

# **Biosecurity and Biodiversity Working Party**

**Wednesday 25 May 2022 at 1.00pm**

# **AGENDA**

## Biosecurity and Biodiversity Working Party Agenda

Meeting to be held in the Council Chamber  
36 Water Street, Whangārei  
on Wednesday 25 May 2022, commencing at 1.00pm

**Please note: working parties and working groups carry NO formal decision-making delegations from council. The purpose of the working party/group is to carry out preparatory work and discussions prior to taking matters to the full council for formal consideration and decision-making. Working party/group meetings are open to the public to attend (unless there are specific grounds under LGOIMA for the public to be excluded).**

### MEMBERSHIP OF THE BIOSECURITY AND BIODIVERSITY WORKING PARTY

Chairperson, NRC Councillor Jack Crow

Councillor Justin Blaikie	Councillor Marty Robinson	Councillor Rick Stolwerk
Ex Officio Penny Smart	TTMAC representative Georgina Connelly	TTMAC representative Julianne Chetham
TTMAC representative Michelle Elboz	TTMAC representative Nora Rameka	

### KARAKIA

### RĪMITI (ITEM)

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**4.8** Kauri Protection and recent Biosecurity and Biodiversity incidents

*Kauri protection work has been ongoing and involving track upgrades, soil sampling and fencing to protect kauri stands on private land. Gavin Clapperton of the kauri protection team will be available to provide further detail.*

*This item also provides an opportunity for staff to provide a verbal update to the working party on any recent events involving new pest incursions and any other matters.*

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## Karakia

Ka tū i te waonui a Tāne Ka tupu ake rā Te rākau roa Te rākau nui Te rākau rangatira Ko te Kauri Ko te Tōtara Ko te Manuka Ko te Kahikātea Ko te Pūriri Ka toro atu rā ngā peka kia hono ki tētahi Haramai te toki Haumie hui e TAIKI E!	Stand strong in the realm of Tāne Where the tree develops, endures, grows and where prominence reveals itself Tis the Kauri Tis the Tōtara Tis the Manuka Tis the Kahikātea Tis the Pūriri Reach out far, bind together  Bring forth unity Tis done!
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**TITLE:** **Record of Actions – 23 February 2022**

**From:** Mandy Tepania, Biosecurity PA/Team Admin

**Authorised by** Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on  
**Group Manager/s:**

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### **Whakarāpopototanga / Executive summary**

The purpose of this report is to present the Record of Actions of the last meeting (attached) held on 23 February 2022 for review by the meeting.

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### **Attachments/Ngā tapirihanga**

Attachment 1: Biodiversity and Biosecurity Working Party Meeting Record of Actions [↓](#)

Biosecurity and Biodiversity Working Party  
23 February 2022

## Biosecurity and Biodiversity Working Party Record of Actions

Meeting held in the Remotely via Zoom  
on Wednesday 23 February 2022, commencing at 1.00pm

### Tuhinga/Present:

Chairperson, NRC Councillor Jack Craw  
Councillor Marty Robinson  
Councillor Rick Stolwerk  
Ex Officio Penny Smart  
TTMAC representative Georgina Connelly  
TTMAC representative Juliane Chetham

### I Tae Mai/In Attendance:

#### Full Meeting

##### NRC Chief Executive Officer – Malcolm Nicolson

GM Environmental Services, Jonathan Gibbard  
GM Biosecurity - Don McKenzie  
NRC Biodiversity Manager, Lisa Forrester  
NRC Biosecurity Manager - Marine, Kathryn Lister  
NRC Biosecurity Manager - Incursions & Response, Vivienne Lepper  
NRC Biosecurity Manager- Predator Free, Sam Johnson  
NRC Biodiversity Specialist – Freshwater, Jacki Byrd  
NRC Biosecurity Officer - Marine, Kaeden Leonard  
NRC Kia Arahī Tikanga Māori – Robert Nathan  
NRC PA – Biosecurity Services – Mandy Tepania

#### Part Meeting

NRC Policy Specialist, James Griffin  
Kiwi Coast, Coordinator, Ngaire Sullivan  
Kiwi Coast, Coordinator, Andrew Mentor  
Troy Churton

The meeting commenced at 1.05 pm.

### Ngā Mahi Whakapai/Housekeeping (Item 1.0)

### Ngā Whakapahā/Apologies (Item 2.0)

Councillor Justin Blaikie  
TTMAC representative Nora Rameka  
TTMAC representative Michelle Elboz

### Record of Actions –13 October 2021 (Item 4.1)

Presented by: PA Biosecurity Services

Biosecurity and Biodiversity Working Party  
23 February 2022

**Agreed action points:**

- No actions required

**Receipt of Action Sheet (Item 4.2)**

**Presented by:** PA Biosecurity Services

**Agreed action points:**

- All actions marked as complete

**Kiwi Coast Presentation (Item 4.3)**

**Presented by:** Coordinator, Kiwi Coast

**Agreed action points:**

- Kiwi Coast Presentation 11- report received and information noted. Support given by members to prepare an item for future council workshop as per the item recommendation.

**Mr Churton - Presentation (Item 4.4)**

**Presented by:** Mr Churton

**Agreed action points:**

- Presentation 48- report received- Chair thanked Mr Churton for his presentation.
- Staff to enquire with kiwi coast as to the possibility of running a dog owner training workshop at Taupo bay- Don Mckenzie to action
- Staff to input to legislative change to the Conservation Act when the opportunity arises to advocate for better dog control and protection of endangered wildlife. Policy team to advise when review is proposed.
- Enquire with the kaitiaki ranger programme the possibility of summer patrols in this area. Don Mckenzie to action.
- NRC to take the opportunity to submit on the FNDC by law review when this opportunity arises. Policy team to monitor the expected timing of this review and advise accordingly.

**FIF Dune Lakes Programme - Lake Karaka Update (Item 4.5)**

**Presented by:** Biodiversity Manager and Biodiversity Specialist Freshwater

**Agreed action points:**

- Lake Karaka Update 49- recommendation supported- update to be given at a future working party meeting. Action Lisa Forester

Biosecurity and Biodiversity Working Party  
23 February 2022

### **Predator Free 2050 Update (Item 4.6)**

**Presented by:** Biosecurity Predator Free 2050 Programme Manager

**Agreed action points:**

- Predator Free 2050 Update 53- item noted.
- Staff to ask for copy of the Nikki Wakefield report which was referred to at the meeting. Don McKenzie to action.
- Staff to ensure that all programmes be undertaken using NRC Standard Operating Procedures to reduce external risks. Don McKenzie to follow up

### **Kauri Protection Update (Item 4.7)**

**Presented by:** Biosecurity Group Manager

**Agreed action points:**

- Kauri Protection Update 58- item noted and staff to provide a further update at the next working party meeting. Gavin Clapperton to action

### **Feral Deer (Item 4.8)**

**Presented by:** Biosecurity Incursions Manager

**Agreed action points:**

- Further update at future meeting requested (6 months). Vivienne Lepper to action

### **Biosecurity Climate Change Strategy (Item 4.9)**

**Presented by:** Biosecurity Partnerships Manager and Biosecurity Group Manager

**Agreed action points:**

- Biosecurity Climate Change Strategy 63- Chair noted the need to scope the engagement process particularly with hapū for this report but also the primary industry sectors- Chair thought this may cost \$50k and would need to return to council workshop to request unbudgeted expenditure in order to begin this financial year- the strategy is budgeted for next financial year at this stage.
- Action: Chair to discuss at a future council workshop

### **Biodiversity strategy update (Item 4.10)**

**Presented by:** Environmental Group Manager and Biodiversity Manager

Biosecurity and Biodiversity Working Party  
23 February 2022

**Agreed action points:**

- Biodiversity strategy update 65- recommendations supported. No further actions

**Biosecurity and Biodiversity Work Program (Item 4.11)**

**Presented by:** Biosecurity Group Manager and Biodiversity Manager

**Agreed action points:**

- Biosecurity and Biodiversity Work Program- information noted

**Whakamutunga (Conclusion)**

The meeting concluded at 3.45 pm.

**TITLE:**                    **Receipt of Action Sheet - 23 February 2022**

**From:**                    Mandy Tepania, Biosecurity PA/Team Admin

**Authorised by**            Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on  
**Group Manager/s:**

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### **Whakarāpopototanga / Executive summary**

The purpose of this report is to enable the meeting to receive the current action sheet.

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### **Nga mahi tutohutia / Recommendation**

That the action sheet be received.

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### **Attachments/Ngā tapirihanga**

Attachment 1: Biodiversity and Biosecurity Working Party Receipt of Actions 23 February 2022 [↓](#)



Biosecurity and Biodiversity Working Party – Schedule of Actions

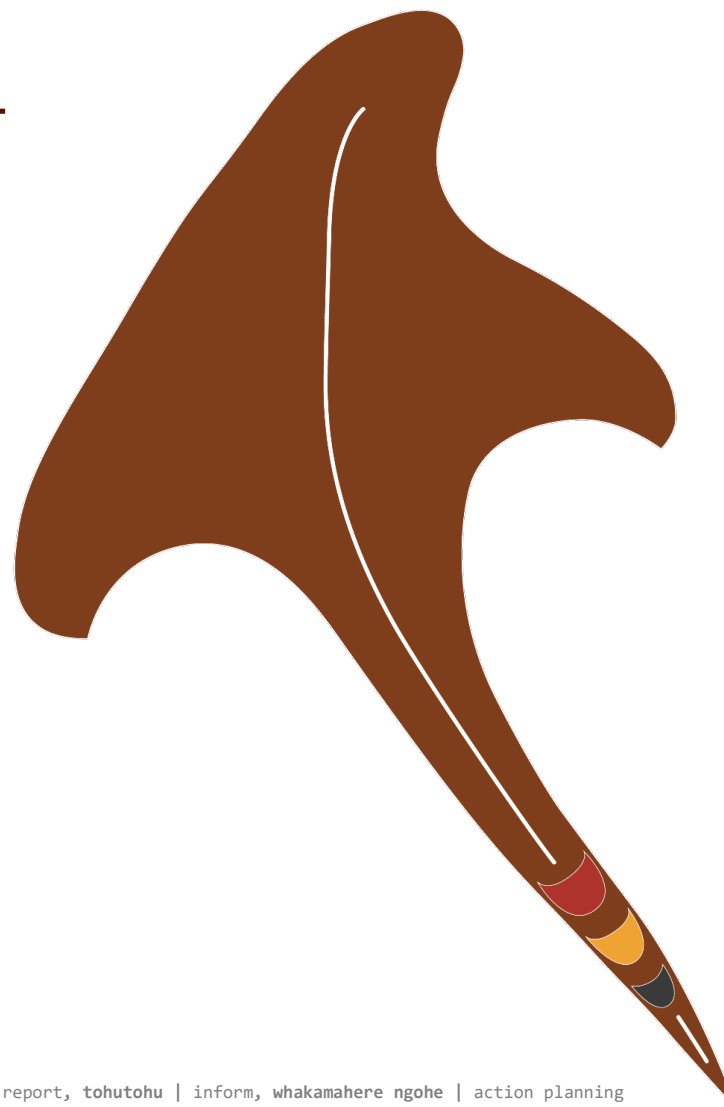
Meeting date	Item	BABWP action	Responsible staff	Status	Notes
23 February 2022	Kiwi Coast Presentation (Item 4.3)	Kiwi Coast Presentation 11- report received and information noted. Support given by members to prepare an item for future council workshop as per the item recommendation.	Don McKenzie	complete	
23 February 2022	Mr. Churton Presentation (Item 4.4)	Staff to enquire with kiwi coast as to the possibility of running a dog owner training workshop at Taupo bay- Don McKenzie to action	Don McKenzie	complete	
		Staff to input to legislative change to the Conservation Act when the opportunity arises to advocate for better dog control and protection of endangered wildlife. Policy team to advise when review is proposed	Policy Team	complete	Consultation on Conservation Act law reform is underway, and staff have an opportunity to input.
		Enquire with the kaitiaki ranger programme the possibility of summer patrols in this area. Don Mckenzie to action.	Don McKenzie	complete	Kaitiaki ranger programme is expected to be funded over next summer
		NRC to take the opportunity to submit on the FNDC by law review when this opportunity arises. Policy team to monitor the expected timing of this review and advise accordingly.	Policy team	complete	A review is not expected to be conducted within the next 12 months.
23 February 2022	FIF Dune Lakes Programme - Lake Karaka Update (Item 4.5)	Lake Karaka Update 49- recommendation supported- update to be given at a future working party meeting. Action Lisa Forester	Lisa Forester	complete	
23 February 2022	Predator Free 2050 Update (Item 4.6)	Staff to ask for copy of the Nikki Wakefield report which was referred to at the meeting. Don Mckenzie to action.	Don McKenzie	complete	

		Staff to ensure that all programmes be undertaken using NRC Standard Operating Procedures to reduce external risks. Don Mckenzie to follow up	Don McKenzie	complete	
23 February 2022	Kauri Protection Update (Item 4.7)	Kauri Protection Update 58- item noted and staff to provide a further update at the next working party meeting	Gavin Clapperton		
23 February 2022	Feral Deer (Item 4.8)	Further update at future meeting requested (6 months)	Vivienne Lepper		
23 February 2022	Biosecurity Climate Change Strategy (Item 4.9)	Biosecurity Climate Change Strategy 63- Chair noted the need to scope the engagement process particularly with hapū for this report but also the primary industry sectors- Chair thought this may cost \$50k and would need to return to council workshop to request unbudgeted expenditure in order to begin this financial year- the strategy is budgeted for next financial year at this stage. Chair to discuss at a future council workshop	Jack Craw		

## He Unaunahi o Te Ika Nui a Māui *Mō Te Taiao*

He pūrongo mō ngā ngohe aronui o  
te tangata whenua hei tohutohu  
mō te whakamahere ngohe rima tau  
mō Konihi Kore 2050 mō roto o te  
Tai Tokerau

