017
	Glen A, Norbury G, Garvey P, Dickson R. 2017. Effectiveness of feral cat control using para-aminopropiophenone (PAPP) on Toronui Station, Hawke's Bay. Unpublished Landcare Research Contract Report LC2743, prepared for Hawke's Bay Regional Council.	Completed	Effectiveness of feral cat control using para-aminopropiophenone (PAPP) on Toronui Station, Hawke's Bay	Aug 2017
	White, D. (2016). <i>Toxoplasma gondii</i> screening in cats and mice using PCR as part of the Cape to City Initiative. Unpublished Landcare Research Report, prepared for Hawke's Bay Regional Council.	Completed	<i>Toxoplasma gondii</i> screening in cats and mice using PCR as part of the Cape to City Initiative.	Aug 2017
	Flood S. 2017. Education review for TMAM – Cape-to-City and Poutiri Ao ō Tāne. Project discussion document. Unpublished Landcare Research Report prepared for Hawke's Bay Regional Council.	Completed	Education review for TMAM – Cape-to-City and Poutiri Ao ō Tāne.	Aug 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Norbury G, Glen A, Pech R. 2017. Linking predator camera trap monitoring to biodiversity and economic benefits: density-impact functions in principle. Unpublished Landcare Research Scoping Report, prepared for Hawke's Bay Regional Council.	Completed	Linking predator camera trap monitoring to biodiversity and economic benefits: density-impact functions in principle.	Aug 2017
	Norbury G, Pech R, Glen A. 2017. Linking predator camera trap monitoring to biodiversity and economic benefits: how to derive density-impact functions for Cape-to-City. Unpublished Landcare Research Follow-Up Report, prepared for Hawke's Bay Regional Council.	Completed	Linking predator camera trap monitoring to biodiversity and economic benefits: how to derive density-impact functions for Cape-to-City	Aug 2017
	Cowan P, Warburton B. 2016. Economic outcomes of broadscale predator control in the Hawke's Bay region. Unpublished Landcare Research Contract Report LC2738, prepared for Hawke's Bay Regional Council.	Completed	Economic outcomes of broadscale predator control in the Hawke's Bay region	Aug 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Niemiec, R.M., Pech, R., Norbury, G. and Byrom, A. 2017. Policy recommendations based on landholder's perspectives on coordinated pest control. Hawkes Bay Regional Council Policy Brief 2_1_2017.	Completed	Policy recommendations based on landholder's perspectives on coordinated pest control	Aug 2017
	Glen A & Norbury G 2017. Cape to City and Poutiri Ao ō Tāne: pest and biodiversity responses. Unpublished Landcare Research Progress Report, prepared for Hawke's Bay Regional Council.	Completed	Cape to City and Poutiri Ao ō Tāne: pest and biodiversity responses.	Aug 2017
	Norbury G, Campion M, Brown S, Garvey P. 2017. Milestone 1.5 Conduct a ferret body odour longevity trial to determine how long odour lasts, and therefore how often it needs to be refreshed in the field. Unpublished Landcare Research Progress Report, prepared for Hawke's Bay Regional Council.	Completed	Ferret body odour longevity trial to determine how long odour lasts, and therefore how often it needs to be refreshed in the field.	Aug 2017
	Latham ADM, Latham MC, Warburton B 2017. Effect of predator control at Poutiri Ao ō Tāne on Boundary Stream Mainland Island.	Completed	Effect of predator control at Poutiri Ao ō Tāne on Boundary Stream Mainland Island.	Aug 2017

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Burge OR, Innes J, Fitzgerald N, Richardson SJ 2017. Habitat availability for native New Zealand bird species within the Cape-to-City footprint – a preliminary assessment.	Completed	Habitat availability for native New Zealand bird species within the Cape-to-City footprint	Aug 2017
	Gormley AM, Warburton B. 2017. TrapSim: A decision-support tool for simulating predator trapping. Unpublished Landcare Research Contract Report LC2993, prepared for Hawke's Bay Regional Council.	Completed	TrapSim: A decision-support tool for simulating predator trapping.	Aug 2017
	Flood S 2017. HBRC Aotearoa PFNZ: Project 5.1: Education review for TMAM – Cape to City and Poutiri Ao ō Tāne: Report on initial data analysis. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	Education review for TMAM – Cape to City and Poutiri Ao ō Tāne: Report on initial data analysis.	Aug 2017