2021-2026



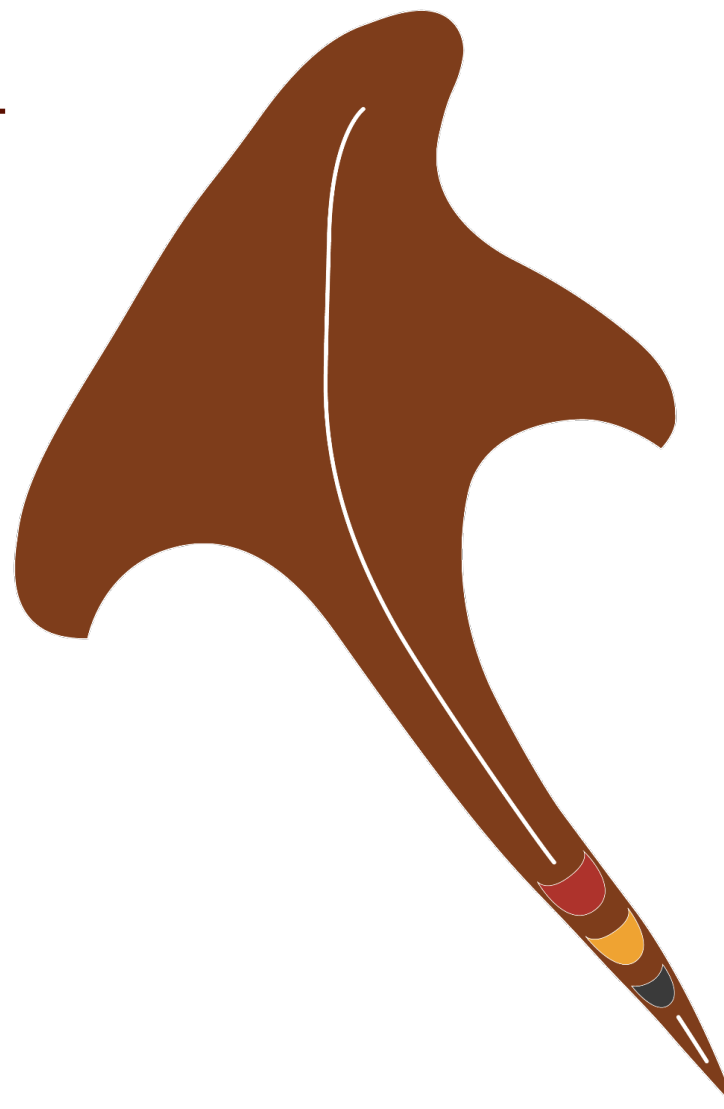
konihi kore | predator free, ngohe aronui | priority actions, pūrongo | report, tohutohu | inform, whakamahere ngohe | action planning




## He Unaunahi o Te Ika Nui a Māui *Mō Te Taiao*


A summary of tangata whenua  
priority actions to inform  
Predator Free 2050 five-year  
action planning in te Tai  
Tokerau

2021-2026



<p><b>Kaituhi Pūrongo:</b> Nicki Wakefield, Ngairo Tahere, Te Kaurinui Parata, Hollie Russell</p> <p><b>Kaitohutohu Tāpae Kōrero Āpiti:</b> Robyn Tauroa</p> <p><b>Kaiwhakamāori Matua:</b> Ngairo Tahere, Te Kaurinui Parata</p> <p><b>Kaiarotake Reo Māori:</b> Mark Ngāhōia Scott</p> <p>© Te Tahi o Pipipi 2021</p> <p>He mea whakarite hei wāhi rato nā Matakōhe Hoahoa me te Tōpū Pā</p> <p>158b Bank Street Whangarei <a href="mailto:info@matakohe.co.nz">info@matakohe.co.nz</a></p>  <p><b>waehera mahi:</b> MA0041</p> <p>Ko te tāpae kōrero, ko te tukanga me ngā whakaahua i tāruatia ki roto o tēnei pūrongo he mea whakaae hei wāhi tākoha, hei wāhi whakaatu i te aronui o te tangata whenua <i>me kore e</i> hāngai ki KK2050. Ehara hei māngai rānei, hei mana rānei tēnei pūrongo mō te mana motuhake o ia tangata whenua o te Tai Tokerau</p>	<p style="text-align: right;"><b>KAITUKU</b></p> <p>Ka kohia e tēnei pūrongo he wāhi whakaatu mō ngā ngohe aronui o ngā whakamine tangata whenua o te Tai Tokerau mō ngā tau e rima tēnei ka kōkiri mō te Kōirihi Kore. Ka mihi te tira tuhi pūrongo nei ki te hunga o te rārangi kaituku ki raro iho mai, mō rātou tō rātou wā me te whakapau kaha mō tēnei pūrongo, he patu waea, he wā hui, he pānui me te arotake i te tauira pūrongo. E mihi ana anō ki ngā tini rōpū tiaki taiao kihai i whai wāhi mai hei kaituku mō tēnei pūrongo – e mihi ana ki a koutou</p> <p style="text-align: right;">Taitokerau Māori Forestry Ltd hui held 11/5 &amp; 29/6 Ngā Hapū o Whangārei Trapping Coordinators of Te Patunga Marae Karangahape Marae Otangaroa Marae Taemaro Papakainga Wainui-Piapia Te Komanga Marae Kaitiaki Whangaroa Tangata Whenua Members Pōkai o Ngāti Manu members Te Mautohe ki Pātāua Patuharakeke Te Iwi Trust Board Pehiāweri Marae</p>
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hoahoa | architecture, kaiarotake | reviewer, kaitohutohu | advisor, kaituku | contributor, ngohe aronui | priority actions, patu waea | phone call pūrongo | report, rato  
| service, tāpae kōrero | content, tārua | reproduce, Te Tahi o Pipipi | July, tōpū pā | urbanism, tukanga | methodology  
wāhi whakaatu | snapshot, waehera | code, whakamine | grouping

<p><b>Report Authors:</b> Nicki Wakefield, Ngairo Tahere, Te Kaurinui Parata, Hollie Russell</p> <p><b>Further Content Advisor:</b> Robyn Tauroa</p> <p><b>Te Reo Māori:</b> Ngairo Tahere, Te Kaurinui Parata</p> <p><b>Te Reo Māori Review:</b> Mark Ngāhōia Scott</p> <p>© July 2021</p> <p>Prepared as part of services carried out by Matakohē Architecture and Urbanism</p> <p>158 b Bank Street Whangarei <a href="mailto:info@matakohē.co.nz">info@matakohē.co.nz</a></p>  <p><b>job code:</b> MA0041</p> <p>The content, methodology and images reproduced in this report are consented to be shared as a portion, a snapshot of tangata whenua priorities which <i>may</i> align with PF2050. This report is not representative or a proxy for independent mana motuhake of the respective tangata whenua groupings of the north</p>	<p style="text-align: right;"><b>CONTRIBUTORS</b></p> <p>This report collects a snapshot of the priority actions among tangata whenua groupings of Te Tai Tokerau for the next 5 years of working towards Predator Free. The report writing team acknowledge the below list who contributed their time and energy to this report, phone calls, hui time and reading the draft report and essential feedback. We also acknowledge the many groups committed to the taiao who may not have had the opportunity to contribute to this report - e mihi ana ki a koutou</p> <p style="text-align: right;">Taitokerau Māori Forestry Ltd hui held 11/5 &amp; 29/6 Ngā Hapū o Whangārei Trapping Coordinators of Te Patunga Marae Karangahape Marae Otangaroa Marae Taemaro Papakainga Wainui-Piapia Te Komanga Marae Kaitiaki Whangaroa Tangata Whenua Members Pōkai o Ngāti Manu members Te Mautohe ki Pātāua Patuharakeke Te Iwi Trust Board Pehiāweri Marae</p>
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## He hiku korikori, he hiku panganga, Te Hiku o Te Ika Nui a Māui

*The writhing tail of Māui's great haul, Te Hiku o Te Ika Nui a Māui*

*Ko tēnei kōrero he tūtohu i te Tai Tokerau hei hiku mō Te Ika Nui a Māui.  
Kua aua atu te wā a te Tai Tokerau e kakare kia kōrure mai ai ngā tai mō te ora te take, he au tōna  
e kakare ana ki tua o ngā tai o te Tai Tokerau.*

*I ngā hapori tini o te Tai Tokerau e whaiwhakaaro ana ki ngā ngohe matatū hei kōkiri mō te Anamata  
Konihi Kore, ko tēnei kōrero he tūtohu i te korikori o Te Hiku o Te Ika hei korikori whakatōpū me te  
au tōna e kakare ana ki te whānui o Te Ika Nui a Māui.*

anamata konihi kore | predator free future, kakare | agitate i.e., catalyst, korikori | writhing, korikori whakatōpū | collective movement i.e.  
collective impact, kōrure | change direction, kua aua atu te wā | for a long time, ngohe matatū | deliberate actions, panganga | propulsion  
tūtohu | acknowledge



## He hiku korikori, he hiku panganga, Te Hiku o Te Ika Nui a Māui

*The writhing tail of Māui's great haul, Te Hiku o Te Ika Nui a Māui*

*This saying acknowledges te Tai Tokerau as the tail of Te Ika Nui a Māui. Te Tai Tokerau has long been a catalyst for change with ripples of impact well outside te Tai Tokerau.*

*As the many communities of te Tai Tokerau consider deliberate actions towards a Predator Free future, this saying acknowledges the tail of the fish starting to move in unison, and it's collective impact for the whole of Te Ika Nui a Māui.*

## TĀHUHU KŌRERO

Ko ngā whakamine tangata whenua o te Tai Tokerau he tātai tapu kotahi ōna ki te taiao, heoi anō, he whānui ngā whakakino o ngā aupēhi ki runga o te tino rangatiratanga o te tangata whenua me tōna tātai ki te taiao.

He wāhi whakaatu tō tēnei pūrongo mō ngā mahi moroki noa hei kohikohi i ngā ngohe aronui o ngā whakamine tangata whenua o te Tai Tokerau, hei whakatōpū anō ki ngā rōpū Konihi Kore o te Tai Tokerau puta noa te rohe. Ehara ngā ngohe o roto nei hei mana nui rānei, hei whakakapi rānei i ngā tāwhāinga me te tino rangatiratanga o ngā whakamine tangata whenua o te Tai Tokerau.

He mea tāpae noa i ngā rarau uiuinga puta noa te tau 2020, ā, ko ngā mea tāpae he mea pōwhiri nā tētahi rōpū iti o te hunga hapū he ruruku o mua, he ruruku ā moroki noa ā rātou ki te taiao, he whātoro rātou ki ō rātou anō rangapū taiao ki te uiui atu:

*“He aha koia ōu nā aronui ki roto o tō rohe he hāngai ōna ki Konihi Kore 2050?”*

*“He aha koia ōu nā aronui mō ngā tau e rima ka tū mai nei, me kore e whai wāhi atu ki te mahere ngohe mō te Tai Tokerau?”*

I uia mai ēnei pātai i te huinga hanga pērā i te hia whakawā me te whakaputa pūrongo o Te Rōpū Whakamana i te Tiriti o Waitangi e nui nei te karawhiu haere puta noa te Karauna. Mō te porotēhi i kitea i ēnei marama tata nei hei urupare ki te whakaritenga o Te Kaunihera o te Tai Tokerau ki te Raki mō ngā Whaitua Horomata Hira (WHH), me kōrero ka tika, nā te mea he tini ngā kōrero whai pānga mō te pēhea pā anō o aua WHH ki ngā whenua Māori.

Kia hoki anō ki te kaupapa Konihi Kore 2050 me ōna ngohe nō tōna oroko whakaputa i te tau 2016, kua korekore noa he wāhi mō te tangata whenua o te Tai Tokerau ki roto o te ārahihanga, o te whakahoahoa me te manahautū o te kaupapa nei. Nō ngā tau tata nei i tohua ai te nui haere o te tautoko o ngā tāwhāinga o KK2050 i ngā kōrero mō te whaitua whakamōti e ārahina ana e ngā whakamine tangata whenua o Te Hiku, o Te Peowhairangi me Te Kaipara. Hāunga anō ēnei tauira kua kūiti tonu te whakapānga mai ki ngā whakamine tangata whenua mō KK2050 ki te Tai Tokerau, puta noa anō Te Motu whānui. Heoi anō tā tātou, me mātua whakatau pū anō te mōhio, mā ngā whakamine tangata whenua anō ngā whakamine tangata whenua e kōrero.

mana nui | representative, moroki noa | ongoing, ngohe aronui | priority actions, rangapū | network, rarau uiuinga | series of interviews  
ruruku o mua | prior commitments, ruruku ā moroki noa | ongoing commitments, tāhuhu kōrero | background, tāpae | contribute, tāwhāinga | goals  
Te Rōpū Whakamana i te Tiriti o Waitangi | Waitangi Tribunal, tino rangatiratanga | self-determination, wāhi whakaatu | snapshot  
Whaitua Horomata Hira | Natural Significant Areas, whaitua whakamōti | scale eradication, whakahoahoa | design, whakakapi | replace, whakakino | negative impact  
whakamine tangata whenua | tangata whenua grouping, whakatōpū | share, whakawā | hearings

## BACKGROUND

Tangata whenua groupings of te Tai Tokerau are connected by inalienable whakapapa to the taiao, however, the various interruptions to the self-determination of tangata whenua in their relationship with the taiao have left wide ranging impacts.

This report includes a snapshot of the ongoing work to collate the priority actions of tangata whenua groupings of te Tai Tokerau to share with the region wide Predator Free te Tai Tokerau groups. The actions contained are not representative, nor do they replace the goals and self-determination of tangata whenua groupings of Te Tai Tokerau.

Contributions have been made through a series of interviews within 2020, the contributions made were invited by a small team of hapū members with prior and ongoing commitments to the taiao who utilised their networks in their mahi taiao to ask questions:

*“What are your priorities which could align with Predator Free 2050 in your rohe?”*

*“What are your priorities over the coming 5 years, which can become part of a Tai Tokerau action plan”*

These questions were asked in a climate of the many Waitangi Tribunal Inquiries and resulting reports seeming to be gaining traction in the mechanics of Government. Protest action recently seen in the response to the implementation of Significant Natural Areas by the Far North District Council must also be mentioned, as many discussions included concerns on how these SNAs would affect Whenua Māori.

Turning to Predator Free 2050 and activities since its announcement in 2016, tangata whenua of Te Tai Tokerau have not been visible in its leadership, design, and ongoing management. In recent years, signs have indicated growing support for the goals of PF2050 with landscape scale eradication discussions being led by tangata whenua groups in Te Hiku, Eastern Bay of Islands, and the Kaipara. Aside from these examples, tangata whenua groups engagement with PF2050 in te Tai Tokerau or nationally has been minimal. However, it is important to note that at the end of the day, each tangata whenua group speaks for themselves.

## HE KAUPAPA MŌ NGĀ NGOHE ARONU I O TE TANGATA WHENUA

He whakarāpopoto tēnei mō ngā kaupapa o ngā ngohe aronui o te tangata whenua i kohia i ngā whiriwhiringa o te Hūrae 2020 ki te Mei o 2021.

### Huatakina mai he Rangapū Taiao mō te Tai Tokerau

- He hui hira hei whakakaupapa i a mea rangapū taiao hei whakahaere whiriwhiringa hira tōpū, hei whakatōpū mātauranga, hei tuitui pānui anō
- He whakakaupapa, he whakahaere wānanga taiao ā-tau hei whakatōpū mōhiohio ā-rohe mō te ārai kīrearea, mō te mahi taiao anō.

### He Whakatōpū Wheako

- He whakahui kopou mā ngā whakamine tangata whenua hei whakatōpū anō i ō rātou uara, whakaaweawe, aronui, whakakitenga anō mō te taiao ki roto i ō rātou anō rohe me te hāpori whānui, tae atu ki te marautanga ā-rohe ki ngā kura aunoa, ki ngā kura reo Māori, ki ngā kōhanga reo me ngā kōhungahunga anō.

### He Whakawhanake Pūmanawa

- He whakahoahoa, he tāuru moroki noa mō he kura kaitiaki hei whakawhanake pūmanawa mō te whakahaere konihi kore, mō ngā ahumahi hāngai noa, ā, katoa he mea tohutohu nā te mātauranga Māori.