	Watts C, Dopheide A, Holdaway R, Davis C, Wood J, Thornburrow D, Dickie IA 2017. DNA metabarcoding as a new tool for invertebrate community monitoring – a case study comparison with conventional techniques. Restoration Ecology.	Submitted	Comparing eDNA with conventional invertebrate sampling techniques	Feb 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Glen A 2017. Controlling feral cats on farmland with a new toxin: PAPP. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Controlling feral cats on farmland with PAPP	Feb 2018
	Glen A 2017. Using cameras for operational and compliance monitoring. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Using cameras for operational and compliance monitoring	Feb 2018
	Glen A 2017. Outcomes of predator control: responses of lizards and invertebrates. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Responses of lizards and invertebrates to Predator control	Feb 2018
	Warburton B, Leckie C 2017. Transformational levers - wireless trap monitoring. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Wireless trap monitoring	Feb 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Watts C 2017. Invertebrate monitoring using conventional methods and eDNA. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Invertebrate monitoring using conventional methods and eDNA	Feb 2018
	Gormley A, Warburton B 2017. Fewer traps but still delivering large scale success - optimising trapping. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Fewer traps but still delivering large scale success - optimising trapping	Feb 2018
	Norbury G 2017. Linking predator camera trap monitoring to biodiversity benefits. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Linking predator camera trap monitoring to biodiversity benefits	Feb 2018
	Garvey P 2017. Long life lures - how close to reality for field use? Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Long Life Lures	Feb 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Burge O, Innes J, Fitzgerald N, Richardson S 2017. Joining the dots on habitat. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017. Presented by G Norbury	Conference	Habitat connectivity	Feb 2018
	Pech R 2017. It's about people and outcomes - landowner participation modelling. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Socio-ecological modelling participation	Feb 2018
	Warburton B 2017. Economic outcomes of predator control. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Economic outcomes of predator control	Feb 2018
	Norbury G, Latham D, Binny R 2017. The importance of the right foundation for predator catch data. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	The importance of the right foundation for predator catch data	Feb 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Greenaway A 2017. Insight into the team - Cape to City case study. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Insight into the Cape to City and Poutiri Ao ō Tāne Project team	Feb 2018
	Byrom A. 2017. The problem with rabbits and other perverse outcomes. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	The problem with rabbits and other perverse outcomes	Feb 2018
	Flood S 2017. Measuring education outcomes. Transforming Biodiversity Conference: 'Challenging the boundaries', Napier, 14-16 November 2017.	Conference	Measuring education outcomes	Feb 2018
	Warburton B. 2017. Economic assessment of using wireless monitoring for managing large-scale trap-networks. Unpublished Landcare Research Contract Report LC2915, prepared for Hawke's Bay Regional Council.	Completed	Economic assessment of using wireless monitoring for managing large-scale trap-networks	Feb 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Reynolds F, Greenaway A. 2017. Implementing social-ecological transformation through Cape-to-City and Poutiri Ao ō Tāne: an interim case study report. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	Implementing social-ecological transformation through Cape-to-City and Poutiri Ao ō Tāne	Feb 2018
	Watts C, Dopheide A, Holdaway R, Davis C, Wood J, Thornburrow D, Dickie IA 2017. DNA metabarcoding as a new tool for invertebrate community monitoring – a case study comparison with conventional techniques. Unpublished Landcare Research Contract Report, prepared for Hawke's Bay Regional Council.	Completed	DNA metabarcoding as a new tool for invertebrate community monitoring – a case study comparison with conventional techniques	Feb 2018
	Norbury G, Binny R, Latham D. 2018. Milestone 3.3 National framework for pest density-impact functions. Unpublished Landcare Research Report, prepared for Hawke's Bay Regional Council.	Completed	The importance of developing a national framework for pest density-impact functions. These functions show the level of pest control required for to get biodiversity gains for different native species.	August 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Latham ADM, Binny RN, Norbury G. 2018. National framework for predator monitoring using trap-catch data. Unpublished Landcare Research Report LC3112, prepared for Hawke's Bay Regional Council.	Completed	Report on using trap catch data as a monitoring tool and the need for a national framework, so that data is captured consistently.	August 2018
	White D, Tompkins D (2017). Progress report on impact of cat trapping on prevalence of <i>Toxoplasma gondii</i> in one year old ewes as part of the Cape to City Initiative. Unpublished Landcare Research Report, prepared for Hawke's Bay Regional Council.	Completed	Progress report on impact of cat trapping on prevalence of <i>Toxoplasma gondii</i> in one year old ewes as part of the Cape to City Initiative	August 2018
	Garvey, PM, Glen, AS, Clout, MN, Nichols, M and Pech, RP (submitted). Niche partitioning in a guild of invasive mammalian predators. <i>Journal of Animal Ecology</i> .	Submitted	Research paper on niche partitioning in a guild of invasive mammalian predators. Submitted to <i>Journal of Animal Ecology</i> .	August 2018
	Nichols, M, Glen, AS, Ross, J and Garvey, PM (submitted). A comparison of statistical modelling methods for evaluating the effectiveness of a feral cat control operation using camera traps. <i>Wildlife Research</i> .	Submitted	Research paper on a comparison of statistical modelling methods for evaluating the effectiveness of a feral cat control operation using camera traps. Submitted to <i>Wildlife Research</i> .	August 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Glen A, Norbury G, Warburton B. 2018. Socially acceptable compliance monitoring of predators. Unpublished Landcare Research Report LC3160, prepared for Hawke's Bay Regional Council.	Completed	Report on socially acceptable compliance monitoring of predators	August 2018
	Greenaway, A. July 2018. Exploring NZ's capacity to care for the environment. NZGS- IAG Conference 'Creative conversations, constructive connections'. The University of Auckland. New Zealand.	Conference presentation	Presentation which included the Cape to City social transformation case study	August 2018
	Norbury G. 2018. Pest projects – Cape to City and Taranaki Mouna. Invited speaker at Department of Conservation Lower South Island Partnerships Team Meeting. Alexandra, April 17.	Presentation	Talk on Pest projects – Cape to City and Taranaki Mouna to DOC partnerships team	August 2018
	Garvey, P. M. (2016). Interspecific competition and olfactory communication between New Zealand's invasive predators. PhD Thesis, University of Auckland, Auckland	PhD Thesis	Communication through olfaction between NZ invasive predators	August 2018

Workstream	Title	Status	Description	Interim report date
Research and monitoring cont.	Nichols, M. (2017). Optimal monitoring and statistical modelling methods for feral cats and other mammalian predators in a pastoral landscape. PhD Thesis, Lincoln University, Lincoln	PhD Thesis	Mostly based around using motion sensitive cameras as a monitoring tool.	August 2018
	Garvey, P., Glen, A., Clout, M., Nichols, M., and Pech, R. (2018). Alien encounters: Community ecology in a system dominated by invasive mammalian predators. In 'Proceedings of the Gordon Research Conference on Predator-Prey Interactions.' (Ventura)	Conference presentation	Alien encounters: Community ecology in a system dominated by invasive mammalian predators.	August 2018
	Flood S, Brignall-Theyer M, McBride M, McCool R. Empowering students, teachers and communities in conservation: a review of the cape to City environmental education programme. New Zealand Association for Environmental Education (NZAEE) 9th Biennial Conference: An Ecosystem for Environmental Education - He Pūnaha Hauropi mō te mātauranga a taiao), Wellington, April 2018.	Conference presentation	Empowering students, teachers and communities in conservation: a review of the cape to City environmental education programme.	August 2018