### He Haere Takirua i Runga o te Wairua o Te Tiriti o Waitangi

- Kia whakatūturu mai ki runga i ngā whakamine tangata whenua te motuhake o te whakahaere me te tāuru mō KK2050 i ōna taumata ngohe katoa ki roto o te Tai Tokerau, puta noa anō Aotearoa. He wāhi anō hoki ki ngā hōtaka rangahau, ki te whakarato rauemi, ki te aromātai i te kaupapa, ka mutu, ki te tino rangatiratanga ki runga o ā mātou taonga katoa
  - Kia noho ko te Reo Māori hei reo ki te katoa o te rangapū KK2050 ki ōna taumata ngohe katoa
- Kia rato mai ai ki te katoa o KK2050 he ako whakangungu mō Te Tiriti o Waitangi.

### Wānanga Mātauranga

- He pūtea kopou hei whakawhanake tonu, hei whakahaumanu anō i ngā mōhiohio, i ngā tikanga, i te tuku ihotanga mai o te mātauranga taiao puta noa ngā whakamine tangata whenua, ā, ka whakatūturu i te whakatōpū ki runga i ngā maru tika puta noa te rangapū KK2050.

### Pokapū Taiao ā-Rohe

- He pokapū ā-rohe mō te whakarato ako whakangungu, mō te whakarato rauemi, mō te rangapū hāpori kia riro ai i te katoa o te hāpori te mōhiohio, te mātauranga me ngā rauemi hei tomo ki roto o te mahi ārai kīrearea.

ahumahi | industries, ako whakangungu | training, ārai kīrearea | pest control, aromātai | evaluative, hāpori | community, hōtaka rangahau | research programme, huatakina | establish, Kaupapa | theme kura kaitiaki | ranger school, marautanga ā-rohe | localised curriculum, maru tika | appropriate protections, mea rangapū taiao | proposed taiao network, mōhiohio ā-rohe | regional information motuhake | independent, pokapū taiao ā-rohe | regional environmental hub, pūtea kopou | dedicated resourcing, rato | provide, taumata ngohe | scales of action, tāuru | input, tohutohu | informed uara | values, whakaaweawe | drivers, whakahaumanu | revive, whakahui kopou | dedicated campaign, whakakaupapa | outline, plan, design, whakakitenga | vision, whakatōpū wheako | sharing stories i.e., sharing experiences, whakawhanake pūmanawa | workforce development, whakarato rauemi | allocate resource, whiriwhiringa hira tōpū | discussions of collective significance

## TANGATA WHENUA PRIORITY ACTION THEMES

Below is a summary of the tangata whenua priority action themes which were collated in discussions from July 2020 to May 2021.

### Establish te Tai Tokerau Taiao Network

- Large hui to outline a proposed taiao network for coordinating discussions of collective significance, share knowledge and pānui network
- Plan and host an annual wānanga taiao for regional information sharing on pest control and mahi taiao.

### Sharing our Story

- A dedicated campaign whereby respective tangata whenua groupings can share their values, drivers, priorities and vision for the taiao in their rohe with the wider community as well as in localised curriculum with schools, kura, kohanga and ECE.

### Workforce Development

- The design and ongoing input to a ranger school for workforce development in predator free operations and aligned industries, informed by mātauranga Māori.

### Haere Takirua in the Spirit of Te Tiriti o Waitangi

- Ensure tangata whenua groupings have independent oversight of and input into PF2050 at all scales of action in Te Tai Tokerau, and across New Zealand. This includes research programmes, resource allocation, evaluative review of the kaupapa and the unqualified exercise of self-determination over our taonga
- Where Te Reo Māori is made part of the entire PF2050 network at all scales of action
- Where Te Tiriti o Waitangi training is offered to all within the PF2050 network.

### Wānanga Mātauranga

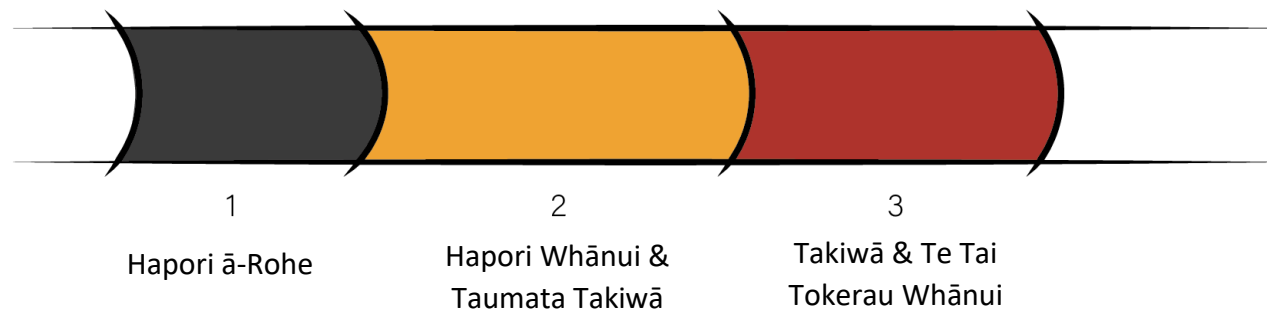
- Dedicated resourcing to continue to grow and revive understandings, practices, and transmission of mātauranga taiao within tangata whenua groupings, and ensure it is shared with appropriate protections with the wider PF2050 network.

### Regional Taiao Hubs

- Localised hubs offering the training, equipment, and community network for all in the community to access the knowhow, education and resources to get started in pest control.

**HE UNAUNAHĪ O TE IKA NUI he pou whakahono ngohe, he pou whakarato rauemi**

Ka urupū ngā aronui o te tangata whenua ki roto anō o ngā tini taumata whaitua ki tā te whakapapa, ki tā te mana whakaaweawe o ngā whakamine tangata whenua. Kua whakakaupapa mai ngā tohu o te pou unaunahi nei hei tohutohu mō ngā rangapū ā-ngohe ki roto o te tangata whenua o te Tai Tokerau, mā ngā huarahi e whakamana ai i ō tātou whakapapa, i ō tātou whakaaweawe kia urupū ai, kia tau mai ai anō te ora. Ka hoatu te pou unaunahi nei hei whiringa mō tōna wā mō te whakarato rauemi e whakamana ai i ngā whakamine tangata whenua katoa kia hiwa tonu ai i roto i ō rātou anō tino rangatiratanga mō te taiao ki anamata, ā, ka whakarato mai i ngā ngohe i runga i ngā whaitua e toru nei.



**Tuatahi** – he tangata takitahi; he whānau; he kāinga; he marae; he whenua Māori; he kōmiti Māori e mahi ana ki ō rātou taumata hapori; hei tohutohu anō mō ngā rangapū o te Unaunahi Tuarua me te Unaunahi Tuatoru

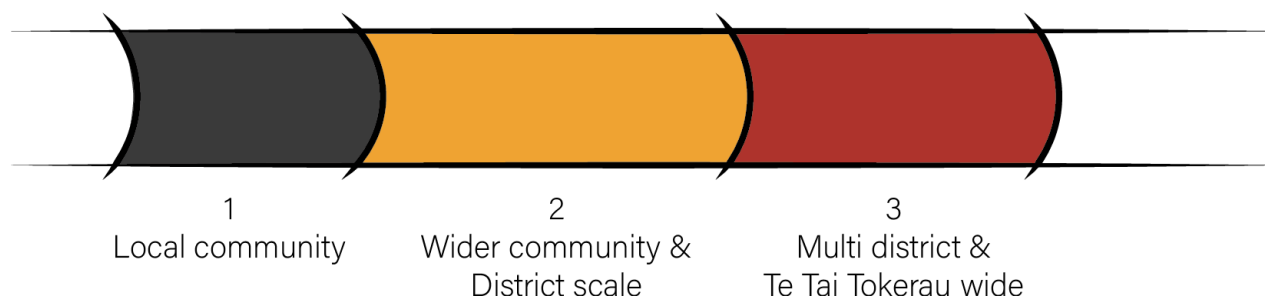
**Tuarua** – he whakamine marae; he hapū, he whakamine hapū; he whakamine whenua Māori; he whakamine takiwā; he takiwā Māori e mahi ana ki te whānui o ngā taumata hapori, taumata takiwā anō; he tohutohu nā Unaunahi Tuatahi me te tohutohu mō Unaunahi Tuatoru o roto o ngā whakamine māori

**Tuatoru** – he iwi; he whakamine iwi me ngā rangapū ahumahi Māori o te rohe whānui; he ratonga mātauranga me ngā whakarātonga e mahi ana i ngā takiwā me ngā taumata ngohe o te Tai Tokerau whānui; hei tohutohu, hei whakarato, hei whakatairanga mō Unaunahi Tuatahi me Unaunahi Tuarua

ahumahi | industry, anamata | future, hapori ā-rohe | local community, he pou whakahono ngohe, he pou whakarato rauemi | interconnected action & resourcing framework, mana whakaaweawe | spheres of influence, pou unaunahi | unaunahi framework, rangapū ā-ngohe | action networks, ratonga mātauranga | education providers, taumata hapori | community scale, taumata ngohe | scales of action, taumata rohe | district scale, taumata takiwā | district scales, taumata whaitua | geographical scales, tohutohu | guide, urupū | exist, whakamine māori | natural groupings, whakarātonga | service providers

### HE UNAUNAHĪ O TE IKA NUI *an interconnected action & resourcing framework*

Tangata whenua priorities exist within tangata whenua groupings of many geographical scales as defined through whakapapa and spheres of influence. The following unaunahi descriptions have been proposed to guide action networks among tangata whenua of te Tai Tokerau, in ways which enable our whakapapa and spheres of influence to be operating and achieving wellness. This unaunahi framework is offered for consideration in the future resourcing to enable all tangata whenua groupings to be active in their self-determined futures in the taiao, where actions are resourced across the following three geographical scales.



**Tuatahi** – individual tangata; whānau; kāinga; marae; whenua Māori; Māori committees operating at local community scales; informing Unaunahi Tuarua and Unaunahi Tuatoru groupings

**Tuarua** – marae groupings; hapū and hapū collectives; whenua Māori collectives; takiwā groupings; Māori districts operating at a wider community and district scale; informed by Unaunahi Tuatahi and informing Unaunahi Tuatoru within natural alliances

**Tuatoru** – Iwi; Iwi collectives and Region wide Māori industry sector groups, education and service providers operating at multi district and Te Tai Tokerau wide scales of action, informed by, delivering to and advocating on behalf of Unaunahi Tuatahi and Tuarua

WHAKAMINE TANGATA WHENUA TAI AO O TE TAI TOKERAU

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>E toru noa ngā hui matawhānui hei tono tautoko mō te ‘tikanga whakahaere’ mō te Rangapū Tangata Whenua Taiao o te Tai Tokerau, ā, kia tini anō he tāuru</p> <p>Whakakaupapa whai tikanga mai he rangapū whakawhitiwhiti ki tā te hoahoa tangata whenua ‘tikanga whakahaere’ mō te rangapū taiao</p> <p>Whakahuia te whaka-mahere o te Rangapū Tangata Whenua Taiao, ā, kohia tonutia ngā rarau he hāngai ki KK2050</p> <p>Mā te Ratonga KK2050 me Te Papa Atawhai e tāpae ki te hui matua ‘he aha te KK2050, ā, he aha ōna mō ngā ngohe aronui o te tangata whenua mō te taiao’ i ngā hui whakataki</p>	<p>(Tuatahi) He whakamana i te whakapā kanohi-ki-te-kanohi; he whakarato āwhina waka hei toro hui matawhānui; hei whakakaupapa anō mō te hanga me te tū o te Rangapū Tangata Whenua Taiao o te Tai Tokerau me ōna haepapa haere noa</p> <p>He mea tūtohu whakamine e te tangata whenua mō te tōpū ngohe hāngai ki KK2050 hei whakamahere</p> <p>(Tuarua) He whakakaupapa, he whakahaere hui matawhānui, hei whakakaupapa mō te hanga me te tū o te Rangapū Tangata Whenua Taiao o te Tai Tokerau he mea toko nā Unaunahi Tuatoru</p> <p>(Tuatoru) He tae ā-tinana, he tāuru, he toko mō Tuatahi me Tuarua hei tāuru anō mō te hanga me te tū o te Rangapū Tangata Whenua Taiao o te Tai Tokerau</p> <p>Hei toko mō te Tuarua ki te whakakaupapa i ngā hui matawhānui, hei tautoko i te tae ā-tinana i roto i ngā rangapū taiao o te wā nei ki ō rātou anō rohe</p> <p>He tōpū whakatairanga, he tōpū rautaki mō te tikanga whakahaere e haere ake ai, mō te tū anō o te Rangapū Tangata Whenua Taiao o te Tai Tokerau me ngā ngohe puta noa te tōpū mahi taiao</p>	<p>He pānga tangata whenua o mua mō Konihi Kore 2050 ki tā te rārangi o te Tai Tokerau</p> <p>He hoa Tiriti o Waitangi ki tā te rārangi o Te Tari Atawhai</p> <p>He whakauru ki tā Te Kōmiti Kaitohutōhu Māori o te Tai Tokerau mō Te Kaunihera ā-Rohe o te Tai Tokerau</p> <p>He whakamine ki tā ngā whakamana ā-ture</p> <p>He rangapū whakawhitiwhiti o te wā nei mō te tangata whenua me ngā whenua Māori anō</p>	<p>Kia whai wāhi mai ai he rauemi, he mana whakahaere anō ki ngā whakamahere hui me ngā ‘tikanga whakahaere’ mō tētahi rōpū whakawhanake</p> <p>He whakawhanake mahere whakawhitiwhiti mō te rangapū hei tōna huataki ake</p> <p>He rauemi mō te whakatinana haere noa o ngā ngohe matua mō te rangapū, hei tauira mai - he pānui rangapū; he wānanga; he whakamahere; he anga kōhi raraunga; he arotake 5 tau mō Te Tiriti o Waitangi.</p>

anga kōhi raraunga | data collection framework, hui matawhānui | large open hui, kohikohi moroki | ongoing collection, mahere whakawhitiwhiti | communications plan  
mana whakahaere | administration pānui rangapū | network notices, rangapū whakawhitiwhiti | communications network, rōpū whakawhanake | development team, tāpae | present  
tāuru | input, tikanga whakahaere | terms of reference, tōpū mahi | aligned workstreams, tōpū ngohe | aligned actions, tōpū rautaki | strategic alignment  
tōpū whakatairanga | reciprocal advocacy, tūtohu whakamine | identify groupings, whai tikanga | fit for purpose, whakamahere hui | event logistics, whakamana ā-ture | statutory  
acknowledgements, whakarato waka | transport support, whakauru | membership



TE TAI TOKERAU TANGATA WHENUA TAIAO NETWORK

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Three (minimum) large open hui to invite tautoko on 'terms of reference' for Tai Tokerau Tangata Whenua Taiao Network, with alternative forms of input offered</p> <p>Fit for purpose communications network established, as outlined in tangata whenua designed 'terms of reference' for taiao network</p> <p>Hosting mapping of Tangata Whenua Taiao Network and ongoing data collection of PF2050 aligned actions</p> <p>PF2050 Ltd and DoC to present to large hui 'what is PF2050 and what will it do for tangata whenua priorities for the taiao in initial hui</p>	<p>(Tuatahi) are enabled via face-to-face engagement; transport support to attend large open hui; and inform the creation and role of Te Tai Tokerau Tangata Whenua Taiao Network and ongoing functions</p> <p>Tangata whenua identify groupings for collaborative PF2050 aligned actions to be mapped</p> <p>(Tuarua) Hosting and facilitating large open hui to inform the creation and role of Te Tai Tokerau Tangata Whenua Taiao Network, supported by Unaunahi Tuatoru</p> <p>(Tuatoru) Attendance, input, and assisting tuatahi, tuarua input into the creation and role of Te Tai Tokerau Tangata Whenua Taiao Network</p> <p>Assisting tuarua hosting of large open hui and supporting attendance among existing taiao networks in respective rohe</p> <p>Reciprocal advocacy and strategic alignment for the ongoing terms of reference and role of Te Tai Tokerau Tangata Whenua Taiao Network and activities across workstreams for the taiao</p>	<p>Previous tangata whenua engagement for PF2050 in Te Tai Tokerau list</p> <p>DoC Treaty Partners list</p> <p>RC TTTMAC membership</p> <p>Statutory acknowledgements groupings</p> <p>Existing tangata whenua and whenua Māori communications networks</p>	<p>Event logistics and network 'terms of reference' to include resource and administration for a development team</p> <p>Communications plan development for network once established</p> <p>Resource for ongoing implementation of core network activities for example could include pānui network, wānanga, mapping, data collection frameworks, Te Tiriti o Waitangi 5 Year audit</p>

**WĀNANGA KAUPAPA MĀORI MŌ TE ĀRAI KĪREAREA**  
(Nā te Māori, mō te Māori, ki a te Māori anō)

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
He taki hui (ā tau) wānanga kaupapa Māori mō te Tai Tokerau whānui mō rātou he whakahaere ngohe hāngai ki KK2050	<p>(tuatahi) He whakamana kia whai wāhi atu, kia tāuru anō ki ngā wānanga, he whakarato āwhina waka anō</p> <p>(tuarua) He tautoko mō te tonono whakahaere</p> <p>Mā te kaiwhakahaere me te whānui o te rangapū taiao e whakahoahoa hōtaka wānanga</p> <p>Hei tāuru mō te whakahoahoa hōtaka wānanga ki tā te tohutohu o te Unaunahi mō ngā whānau me ngā hapū</p> <p>(tuatoru) He tautoko, he tāuru anō mō te hōtaka wānanga</p>	<p>Ngā rōpū me ngā kaimahi taiao</p> <p>Te Aho Tūroa</p>	<p>He whakatū rōpū whakaruruku mai te whānui o te rohe hei taituarā mō ngā rōpū whakahaere hui</p> <p>He ruruku mō te rauemi whakamahere, mō te mana whakahaere anō, tae atu ki te whakarato āwhina waka mō te hunga whakauru</p>

hunga whakauru | attendees, members, mana whakahaere | administration, rauemi whakamahere | logistics resource, rōpū whakaruruku | coordination team, ruruku | coordinate, tāuru | input, kaiwhakahaere | host, administer, whakahoahoa hōtaka | develop wānanga programme

**KAUPAPA MĀORI PEST CONTROL WĀNANGA**  
**(By Māori, For Māori, With Māori)**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
Regular (annual) kaupapa Māori Tai Tokerau wide wānanga for those delivering PF2050 aligned actions	<p>(tuatahi) Empowered to attend and contribute to wānanga, transport assistance made available</p> <p>(tuarua) Invited to tono for hosting</p> <p>Host to develop wānanga programme with wider taiao network team</p> <p>Contribute to wānanga programme development informed by Te Unahi Whānau, Hapū</p> <p>(tuatoru) Support, contribute to wānanga programme</p>	<p>Ngā rōpū me ngā kaimahi taiao</p> <p>Te Aho Tūroa</p>	<p>Coordination team from across the region to be formed in support of hosting rōpū</p> <p>Logistics resource coordination and administration including transport for attendees</p>

TANGATA WHENUA HAUPŪ MOTUHAKE

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Whakaaratia mai, whakapūmautia mai he haupū rauemi mō ngā ngohe tangata whenua e tohutohua ana nā te Rangapū Taiao o te Tai Tokerau, nā tana whakakitenga, nā ōna uara, nā ngā mātāpono taupua me ngā ngohe aronui anō e tautohu mai ai</p> <p>Whakawhanaketia mai he tono tauhou, he whiringa pūrongo e whakamana ai i te tino rangatiratanga o te mana i te whenua, ā, kia tāharahara ai i ngā ārai tono pūtea</p> <p>Meinga kia torowhānui te toro hei whakarato i te tomo ki aronui anō he hāngai ōna ki te taiao</p>	<p>(tuatahi) He whakawhanake tono rauemi e pūtake mai i ngā aronui ki tā te tino rangatiratanga</p> <p>(tuarua) He whakaemi mai, he hāpai anō o te whakatōpū aronui hāngai ki ngā aronui taiao</p> <p>(tuatoru) He hāpai i te whakakāhore ārai e haukoti nei i te tono rauemi, i te tino rangatiratanga rānei o te tangata whenua kia kaneke tonutia ai ōna aronui</p> <p>He hāpai i te ara torowhānui hei whakarato mō ngā aronui whakahāngai</p>	<p>Ko ngā kaiwhakarato pūtea, ko ngā kaiwhakarato rauemi o te wā tonu nei</p>	<p>He reo pōwhiri ki ngā kaiwhakarato pūtea ki te tautoko i te whakarato rauemi ki tā te tino rangatiratanga o te tangata whenua</p> <p>Me whakatūturu te whakarato rauemi ki tā te tino tohutohu o Tuatahi me Tuarua, ki tā ngā mātāpono whakahaere anō</p>

hāpai | advocate, haupū motuhake | specific investment, haupū rauemi | resource stream, kaiwhakarato pūtea | resource holders, kaneke | progress, mātāpono taupua | guiding principles  
mātāpono whakahaere | operating principles, ngohe aronui | priority actions, ngohe tangata whenua | tangata whenua actions, tāharahara | reduce, tautohu | identify, tono tauhou | novel requests

### TANGATA WHENUA SPECIFIC INVESTMENT

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Initiate and confirm resource stream for tangata whenua actions informed by Tai Tokerau Taiao Network, vision, values, guiding principles and further identified priority actions</p> <p>Develop novel tono and reporting options which enhance self determination of mana I te whenua and reduce barriers to receiving funding</p> <p>Optimise holistic approach to resource access with other priorities which are aligned with the taiao</p>	<p>(tuatahi) Develop self-determined priority informed 'tono' for resource</p> <p>(tuarua) Collate and advocate for collective priorities from taiao aligned priorities</p> <p>(tuatoru) Advocate for removal of barriers which restrict access to resource or reduce self-determination of tangata whenua in progressing priorities</p> <p>Advocate for holistic approaches in resourcing aligned priorities</p>	<p>Existing funders and resource holders</p>	<p>Invite current resource holders to contribute to tangata whenua self-determined resource allocation</p> <p>Ensure resource allocation is well informed by tuatahi, tuarua priorities and operating principles</p>

PĀTAKA MĀTAURANGA TAIAO

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Whakatūtuturia mai he rauemi kopou hei whakawhanake pātaka mātauranga taiao ki roto o Unaunahi Tuatahi me Unaunahi Tuarua</p> <p>Hei tauira mai, he kōrero tuku iho; he rongoā; he māra; he ingoa whenua; he whaitua hira; he whakamine tangata whenua</p> <p>He whakawhanake āheinga ringatohu hei toko mō te whakapūmau me te tuku iho anō o te mātauranga taiao, hei tauira mai - he whakamahere; he whakapūranga; he rangahau ā-waha, he rangahau tuku iho; he mahere haumarū; ā, he mana tohutohu, he mana whakahaere anō mō te mana whakairo hinengaro</p>	<p>(tuatahi, tuarua) He kaiwhakawhiwhi ki te whakarato whakaukautu me te whai wāhi atu ki ngā ringatohu mō ngā huarahi mana motuhake hei tuku iho i te mātauranga taiao ki ōna anō whakatupuranga i roto i ngā rangapū mana i te whenua</p> <p>He āta tautohu tikanga mō te whakatōpū mātauranga ki rangapū anō, ā, he maru anō mō te mana whakairo hinengaro</p> <p>He āta whiriwhiri, he āta whakakotahi anō i ngā aronui tangata whenua, he mea tohutohu nā te mātauranga</p> <p>(tuatoru) He hāpai i te maru mō te mātauranga taiao whenua ki tā Unaunahi Tuatahi, ki tā te Tuarua anō</p>	<p>Ngā Whenua Rāhui Mātauranga Kura Taiao Te Aho Tūroa Mātauranga Marae Ora o Te Tari Taiwhenua</p>	<p>He reo pōwhiri ki ngā kaiwhakarato pūtea ki te tautoko i te whakarato rauemi ki tā te tino rangatiratanga o te tangata whenua</p> <p>He pūnaha mō te tōpū whakamana o te mātauranga ki te Rangapū Tangata Whenua Taiao o te Tai Tokerau, ki ngā rangapū anō o KK2050, ka mutu, he whakahui mō te whakatōpū wheako</p>

āheinga ringatohu | technical capability, hāpai | advocate, kaiwhakarato pūtea | resource holders, mahere haumarū | safety plan, mana tohutohu | advisory, mana whakahaere | administration, mana whakairo hinengaro | intellectual property, pūnaha | system, rangahau ā-waha | oral research, rangahau tuku iho | traditional research, rauemi kopou | ring-fenced resource, tōpū whakamana | consented sharing, whaitua hira | sites of significance, whakahui | campaign, whakamahere | mapping, whakamine tangata whenua | tangata whenua groupings, whakarato rauemi | resource allocation, whakarato whakaukautu | sustainable long-term resourcing, whakapūranga | archiving, whakatōpū mātauranga | sharing mātauranga, whakatōpū wheako | sharing stories i.e., sharing experiences, whakatūturu | ensure, torowhānui | holistic, uara | values, whakakitenga | vision, whakarato rauemi | resource allocation, whakatūturu | ensure, whiringa pūrongo | reporting options

### PĀTAKA MĀTAURANGA TAIAO

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Ensure ring fenced resource available for growing pātaka mātauranga taiao among Unaunahi Tuatahi &amp; Tuarua</p> <p>Examples include historical knowledge; rongoā; māra; place names; sites of significance; tangata whenua groupings</p> <p>Technical capability building to support retention and transmission of mātauranga taiao available eg, mapping, archiving, oral and traditional research, safety plans, Intellectual Property advice and administration</p>	<p>(tuatahi, tuarua) Recipients of sustainable long-term resourcing and access to technical support for the self-determined methods of intergenerational transmission of mātauranga taiao within mana i te whenua groupings.</p> <p>Identifying appropriate tikanga for sharing of mātauranga with others and intellectual protections</p> <p>Consider and integrate tangata whenua priorities informed by mātauranga</p> <p>(tuatoru) Advocate for mātauranga taiao whenua protections held by Unaunahi Tuatahi, Tuarua</p>	<p>Ngā Whenua Rāhui Mātauranga Kura Taiao Te Aho Tūroa Mātauranga Marae Ora DIA funding</p>	<p>Invite current resource holders to contribute to tangata whenua self-determined resource allocation</p> <p>System for consented sharing of mātauranga with te Tai Tokerau Tangata Whenua Taiao Network and PF2050 network members and storytelling campaign</p>

**HE RAUEMI MOTUHAKE MŌ TE TANGATA WHENUA HEI ĀRAHI KIA HAUKAHA AI NGĀ TŪHONO KI NGĀ RŌPŪ KĀWANA KORE/ RŌPŪ HAPORI  
WHAI HONONGA KI KONIHI KORE 2050 KI ROTO I Ō RĀTOU ANŌ ROHE**

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
He whakarato rauemi mō te tangata whenua e whakahui ana me ngā rōpū Kāwana kore/ rōpu hapori, he wāhi whakahaere ngohe hāngai a rātou ki KK2050 ki roto i ō rātou anō rohe	(tuatahi, tuarua) he whakarato rauemi mō ngā whakamine tangata whenua hei whakahaere hui me ngā rōpū Kāwana kore/ rōpū hapori he wāhi ō rātou mō te whakahaere ngohe hāngai ki KK2050 ki roto i ō rātou anō rohe, ā, kia whakarato motuhake mai ai hei haukaha te tūhono whakauka ina tono ai ngā whakamine tangata whenua	He Taratī Tiaki Whenua + He Rōpū Tiaki Whenua  Forest & Bird  Ngā hinonga KK2050 ā moroki noa  Kiwi Coast  Ngā Taratī Whāomoomo  Kaipupuru o ngā kirmana pae tawhiti me ngā whakahei mō ngā whenua whāomoomo matawhānui o Te Tari Atawhai  Te Kaunihera ā-Rohe o te Tai Tokerau  Ngā Kaunihera ā-Rohe	He pūtea pānga tangata whenua hei tuku mō te whakaū tūhono kotahi

pūtea pānga tangata whenua | tangata whenua engagement fund, rauemi motuhake | independent resource, rōpū hapori | community groups  
rōpū Kāwana kore | non-government organisations, whakahei | concession, whakamine tangata whenua | tangata whenua groupings, whakarato motuhake | independent resource  
whakarato rauemi | resource allocation, tūhono kotahi | direct relationship tūhono whakauka | long lasting, whāomoomo | conservation  
whenua whāomoomo matawhānui | public conservation land



**INDEPENDENT RESOURCE FOR TANGATA WHENUA TO LEAD RELATIONSHIP STRENGTHENING WITH NGO/COMMUNITY GROUPS  
ASSOCIATED WITH PF2050 IN THEIR OWN ROHE**

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
Allocation of resource for tangata whenua hosting of NGO/community groups who are carrying out PF2050 aligned actions in their respective rohe	(tuatahi, tuarua) resource made available for tangata whenua groupings to host existing NGO/community groups carrying out PF2050 aligned actions in their respective areas and be independently resourced to contribute to long lasting relationships upon request by tangata whenua groupings	Landcare Trust + Landcare groups Forest & Bird PF2050 existing projects Kiwi Coast Conservation Trusts Long term contract and concession holders on DoC PCL NRC District Councils	Tangata whenua engagement fund made available for direct relationships to be formed

### RANGAHAU RONGOĀ O TE TAIAO

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
He whakarato rauemi mō ngā mātanga rongoā puta noa te Tai Tokerau hei whiriwhiri rongoā hou, hei whiriwhiri tukanga hou me ngā hangarau hou mō te ārai kīrearea, tae atu ki te whakamahu tangata mā ngā ngohe hāngai ki KK2050	(tuatahi, tuarua, tuatoru) He whiriwhiri rongoā taiao ki roto wānanga, ā, hei ōna wā tika, tautoko i ngā āhei whakatōpū rangahau	Ko ngā rangapū rongoā	He reo pōwhiri ki ngā kaiwhakarato pūtea ki te tautoko i te whakarato rauemi i tā te tino rangatiratanga o te tangata whenua

### MŌ KK2050 ME MANA KI TE TANGATA WHENUA TE TAKI WHAKAHOAHOA, TE TAKI WHAKARURUHAU ME TE TAKI WHAKAHAERE

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
He whakatau paearu mō ngā ngohe katoa o Te Ratonga Kōnihi Kore 2050 kia mana ai i runga i te taki whakahoahoa, i te taki whakaruruhau, i te taki whakahaere mō ngā hinonga katoa ki roto o te Tai Tokerau, ā, he wāhi anō ōna hei arotake i ngā tūhono Te Tiriti o Waitangi puta noa nga hinonga ā moroki noa	He whakarato motuhake mō te katoa o ngā Unaunahi o ngā hinonga KK2050 ā moroki noa o te Tai Tokerau hei whakapānga mōna ki Te Kaunihera ā-Rohe o te Tai Tokerau, arā ko te mana hinonga o te wā nei mō KK2050	Te Kaunihera ā-Rohe o te Tai Tokerau  Te Ratonga Kōnihi Kore 2050  Te Tari Atawhai	He whakarato rauemi mō ngā whakamine tangata whenua i ngā wāhi Kōnihi Kore 2050 hei whakapānga mōna ki ngā mana hinonga anō

āhei whakatōpū rangahau | shared research opportunities, ārai kīrearea | pest control, hangarau | technologies, kaiwhakarato pūtea | resource holders  
mātanga rongoā | rongoā practitioners, tukanga | method, whakamahu | heal, whakarato rauemi | resource allocation, whiriwhiri | consider

ā moroki noa | existing, arotake | revise, hinonga | project, mana hinonga | project holder, taki whakahoahoa | co-design, taki whakaruruhau | co-governance, taki whakahaere | co-management, Te Ratonga Kōnihi Kore 2050 | Pest Free 2050 Limited, tūhono | relationship, whakapānga | engage, whakarato motuhake | independent resource, whakarato rauemi | to resource, whakatau paearu | establish criteria

**RANGAHAU RONGOĀ O TE TAIĀO**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
Resource allocation for existing rongoā practitioners' networks across Te Tai Tokerau to consider alternate remedies, pest control methods and 'technologies' including healing tangata through PF2050 aligned actions	(tuatahi, tuarua, tuatoru) consider rongoā taiao within wānanga and when appropriate contribute towards shared research opportunities	Existing rongoā practitioners' networks	Invite current resource holders to contribute to tangata whenua self-determined resource allocation

**ENSURE PF2050 ARE CO-DESIGNED, CO-GOVERNED AND CO-MANAGED WITH TANGATA WHENUA**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
PF2050 Ltd criteria is established that all PF2050 actions include co-design/governance/ management for projects within te Tai Tokerau, and ability to revise Te Tiriti o Waitangi relationships with existing projects	All Unaunahi in existing PF2050 projects in te Tai Tokerau are resourced independently to engage with NRC as current PF2050 project holder	NRC PF2050 Ltd DoC	Resource for those tangata whenua groupings in existing PF2050 areas to engage with existing project holders

HE AKO KI TE KATOA O TE RANGAPŪ KK2050 MŌ HE WHAKAPUTANGA, MŌ TE TĪRITI O WAITANGI ANŌ

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
Kia whai wāhi atu ai ko te hunga whakauru katoa o te Tai Tokerau rangapū mō Kōwhiri Kōwhiri 2050 ki ngā ako mō He Whakaputanga, mō Te Tīriti o Waitangi anō, he mea taki whakahaere e te tangata whenua	He whakauru, he whakarato kopou anō mō te taki whakahaere mō te tangata whenua tōmīna ki te taki whakahaere i te ako mō Te Tīriti o Waitangi	Te Rangapū o te Tai Tokerau mō Waitangi	He rauemi anō, he whakarato anō – he pūtea mō ngā rōpū tōmīna

WHAKAWHANAKE I TE REO MĀORI KI ROTO O TE KK2050

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
Kia whai wāhi atu he āheinga mō te whakawhanake i te whakamahi o te Reo Māori ki roto i ngā ngohe hāngai ki KK2050, mō te hunga whakauru anō o te rangapū KK2050	(ngā unahi katoa) He mana ārahi mō te whakamahi i te Reo Māori ki roto i ngā mita ā-rohe mō ngā ngohe hāngai ki KK2050 me ngā rangapū hunga whaipānga, kia whiwhi rauemi hei whakawhanake mō te whakamahi i te Reo Māori	Te Mātāwai Ngā rautaki ā-iwi mō te Reo Māori Kura Kaupapa Māori o Te Tai Tokerau Ngā Kura ā-Iwi o Te Tai Tokerau Te Aho Tūroa	He rauemi kopou mō te whakamahi i te Reo Māori, mō te whakamāori anō i roto i te whānui o ngā ngohe hāngai ki KK2050 pērā i ngā takunetanga, i ngā putanga pānui, i ngā tauira, i ngā rauemi, i ngā mahi whakangungu pūmanawa, i te mātauranga tae atu ki ngā mahi e ārahina ana e te tangata whenua

hunga whakauru | members, rauemi | resource, rōpū tōmīna | willing groups, taki whakahaere | co-facilitate, tōmīna | willing, whakarato kopou | dedicated resource  
whakauru | access

āheinga | opportunities, hunga whai pānga | stakeholders, hunga whakauru | members, mahi whakangungu pūmanawa | capability building actions, mita ā-rohe | local dialects  
ngohe | activities, putanga pānui | publications, rangapū | network, rauemi | resource, rauemi kopou | dedicated resource, rautaki ā-iwi | tribal strategic plan, takunetanga |  
events, tauira | templates

HE WHAKAPŪTANGA ME TE TĪRITI O WAITANGI TRAINING FOR ALL IN PF2050 NETWORK

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
That all members in the PF2050 Te Tai Tokerau network have access to He Whakapūtanga me Te Tiriti o Waitangi Education co-facilitated by tangata whenua	Access and resource dedicated to co-facilitated training for tangata whenua willing to co-facilitate Treaty Training workshops	Network Waitangi Tai Tokerau	Additional resource required - open fund for willing groups

GROW TE REO MĀORI IN PF2050

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
Include opportunities for growth in the use of Te Reo Māori in PF2050 aligned activities and PF2050 network members	(all unaunahi) Leadership in use of Te Reo Māori in local dialects for PF2050 aligned actions and stakeholder networks, access to resource for growing the use of Te Reo Māori	Te Mātāwai Iwi Reo Strategies Kura Kaupapa Māori Ngā Kura a Iwi o Te Tai Tokerau Te Aho Tūroa	Dedicated resource for Te Reo Māori use and translation in diverse PF2050 aligned activities eg events, publications, templates, resources, capability building actions, education including tangata whenua led actions

### HE WHAKAWHANAKE PŪMANAWA TAIAO

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Whakakaupapatia mai he kura ‘kaitiaki’ he tohutohu mai nā te akoranga ā-rehe Māori mō te whakawhanake matua i te pūmanawa mō ngā ahumahi hāngai ki te ārai kīrearea, ki te ngāherehere, ki te haumarū koiora, ki te ngāherehere taketake</p> <p>Whakakaupapatia mai he tauira taimahi whakaukauka mō te pūmanawa ārai kīrearea, ā, he mahi tahi me ngā ahumahi he torowhānui mō ngā aronui taiao</p> <p>Whakareingatia mai ngā mahi me te whakauru o te mātauranga Māori ki roto i te mahi ārai kīrearea me ngā ahumahi hāngai mā te whakawhanake i ngā tauira ako motuhake mō te whakapapa, mō te maramataka, mō te ao wairua anō</p>	<p>(ko ngā unaunahi katoa) he tautohu pia (tuatoru) he whakaemi āhei akoranga ā-rehe me ngā rangapū kaiwhakawhiwhi mahi, he whakahaere whakawhanake kōwae mō ngā Kaiwhakahaere Akoranga Ahumahi, ā, he wāhi whakauru mā ngā kaiwhakawhiwhi mahi me ngā ahumahi tūhono hei hanga tauira pūmanawa whakatōpū ahumahi</p>	<p>Kaupapa Pia o Te Puni Kōkiri</p> <p>Manatōpū Ngāherehere Māori o te Tai Tokerau</p> <p>Tai Tokerau Wānanga</p> <p>Te Whakarato Kaiwhakahaere Akoranga Ahumahi</p> <p>Te Kaunihera ā-Rohe o te Tai Tokerau</p>	<p>He tautoko mō te taupua ki runga i ngā pia</p> <p>He hui taumata mō ngā Kaiwhakawhiwhi Mahi Ārai Kīrearea hei pōwhiri anō ki ngā akoranga pūmanawa ā moroki noa o roto o ngā ahumahi hāngai</p>

ahumahi | industries, āhei akoranga ā-rehe | trade training opportunities, akoranga ā-rehe | trade training, akoranga pūmanawa | workforce training, ārai kīrearea | pest control, aronui taiao | environmental priorities, haumarū koiora | biosecurity, kaitiaki | ranger, kaiwhakawhiwhi mahi | employers, Kaiwhakahaere Akoranga Ahumahi | Industry Training Organisation, ngāherehere | forestry, ngāherehere taketake | indigenous forestry, pūmanawa ārai kīrearea | pest control workforce, rangapū kaiwhakawhiwhi mahi | employer network, tauira ako motuhake | specific training modules, tauira taimahi whakaukauka | sustainable employment model, tauira pūmanawa whakatōpū ahumahi | cross industry workforce model, tautohu pia | cadet identification, torowhānui | holistic, whakareinga | enhance whakawhanake kōwae | module development, whakawhanake matua | advanced development, whakawhanake pūmanawa | taskforce development

### TAIAO WORKFORCE DEVELOPMENT

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Establishing Māori trade training informed 'ranger' school for advanced workforce development aligned with associated industries e.g., pest plant control, forestry, biosecurity, and indigenous forestry</p> <p>Ensure sustainable employment model for pest control workforce in collaboration with other industries and holistic approach to taiao priorities</p> <p>Enhance practice and application of mātauranga Māori in pest control and associated industries through developing specific training modules on whakapapa, maramataka, te ao wairua</p>	<p>(all unaunahi) cadet identification (tuatoru) collate trade training opportunities and employer networks, facilitate development of ITO modules with appropriate input from employers and associated industries to form cross industry workforce model</p>	<p>Te Puni Kokiri Cadet Scheme</p> <p>Tai Tokerau Māori Forestry</p> <p>Northtec</p> <p>ITO Providers</p> <p>NRC</p>	<p>Assistance for pastoral support of cadets</p> <p>Pest Control Employers symposium to invite current workforce training in aligned industries</p>

### HE POKAPŪ TAIAO ME TE RURUKU KI ROTO I NGĀ HAPORI

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>He whakatōpū pokapū hapori hei tomo mā te hapori whānui e whiwhi ai he tohutohu, he pūmanawa, he ako, he tautoko aroturuki, he taputapu, he āheinga, he pānui, he mātauranga ā-rohe, he tautoko a te ringatohu, he maramataka, he whakatōpū rangapū, tae atu ki te tautoko whakaratonga</p> <p>He akoranga ki roto i tō tātou reo, ki ā tātou tikanga anō</p>	<p>(tuatahi + tuarua) Hei ōna wā, he tohutohu i ngā aronui mō ngā whakaratonga o ngā pokapū taiao</p> <p>Hei ōna wā he whakahaere, he whakauru atu ki ngā ngohe o ngā pokapū taiao</p> <p>He wāhi mō te tuku i te mātauranga ki tā te tika a ngā whakamine tangata whenua e whakamana mai ai</p>	<p>Ko ngā mana he tōmina ki te whakahaere pokapū taiao ki ngā papa hei whakatōpū rauemi ki roto i ngā rangapū e mahi tahi ana</p>	<p>He ruruku mō ngā rauemi matua o ngā Pokapū Taiao</p> <p>He waihanga pūnaha, he waihanga tauira hei whakauru ā-rohe mai, tae atu ki te Reo Māori</p>

āheinga | opportunities, mātauranga ā-rohe | local knowledge, pokapū taiao | environmental hubs, pūmanawa | skill, pūnaha | system, rauemi matua | core resource  
ringatohu | technician, ruruku | coordinate, taputapu | equipment, tautoko aroturuki | monitoring support, tautoko whakaratonga | outreach support, tohutohu | advice, inform  
whakatōpū pokapū hapori | shared community hubs, whakatōpū rangapū | collaborative networks



### TAIAO HUBS AND COORDINATION WITHIN COMMUNITIES

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>Shared community hubs where access to advice, skills, training, monitoring support, equipment, opportunities, pānui, local mātauranga, technical support, maramataka and collaborative networks and outreach support is available to wider community</p> <p>Training available in our language in our tikanga</p>	<p>(tuatahi + tuarua) Inform priorities for taiao hubs services from time to time</p> <p>Hosting and contributing to taiao hub activities from time to time</p> <p>Space for transmission of mātauranga as agreed appropriate by tangata whenua groupings</p>	<p>Those willing to host taiao hubs on existing premises and to share resources within local collaborative networks</p>	<p>Taiao Hub coordination core resources</p> <p>Systems and training templates to be developed for local adoption including Te Reo Māori</p>

HE UARA ME NGĀ MĀTĀPONO WHAKAHAERE MŌ KK2050 O TE TANGATA WHENUA O TE TAI TOKERAU

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>He tukanga e haere ake nei hei wānanga mō te ingoa, mō ngā uara, mō ngā mātāpono whakahaere o KK2050 puta katoa ngā mana whakaaweawe</p> <p>He whakatōpū e haere ake nei mō tēnei whakakitenga puta noa te Tai Tokerau me te rangapū KK2050</p>	<p>(tuatahi) He whakakitenga herekore, he whakatōpū whakakitenga anō mō Te Wao Nui a Tāne mā te rongorau, mā te pae pāpāho pāpori, mā ngā hui, mā ngā pōti, mā te whakatōpū wheako ki ngā hapori me te hunga whakauru o te rangapū KK2050 o te Tai Tokerau</p> <p>(tuarua) He toro ki te whai mārama, ki te whakaemi i te tōpū whakakitenga me te tūāhua o anamata ki tā te hunga whakauru kirirarau o ngā whakamine, hei kawē anō i te whakakitenga me ngā aronui ki te hunga o te rangapū KK2050</p> <p>(tuatoru) He toro ki te whai mārama, ki te whakaemi i te tōpū whakakitenga me te tūāhua o anamata ki tā te hunga whakauru me ngā rangapū māori, hei kawē anō i te whakakitenga me ngā aronui ki te hunga o te rangapū KK2050</p>	<p>He whakakitenga, he uara ho ngā rangapū pā kau ki Te Wao Nui a Tāne me te taiao me kore e hāngai ki KK2050</p> <p>He papa whakatōpū wheako pērā i Te Rangapū Reo Irirangi, ata tukutuku Haukāinga, Pāpāho Māori</p>	<p>He whai wāhi atu ki Tuatahi, ki Tuarua anō hei whakarato tonu, hei whakahua tautoko mō te whakahiato whakakitenga me ngā ngohe matua mō te taiao me Te Wao Nui ā Tāne</p> <p>Tērā a mea whakaaro mō te whakahaere, mō te whakahiato whakakitenga, aronui anō a te Rangapū Tangata Whenua Taiao o te Tai Tokerau, hei ruruku i ngā papa whakatōpū wheako ki tā te tika a ngā whakamine tangata whenua.</p>

ata tukutuku | media clips, hunga whakauru | member, hunga whakauru kirirarau | constituent member, mana whakaaweawe | spheres of influence, mātāpono whakahaere | operating principle, pae pāpāho pāpori | social media, papa whakatōpū wheako | storytelling platforms i.e., sharing experiences, pōti | poll, rangapū māori | natural networks, rongorau | multimedia, ruruku | coordinate, tōpū whakakitenga | shared vision, tūāhua o anamata | future scenarios, uara | value, whakahiato | assemble, whakahua tautoko | articulate support, whakakitenga | vision, whakakitenga herekore | unfettered vision, whakamine tangata whenua | tangata whenua grouping, whakatōpū whakakitenga | scenario sharing, whakatōpū wheako | sharing stories i.e., sharing experiences, uara | values

**TANGATA WHENUA OF TE TAI TOKERAU PF2050 VALUES AND OPERATING PRINCIPLES**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
<p>An ongoing process to wānanga on the name, values and operating principles of PF2050 among all spheres of influence.</p> <p>Ongoing sharing of this vision throughout Te Tai Tokerau and PF2050 Network</p>	<p>(tuatahi) Unfettered vision and scenario sharing for Te Wao Nui a Tāne through multimedia, social media, hui, polls, and storytelling with Te Tai Tokerau community and PF2050 network members</p> <p>(tuarua) Taking steps to understand and collate the shared vision and future scenarios by groupings constituent members, relaying vision and priorities to PF2050 network members</p> <p>(tuatoru) Taking steps to understand and collate the shared vision and future scenarios by members and natural networks, relaying vision and priorities to PF2050 network members</p>	<p>Respective groupings established visions and values pertaining to Te Wao Nui a Tāne and the taiao which may align with PF2050</p> <p>Storytelling platforms eg Te Reo Irirangi Network, Haukāinga webclips, Māori Media</p>	<p>Tuatahi and tuarua access to resource to continue to articulate support assembling vision and priority actions for the taiao and Te Wao Nui a Tāne</p> <p>Suggested that facilitation and collation of vision and priorities by Te Tai Tokerau Tangata Whenua Taiao Network, coordinate storytelling platforms as seen fit by respective tangata whenua grouping</p>

KIA HAUKAHA AI NGĀ TŪHONO KI TE RATONGA KK2050 ME TE RANGAPŪ O TE MOTU

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
He taki whakatōpū taukohakoha mō te rangahau, mō ngā ako i akona ai, mō ngā mahi anō nō Te Motu whānui tae atu ki ngā āhei toro whaitua mā ngā hui taumata ā-tau e tū ana ki te Tai Tokerau, ā, he matawhānui mō te pēhea kaneke mai o KK2050	(ngā unahi katoa) He whai wāhi ki ngā āheinga ki roto o te Tai Tokerau, ki tua anō o te rohe kia whai mārama atu ai ki KK2050 i tana kaneke puta noa Aotearoa	Te Ratonga KK2050 Te Tari Atawhai	

KK2050 O TE TAI TOKERAU: AROTAKE 5 TAU MŌ TE TĪRITI O WAITANGI

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
Whakatauria he anga tātari, he anga arotake, ā, he arotake 5 tau mō ngā ngohe KK2050 ki te Tai Tokerau he mea tohutohu nā te pūrongo mō WAI262, 'Ko Aotearoa Tēnei'; nā ngā kitenga me ngā whakataunga a Te Rōpū Whakamana i te Tīriti o Waitangi  Whakaputaina he pānui mō ngā kitenga, mō ngā whakataunga anō mō te rangapū KK2050	(ngā unaunahi katoa) He mea tohutohu te anga tātari mā ngā whakakitenga, mā ngā uara me ngā mātāpono whakahaere, ā, he mea tohutohu mā ngā whānau, mā ngā hapū me ngā iwi, ka mutu, mā te Rangapū Tangata Whenua Taiao o te Tai Tokerau		He rauemi hei whakatau i te anga tātari, ā, hei whakahaere arotake motuhake

āheinga | opportunities, āhei toro whaitua | opportunities for site visits, haukaha | strengthen, hui taumata ā-tau | annual symposium, kaneke | progress, rangahau | research taki wahkatōpū taukohakoha | regular reciprocal sharing, matawhānui | public i.e., transparent

anga arotake | audit framework, anga tātari | evaluation framework, arotake | audit, arotake motuhake | independent review, kitenga | findings pūrongo | report, tātari | evaluate, whakataunga | recommendations

**STRENGTHEN CONNECTION WITH PF2050 LTD AND NATIONAL NETWORK**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
Regular reciprocal sharing of PF2050 research, lessons learnt and action from across NZ including opportunities for site visits through annual Tai Tokerau based symposium supporting transparency on how PF2050 is progressing	(all unaunahi) access to opportunities both within Te Tai Tokerau and outside the rohe to understand PF2050 as it is progressing throughout NZ	PF2050 Ltd DoC	

**PF2050 TE TAI TOKERAU TE TĪRITI O WAITANGI 5 YEAR EVALUATION**

<b>TĀWHĀINGA</b>	<b>POU UNAUNAHĪ</b>	<b>NGĀ TAUTOKO</b>	<b>NGĀ TAUTOKO KEI TUA</b>
Establish Te Tiriti o Waitangi auditing/evaluation framework and 5-year review of PF2050 Te Tai Tokerau Activities informed by WAI262 Report 'Ko Aotearoa Tēnei', Waitangi Tribunal recommendations and findings.  Publish independent audit findings with recommendations for the PF2050 network.	(all unaunahi) inform audit framework informed by vision, values and operating principles identified by whānau, hapū, iwi and via Te Tai Tokerau Tangata Whenua Taiao Network		Resource for the audit framework establishment and to conduct independent review

### HE WHAKATŌPŪ WHEAKO

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>He taki whakahui hei whakatōpū i ngā whakakitenga, i ngā uara, i te mātauranga, i ngā whakateitei, i ngā ako o ngā ngohe taiao tangata whenua he hāngai ki KK2050, tae atu ki te titiro whānui o te ao ki tā te rau wawaenga</p> <p>He whakatōpū wheako mā te rongorau e arotahi ana ki ngā ngohe hāngai ki KK2050 me ngā ngohe taiao e kawea ana e te haukāinga</p>	<p>(ngā unaunahi katoa) he whakauru ki te whakatōpū wheako he hira kau ki tā te tangata whenua titiro; ki tā ngā aronui me ngā ngohe taiao; ki tā ngā koiora taonga; tae atu ki ngā aronui puta noa te pae pāpaho pāpori me te reo irirangi</p> <p>He whakawhanake rauemi mātauranga hei whakamahi ki roto o te whakahaere marau ā-rohe</p>	<p>Te Rangapū Reo Irirangi Māori Ata Hōtaka Haukāinga</p>	<p>Mā te Rangapū Tangata Whenua Taiao o te Tai Tokerau e āwhina i te whakahui mō te whakatōpū wheako</p>

### STORYTELLING

TĀWHĀINGA	POU UNAUNAHĪ	NGĀ TAUTOKO	NGĀ TAUTOKO KEI TUA
<p>An ongoing campaign to share vision, values, mātauranga, successes, lessons of tangata whenua PF2050 aligned taiao actions and worldview through diverse mediums</p> <p>Multimedia storytelling focus on PF2050 aligned and taiao actions being undertaken by haukāinga</p>	<p>(all unaunahi) participate in storytelling of significance from tangata whenua worldview, local taiao priorities and actions, taonga species and priorities across social media and radio</p> <p>Educational resources developed for use in localised curriculum delivery</p>	<p>Ngā Reo Irirangi – Māori Radio Network Haukāinga Webisodes</p>	<p>Te Tai Tokerau Tangata Whenua Taiao Network Establishment to assist storytelling campaign</p>

arotahi | focus, ata hōtaka | webisodes, koiora taonga | taonga species, ngohe | activities, pae pāpaho pāpori | social media, rau wawaenga | diverse mediums, rongorau | multimedia, taki whakahui | ongoing campaign, titiro whānui ki te ao | worldwide view, whakahaere marau ā-rohe | localised curriculum delivery, whakateitei | successes, whakatōpū wheako | sharing stories i.e., sharing experiences

## Hei Tāpiri

### Timeline 2021

Feb	Project established
March	Contacts database initiated Team established to develop report
April	Regional Report Project planning input, Regional workshops undertaken
May	Hapu discussions underway
June	Whakaaro collation team workshops and report structure prepared
July	He Unaunahi report draft 1 prepared Tangata Whenua Priority themes drafted
August	He Unaunahi infographics prepared – regional report integration Te Reo Translation Tangata Whenua report underway
Septemeber	Te Reo Translation review underway
October	Regional report released Te Reo Translation complete final editing Underway
November	He Unaunahi o Te Ika Nui a Maui completed

## Process Learnings

### Regional and Tangata Whenua Dual Report Pathway

Mixed feedback from community members who insisted on the need to work together. Leadership for regional report disrupted racist narratives as they presented but did demonstrate unease in wider community about tangata whenua self determination as risk to a shared future across the network. Tangata whenua as part of communities with kaupapa Maori pathway and space remains important in Te Tiriti relationship and management of the percieved risk will require leadership into future.

### Whakaaro Collection Team Procurement

Generally difficult to find kaimahi from tangta whenua groups willing to lead discussions on Predator Free priorities, especially outside their respective grouping. Suggest the appointment of those who are to act as māngai for different groupings are required to seek prior informed consent to share kōrero on behalf of groupings into the future and where possible ensure there are opportunities for the 'whare to speak'

### Tangata Whenua Whakaaro Collection

Difficulty in finding kaupapa Māori spaces to activate discussion. Discussion with individuals is limiting. Covid disruptions to tikanga of engagement feature in the adapted approach mostly based on one on one discussions.

### Regional Report Integration

Timeline not aligning resulted in different narratives between the two reports. Nature of ongoing dialouge and developing whakaaro must always be acknowledged, growth space not static. Reports of concern that groups who were not engaged – encouraged to continue to offer whakaaro.

### **Infographics**

Need further work done to convey intent of He Unaunahi as an action planning framework

### **Te Reo Translation/Interpretation**

Te Reo Translation as a capability development opportunity is extremely valuable to resulting report, inclusion,

Translation as a process resulting in revision edits in english version also strengthened the writing process

Contribution to language aquisition for those in the industry and actively contributing to future mahi a taiao

Initial translation reinterpretation of report by those willing to share Te Reo as a precursor to formal translation in entirety added benefit to shared understanding of report's content among the report writing team of 5 people. Requires additional time and effort.

Formal translation ensured publication standard is reached and is specialist skill set for publications which are to be shared widely in public arena.

Language of te Tai Tokerau is unique and living – tautohetohe as a way to engage in te Reo Maori is suggested to continue to explore interpretations of kupu eg Kirearea vs Konihi

### **Overall**

Capability development is a feature of this project evaluated not in the outputs only – whakawhiringa hira tōpū – focus is on the journey not the destination

Report is stripped back targeting decision makers and their advisors

Process did not activate discussion of PF Tai Tokerau in taitamariki roopu – priority in future

In the first instance tangata whenua contributors have commitment to te taiao. Initial views of tangata whenua contributors showed limited sense of ownership or belonging in Predator Free 2050 at the outset of discussions. PF2050 may assist them to reach their respective goals either in partnerships or in tangata whenua led approaches

Future reporting on progress, opportunities highlights need to establish taiao network for ongoing communications and coordination



**TITLE:** Biosecurity Operational Plan

**From:** Kathryn Lister, Biosecurity Partnerships Manager

**Authorised by** Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on 17 May 2022  
**Group Manager/s:**

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### Whakarāpopototanga / Executive summary

The attached draft Operational Plan has been prepared as a requirement of the Biosecurity Act 1993 section 100B and should be read in conjunction with the Northland Regional Pest and Marine Pathway Management Plan 2017–2027 (hereafter referred to as the Pest Plan). It includes all species listed in the Pest Plan and describes how biosecurity programmes will be implemented during the 2022/2023 financial year.

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### Ngā mahi tūtohutia / Recommended actions

1. That the report 'Draft Biosecurity Operational Plan' by Don McKenzie, Biosecurity Group Manager and Kathryn Lister, Biosecurity Partnerships Manager dated 25 May 2022, be received.  
That the Biosecurity and Biodiversity Working Party recommend the Draft Northland Regional Pest and Marine Pathway Operational Plan 2022–2023 be presented to council for approval.

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### Background/Tuhinga

The Northland Operational Plan aims to be a concise and accurate reflection of the content of the Pest Plan. Reviews of the Operational Plan are undertaken during the year, and staff believe this will be important as additional government funding for activities such as kauri protection become clearer under a national kauri protection Plan and the extent of current programmes of wilding conifers are confirmed. Section 100B of the Biosecurity Act states that the Operational Plan will be completed within three months of the end of the financial year, and it is proposed that the draft Operational Plan for 2022/2023 will be considered by full Council at its July meeting.

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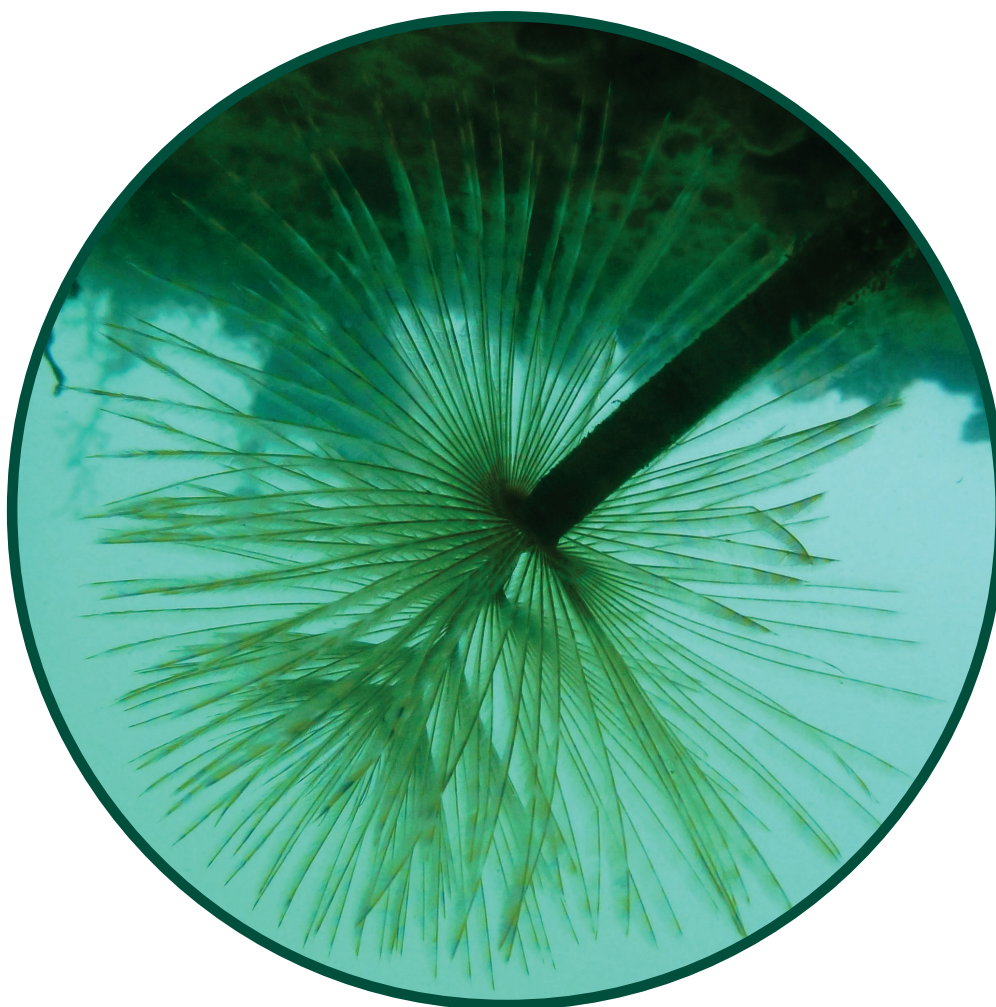
### Ngā tapirihanga / Attachments

Attachment 1: Biosecurity Operational Plan 2022-2023 | Mahere tautahi whakahaumarū taiao [↓](#)

## Draft 3

# Biosecurity Operational Plan 2022-2023

## Mahere tautahi whakahaumaru taiao



Tē tōia, tē haumatia

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## Draft 3

# 1. Introduction | Tīmatanga kōrero

Tē tōia, tē haumatia

Nothing can be achieved without a plan, workforce, and way of doing things.

## Background

The Northland Regional Council (council) is the management agency responsible for developing and implementing the Northland Regional Pest and Marine Pathway Management Plan 2017-2027 in accordance with the Biosecurity Act 1993 (Pest Plan). The Pest Plan is a combination of the eradication or effective management of specified pests (or groups of pests), and a marine pathway plan designed to prevent and manage the spread of harmful marine organisms via boat hull fouling within Northland coastal waters.

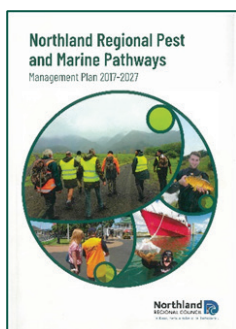
The Pest Plan describes the biosecurity activities that will be undertaken throughout Northland and outlines the management or eradication of specific organisms and/or marine pest pathways. Doing so will:

- minimise the actual or potential adverse or unintended effects associated with these organisms and/or pathways, and,
- maximise the effectiveness of individual actions in managing pests or pathways through a regionally coordinated approach.

## Associated Documentation

### Regional Pest and Marine Pathway Management Plan 2017-2027 (*the Pest Plan*)

This operational plan has been prepared as a requirement of the Biosecurity Act 1993 section 100B and should be read in conjunction with the Pest Plan. It includes all species listed in the Pest Plan. The plan describes the nature and scope of activities the Council intends to undertake in the implementation of the Pest Plan for the period 1 July 2021 – 30 June 2022. For full details of pest management objectives, aims, principal measures to manage pests, and pest management rules, please refer to the Pest Plan.



<https://www.nrc.govt.nz/media/uhudlio4/northlandregionalpestandmarinepathwaymanagementplan20172027.pdf>

### Northland Regional Council Long Term Plan 2021-2031

This operational plan is integrated with council's Annual and Long Term plans which prescribe the funding and resources allocated to programmes within the plan. Council's Long Term Plan 2021-2031 maintains a focus on pest management activities in Northland. The plan states that the council will provide the services of:

- Reducing the impact of introduced pests on the environment, economic and social values; and,
- Protect the health of forests and lakes through effective regional pest control; and,
- Promoting community involvement in pest management, including tangata whenua, communities, district councils and other stakeholders.



<https://www.nrc.govt.nz/media/wsidxsbe/final-long-term-plan-2021-to-2031.pdf>

## Draft 3

# 2. Implementation Programmes Whakatinana te hōtaka

The Pest Plan is implemented by programmes as detailed below:



## Draft 3

### 3. Pest species in the plan Ngā riwha katoa i te rautaki

Northland's Pest Plan contains **143** species. A breakdown on the number and types of pests along with a detailed listing of the pests included is detailed in the tables below and overleaf.

Type of Pest	Number of Species (or groups of species) in the Pest Plan					
	Exclusion	Eradication	Progressive Containment	Sustained Control	Banned from sale or distribution	Total
Plants	13	22	5	18	35	93
Animals	11	3		12		26
Diseases				1		1
Fresh water	3	8	3	2		16
Marine				7		7
Total	27	35	8	40	38	143



## Draft 3

### Pest species included in the plan

Pest Type	Exclusion Species	Eradication Species	Progressive Containment
Plants	Asiatic knotweed Chinese knotweed Climbing spindle berry Giant hogweed Giant knotweed Holly-leaved senecio Houttuynia Noogoora bur Old man's beard Phragmites Purple loosestrife Sea Spurge Velvetleaf	Akebia Balloon vine Bat-wing passionflower Cape tulip Cathedral bells Chilean rhubarb Evergreen buckthorn Field horsetail Firethorn Gypsywort Lesser knotweed Mexican feather grass Mickey mouse plant Monkey musk Nassella tussock Nutgrass Royal fern Spartina species including: <i>Spartina alterniflora</i> <i>Spartina anglica</i> <i>Spartina townsendii</i> Wilding kiwifruit Yellow flag iris	African feather Grass Lantana (all varieties) Manchurian wild rice Mile-a-minute Pultenaea
Animals	Bearded dragon Big headed ant Blotched blue tongued skink Common blue tongued skink Indian ring-necked parakeet Rainbow lorikeet Rook Sulphur crested cockatoo Wallaby (all <i>Macropus</i> , <i>Petrogale</i> and <i>Wallabia</i> species)	Feral deer including all species and hybrids of: <i>Cervus</i> <i>Dama</i> <i>Odocoileus</i>	
Disease			
Fresh water	Entire marshwort Orfe Water poppy	Eastern water dragon Eel grass Nardoo Red-eared slider turtle Salvinia Senegal Tea Snake-necked turtle Water hyacinth	Koi carp Perch Tench
Marine			

## Draft 3

Pest Type	Sustained Control	Banned from Sale and Distribution
Plants	<p>Bathurst bur</p> <p>Brazilian Pepper tree</p> <p>Gorse</p> <p>Gravel Groundsel</p> <p>Phoenix palm</p> <p>Privet (Ligustrum) including:</p> <ul style="list-style-type: none"> <li><i>L. lucidum</i> (tree privet)</li> <li><i>L. sinense</i> (Chinese privet)</li> <li><i>L. ovalifolium</i> (privet)</li> <li><i>L. vulgare</i> (common privet)</li> </ul> <p>Queen of the night</p> <p>Rhus tree</p> <p>Wild ginger including:</p> <ul style="list-style-type: none"> <li>Yellow ginger</li> <li>Kahili ginger</li> </ul> <p>Wilding conifers including:</p> <ul style="list-style-type: none"> <li><i>Pinus contorta</i></li> <li>Douglas fir</li> <li>Maritime pine</li> <li>Radiata pine</li> </ul> <p>Woolly nightshade</p>	<p>Agapanthus</p> <p>Black-eyed Susan</p> <p>Broom</p> <p>Brush wattle</p> <p>Buddleia</p> <p>Camphor laurel</p> <p>Cape honey flower</p> <p>Cape ivy</p> <p>Century plant</p> <p>Coastal banksia</p> <p>Cotoneaster incl:</p> <ul style="list-style-type: none"> <li><i>C. glaucophyllus</i></li> <li><i>C. franchetii</i></li> </ul> <p>Eleagnus</p> <p>Elephant's ear</p> <p>English ivy</p> <p>Furcraea</p> <p>German ivy</p> <p>Greater bindweed Hakea</p> <p>Hakea</p> <p>Himalayan fairy grass</p> <p>Himalayan honeysuckle</p> <p>Jasmine</p> <p>Kangaroo acacia</p> <p>Lily of the valley vine</p> <p>Oxylobium</p> <p>Paperbark poplar</p> <p>Periwinkle</p> <p>Prickly moose incl:</p> <ul style="list-style-type: none"> <li><i>Acacia verticillata subsp. cephalantha</i></li> <li><i>A. v. subsp. ruscifolia</i></li> </ul> <p>Sexton's bride</p> <p>Sharp rush</p> <p>Sycamore</p> <p>Sydney golden wattle</p> <p>Taiwan cherry</p> <p>Velvet groundsel</p>
Animals	<p>Argentine ant</p> <p>Darwin's ant</p> <p>Feral and stray cats</p> <p>Feral goat</p> <p>Feral pig</p> <p>Mustelids incl:</p> <ul style="list-style-type: none"> <li>Ferret</li> <li>Stoat</li> <li>Weasel</li> </ul> <p>Possum</p> <p>Rabbit</p> <p>Rodents incl:</p> <ul style="list-style-type: none"> <li>Norway rat</li> <li>Ship rat</li> </ul>	
Disease	Kauri dieback	
Fresh water	<p>Brown bullhead catfish</p> <p>Rudd</p>	
Marine	<p>Asian paddle crab</p> <p>Australian droplet tunicate</p> <p>Japanese mantis shrimp</p> <p>Mediterranean fanworm</p> <p>Pyura sea squirt</p> <p>Styela sea squirt</p> <p>Undaria seaweed</p>	



## Draft 3

# 4. Financial summary

## Whakarāpopoto ā pūtea

Council's Long Term Plan 2021 - 2031 provides the necessary funding (via rates and user charges) for the operational and planning activities associated with biosecurity and pest management carried out by Northland Regional Council. Additional external funding grants have also been allocated to supplement council investment in pest management.

Biosecurity Activities 2022- 2023	Long Term Plan
Biosecurity Overheads <sup>1</sup>	\$2,974,791
Partnerships <sup>2</sup>	\$2,205,078
Predator Free 2050 <sup>3</sup>	\$3,424,991
Pest Plants	\$667,333
Wilding Pine Project <sup>4</sup>	\$890,000
Diseases and Incursions <sup>5</sup>	\$303,177
Kauri Protection	\$348,481
Marine	\$507,983
<b>Total Biosecurity Expenditure</b>	<b>\$11,321,834</b>

NOTE: Budget may be subject to changes prior to final adoption by council and external funding allocations.

<sup>1</sup> Includes staff training and leave, vehicle running costs, regional and national working group costs, administration staff, and council support services.

<sup>2</sup> Includes sustained control animals and materials for resale.

<sup>3</sup> Includes funding for Predator Free Taitokerau, Predator Free Whangarei, and Predator Free Bay of Islands.

<sup>4</sup> Wilding pine funding to be confirmed.

<sup>5</sup> Includes eradication and exclusion animals, and freshwater pest fish.

## Draft 3

# 5. Team key performance indicators

## Ngā tohu paetawhiti o te roopū

Biosecurity has several key performance measures applicable over all or some of the department as detailed in the table below.

Additional focussed key performance measures applicable within specific areas of the Biosecurity are detailed as required in Sections 6 – 10 of this operational plan.

Department area	Key performance measures	How will this be measured?
Whole department	<b>Community engagement</b> Total number of engagement events and other social media interactions is maintained or is greater than the previous year.	Events attended and social media interactions recorded and reported annually.
Whole department	<b>Bicultural collaboration:</b> Number of relationships and collaborative projects that are underway with hapū / whanau / iwi increases by a minimum of 5% annually.	Recorded via council databases.
Whole department	<b>Bicultural capability</b> All permanent staff will have achieved competency level 1 in council's Te Whāriki workshops.	Human resources records.
Pest Plants Pest Animals Freshwater Pests	<b>Identify new sites</b> Identify new sites of exclusion, eradication, and progressive containment pest through passive and active surveillance by council staff, the public, or through regional surveillance.	Evidence of the records of new sites reported and recorded.
Pest Plants Pest Animals Freshwater Pests	<b>Exclusion incident investigation</b> Initial investigations for all reported sightings and/or discoveries of exclusion species undertaken within 5 working days.	Reported via council database.
Pest Plants Pest Animals Freshwater Pests	<b>Exclusion incident response</b> An initial response plan developed and implemented for any new incursion of an exclusion species within 20 working days of confirmation of species.	Evidence of plans developed.



## Draft 3

Department area	Key performance measures	How will this be measured?
Pest Plants Freshwater Pests	<b>Eradication incident investigation and response</b> Initial investigations for all reported sightings and/or discoveries of eradication species undertaken within 10 working days and control actions completed within 20 working days.	Reported via council database.
Pest Plants Freshwater Pests	<b>Progressive containment incident investigation and response</b> Initial investigations for all reported sightings and/or discoveries of Progressive Containment species (outside of containment zones) undertaken within 10 working days and decisions documented within 20 working days.	Council database.
Pest Plants Pest Animals Freshwater Pests	<b>Request response time</b> Response to requests from the public on sustained controlled pests will be responded to within 20 working days.	Reported via council database.
Pest Plants	<b>Plant retail outlet compliance</b> All known plant outlets in Northland are inspected annually for exclusion, eradication, progressive containment and sustained control species, and species banned under the National Pest Plant Accord.	Record of plant outlets visited by staff and any non-compliances found.

## Draft 3

# 6. Pest plants | Ota-ota rāwaho riha

## 6.1 Exclusion plants

Eradication of infestations of exclusion plants will be attempted by the council in conjunction with relevant Crown agencies, tangata whenua, and other stakeholders where practicable.

Council will provide training to relevant council staff and stakeholders about the identification of the exclusion pests to assist in early detection. Council will provide advice, attend events, and undertake publicity campaigns to increase public awareness of exclusion pests.

### Regulatory programmes include:

- Enforcement of rules relating to exclusion plants.
- Eradication of exclusion plants found in Northland.
- Inspection / enforcement of rules relating to Plant nurseries and retail outlets (National Pest Plant Accord).

### Non-regulatory services include:

- Supporting eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage exclusion plants.
- Support, attend and provide public weed control workshops to raise awareness and provide training to relevant stakeholders.
- Manage contractors relating to control of exclusion plants.

## 6.2 Eradication Plants

Control work will be undertaken annually by council staff / contractors / partners and/or stakeholders and detailed work plans will be developed for specific pests.

### Regulatory programmes include:

- Enforcement of rules relating to eradication plants.
- Eradication of species listed within the eradication programme.
- Inspection / enforcement of rules relating to Plant nurseries and retail outlets (National Pest Plant Accord).

### Non-regulatory services include:

- Support eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage eradication plants.
- Support, attend and provide public pest control workshops to raise awareness.
- Manage contractors relating to control of eradication plants.



*Eradication plant bat-wing passionflower  
overgrowing a stone wall.*

## Draft 3

### Key performance measures

Key performance measures	How will this be measured?
<b>Best practice management</b> All management sites visited on scheduled best practice rotation (based on biological characteristics of each species and defined in the species programme record in the council's IRIS database).	Reported from council database.
<b>Progress towards eradication</b> Annual decrease in number of adult plants observed or the infestation area at existing management sites.	Reported from council database.

## 6.3 Progressive containment plants

Council staff will aim to eradicate populations outside the containment zone and reduce the size of the containment zone through a variety of control methods, including but not limited to spraying.

Council staff will also support communities to reduce the impact of progressive containment pests through several regulatory and non-regulatory biosecurity programmes.

#### Regulatory programmes include:

- Enforcement of rules relating to progressive containment plant species.
- Eradication and reduction of infestations of progressive containment plants may be attempted by the council in conjunction with relevant Crown agencies, tangata whenua and stakeholders.

#### Non-regulatory services include:

- Develop and support community pest control programmes.
- Develop and support biosecurity environment fund projects.
- Support community, mana whenua, and landcare groups.
- Provide advice about how to manage progressive containment species.
- Support, attend and provide public weed control workshops.
- Provide public weed workshops.
- Support biocontrol for progressive containment species.



*African feather grass invading sand dunes at Poutō.*

## Draft 3

### Key performance measures

Key performance measures	How will this be measured?
<b>Annual status reports</b> Annual reporting on the status of all progressive containment pests.	Included in the annual Biosecurity Operational report.
<b>Best practice management</b> 100% of council managed sites visited on scheduled best practice rotation (based on biological characteristics of each species and defined in the species programme record in the council's IRIS database).	Evidence of schedule and visits made reported back.
<b>Progress towards eradication</b> Annual decrease in number of adult plants or the infestation area at existing council managed sites.	Reported from council database.

## 6.4 Sustained Control Plants

Council will provide advice to relevant road and rail authority staff regarding development and implementation of management plans for sustained control plants. Sustained control plants are managed through both regulatory and non-regulatory biosecurity programmes.

### Regulatory programmes include:

- Enforcement of rules relating to sustained control plant species.
- Enforcement of Good neighbour rules.
- Inspection / enforcement of rules relating to Plant nurseries and retail outlets (National Pest Plant Accord).
- Inspection / enforcement of rules relating to Quarries.
- Enforcement of rules relating to Road and rail, and development and implementation of management plans).

### Non-regulatory services include:

- Develop and support community pest control programmes and high value areas.
- Develop and support biosecurity environment fund projects.
- Support community, mana whenua, and land care groups.
- Provide advice about how to manage sustained control species.
- Support, attend and provide public weed control workshops.
- Provide public weed workshops.
- Continuing investing in deployment and development of biocontrol agents for sustained control plants.



## Key performance measure

Key performance measures	How will this be measured?
<b>Road and rail five year weed management plans</b> All road and rail authorities have five year weed management plans or prioritised annual plans approved and implemented.	Evidence of management plans in place and monitored showing reduction in impacts of pest plants.
<b>Best practice guide</b> Best practice guide developed for all road and rail authorities	Evidence of a guide developed.



*Blue morning glory overgrowing road signage in Tikipunga.*

## Draft 3

# 7. Pest animals | Karerehe rāwaho riha

## 7.1 Exclusion animals

Eradication of infestations of exclusion animals will be attempted by the council in conjunction with relevant Crown agencies, tangata whenua, and other stakeholders where practicable.

Council will provide training to relevant council staff and stakeholders about the identification of the exclusion pests to assist in early detection. Council will provide advice, attend events and undertake publicity campaigns to increase public awareness of exclusion pests.

### Regulatory programmes include:

- Enforcement of rules relating to exclusion animals.
- Eradication of exclusion animals found in Northland.

### Regulatory programmes include:

- Support eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage exclusion animals.
- Support, attend and provide public pest control workshops to provide training and raise awareness to assist in early detection.
- Manage contractors relating to control of exclusion animals.
- Council will provide advice, attend events, and undertake publicity campaigns to increase public awareness of exclusion animals.



*Exclusion pest Indian ring-necked parakeet seen at Whangārei Heads.*



## Draft 3

### 7.2 Eradication animals

These pests all have the potential to establish widely in the region and can cause adverse effects to the environmental, economic, social, or cultural values of the region. Council is either the lead agency or a partner for eradicating these pests from the region.

Eradication of the eradication pests will be undertaken by the council in conjunction with relevant Crown agencies, tangata whenua, and other stakeholders where practicable.



*Trail camera footage of a sika deer near Elliot's Bay in July 2021.*

Regulatory programmes include:

- Enforcement of rules relating to eradication animals.
- Eradication of species listed within the eradication programme.

Non-regulatory services include:

- Support eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage eradication animals.
- Support, attend and provide public pest control workshops to raise awareness.
- Manage contractors relating to control of eradication animals.

Key performance measures

Key performance measures	How will this be measured?
<b>Deer farm fence inspection</b> Any faults in deer farm fences observed via field inspections that pose a risk of deer escaping are reported to the Department of Conservation within 24 hours for remedial action.	Council database.
<b>Deer incident response and investigation</b> 100% of deer incidents are responded to within 48 hours.	Incidents and time to respond are recorded in council databases.
<b>Deer location records</b> Known deer populations are surveyed and mapped across Northland.	Data recorded on council mapping software.
<b>Resolve deer accountability issues</b> Attempt to resolve legal and accountability issues regarding feral deer in Northland.	Evidence of resolution.

## Draft 3

### 7.3 Sustained control animals

- Develop and support community pest control programmes and high value areas.
- Develop and support biosecurity environment fund projects.
- Develop and support significant biosecurity partnerships (eg. Northland Regional Council-Kiwi Coast Partnership).
- Support community, mana whenua, and landcare groups.
- Provide advice about how to manage sustained control animals.
- Support, attend and provide public pest control workshops.
- Provide selected pest control materials.
- Manage contractors relating to sustained control animal control.
- Staff will assist landowners and agencies to develop management plans to manage sustained control animals in Northland.

#### Key performance measures

Key performance measures	How will this be measured?
<b>Land area in CPCAs</b> Increase in hectares of land under CPCAs per annum (increase by 5000 ha).	Evidence of management plans which show hectares of CPCAs.
<b>Council supported programmes</b> Measure annual outputs of council supported programmes – may include: <ul style="list-style-type: none"> <li>• Number of traps issued.</li> <li>• Number of kills recorded or post control pest densities, where known.</li> <li>• Number of Biofund projects approved.</li> <li>• Number of Community Pest Control Areas approved.</li> <li>• Trends in indicator species (eg. kiwi call counts and pateke flock surveys).</li> </ul>	Council database records.
<b>Possum index monitoring</b> Contractors specifically engaged by council for possum control will meet a target of $\leq 5\%$ residual possum densities in council led operations.  Council supported programmes undertaking possum control are achieving agreed targets set in community pest control area agreements.	Possum index monitoring.

## Draft 3

### 7.4 Predator Free Whangārei

Predator Free Whangārei aims to protect, restore, and enhance thousands of hectares of Northland's native forests, coastal habitats, and wetlands, allowing for greater protection and enhancement of threatened species of native fauna and flora.



It will link and connect several community led, landscape scale predator control programmes delivering environmental awareness and enhancement programmes. The project will completely remove possums from 8,600 ha of the Whangārei Heads area and utilise the narrow neck of the peninsula and numerous inlets and streams to protect from reinvasion. Eradication will be achieved by 2025.

#### Key performance measures

Key performance measures	How will this be measured?
<b>Possum eradication</b> Percentage of project area in knockdown / removal phase.	Area under active management
<b>Possum eradication surveillance</b> Percentage of project area in surveillance phase (detection and response).	Area under surveillance



*Possums caught on trail camera at Taurikura.*

## Draft 3

# 8. Diseases and pathogens

## Ngā mate uru tāme me ngā tukumate

The *Phytophthora agathidicida* programme is a multi-agency programme involving the Ministry for Primary Industries, Department of Conservation, Northland Regional Council, Auckland Council, Waikato Regional Council, Bay of Plenty Regional Council, and tangata whenua.

The programme will utilise scientific and technological advancements to help reduce the spread of *P. agathidicida* including mātauranga Māori.

### Regulatory programmes include:

- Enforcement of rules relating to sustained control disease.
- Development of high risk *P. agathidicida* management plans.
- Council staff and/or their contractors will visit all places on private land suspected of containing *P. agathidicida* to undertake further assessment or testing.

### Non-Regulatory Services include:

- Support community, mana whenua, and landcare groups.
- Provide advice about how to manage sustained control disease.
- Support, attend and provide public *P. agathidicida* workshops.
- Provide materials to manage *P. agathidicida*.
- Manage contractors relating to sustained control species.

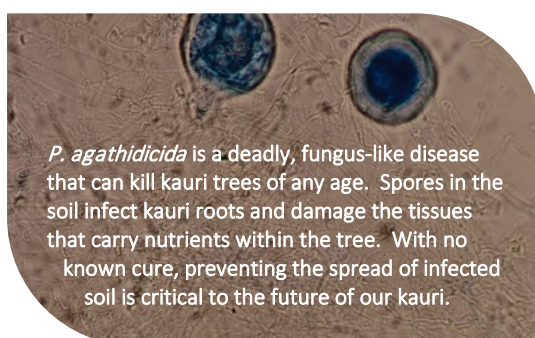


*Boardwalk wending its way through young trees on the Kauri Mountain section of the Te Araroa trail.*

## Draft 3

### Key performance measures

Key performance measures	How will this be measured?
<b>Soil Sampling</b> 100% of remaining aerial survey sites on private land will be sampled and a minimum of 50% of high risk sites will have management plans	Evidence of the number of sites sampled and <i>P. agathadicida</i> management plans completed will be recorded on council databases.
<b>Follow up soil sampling</b> Sample five previously sampled sites in order to reconfirm the status of the site with regard to the presence of <i>P. agathadicida</i> .	Evidence of the number of sites sampled recorded on council databases.
<b>Hygiene stations</b> A minimum of 5 hygiene stations installed at priority sites.	Evidence of stations recorded on council database
<b><i>P. agathadicida</i> distribution</b> Maintain a record of distribution of <i>P. agathadicida</i> disease across Northland.	Recorded on national and council data systems.
<b>Incident response times</b> All incidents are recorded, and a response plan is developed within 20 working days.	Evidence held on council database.
<b>Community engagement</b> Deliver a minimum of ten public engagement events annually	Evidence held on council database



## Draft 3

# 9. Freshwater pests | Riha wai māori

## 9.1 Exclusion freshwater pests

### Regulatory programmes include:

- Enforcement of rules relating to exclusion freshwater pests.
- Eradication of exclusion freshwater pests found in Northland.
- Inspection / enforcement of rules relating to Plant nurseries and retail outlets (National pest plant accord).

### Non-Regulatory programmes include:

- Support eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage exclusion freshwater species.
- Support, attend and provide public pest control workshops to raise awareness.
- Manage contractors relating to control of exclusion species.
- Provide training to relevant council staff and stakeholders about the identification of the exclusion pests to assist in early detection.
- Provide advice, attend events, and undertake publicity campaigns to increase public awareness of exclusion pests.

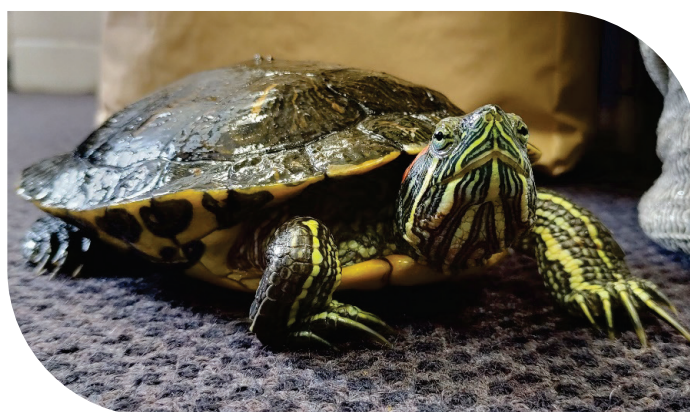
## 9.2 Eradication freshwater pests

### Regulatory programmes include:

- Enforcement of rules relating to eradication freshwater species.
- Eradication of species listed within the eradication programme.
- Inspection / enforcement of rules relating to plant nurseries and retail outlets (national pest plant accord).

### Non-Regulatory programmes include:

- Support eradications undertaken by other Crown agencies, tangata whenua, and other stakeholders.
- Provide advice about how to manage eradication freshwater species.
- Support, attend and provide public pest control workshops to raise awareness.
- Manage contractors relating to control of eradication freshwater species.



*Eradication freshwater pest  
– red eared slider turtle.*





## Draft 3

### Key performance measures

Key performance measures	How will this be measured?
<b>Management site visit</b> 100% of council freshwater pest plant management sites visited on scheduled best practice rotation (based on biological characteristics of each species and defined in the species programme record in the council's IRIS database).	Evidence of schedule and visits made reported back.
<b>Turtle location records and methodology</b> Maintain database and map tool for management of turtle sightings.	Reported from council database.

## 9.3 Progressive Containment Freshwater Pests

### Regulatory programmes include:

- Enforcement of rules relating to progressive containment control freshwater species.
- Eradication and/or reduction of infestations of the progressive containment freshwater pests may be attempted by the council in conjunction with relevant Crown agencies, tangata whenua, and other stakeholders where practicable.

### Non-regulatory services include:

- Council staff will assist landowners to develop management plans.
- Council will provide training to relevant council staff and stakeholders in the identification of pests to assist in early detection.
- Council staff will provide advice, attend events, and undertake publicity campaigns to increase public awareness of pests.
- New technologies and methods will be investigated and introduced where possible.



*Biosecurity staff setting nets after a reported koi carp sighting at Lake Taharoa.*

## Draft 3

### Key performance measures

Key performance measures	How will this be measured?
<b>Distribution record</b> Maintain a distribution record of progressive containment pest fish species.	Reported from council database.
Annual status reports Training, surveillance, control, and eradication actions attempted for progressive containment pest fish species will be reported annually.	Summary included in the annual Biosecurity Operations Plan report.

## 9.4 Sustained Control Freshwater Pests

### Regulatory programmes include:

- Enforcement of rules relating to sustained control freshwater species.



*Rudd - sustained control freshwater pest.*

### Non-regulatory services include:

- Council staff will provide education and advice to owners, occupiers, and the public about the freshwater sustained control pests and how to control them.
- Council will provide training to relevant council staff and stakeholders in the identification and control of the sustained control freshwater pests.
- Council will provide advice, attend events, and undertake publicity campaigns to increase public awareness of these freshwater pests.



## Draft 3

# 10. Marine pathways management plan

## Rautaki wai moana

### Background of the Marine Pathway Management Plan

Over the life of the Pest Plan (including the Marine Pathway Management Plan), council has the following aims:

- To increase the number of vessel owners and/or persons in charge of vessels complying with the pathways plan rules.
- To see a reduction in new marine pest introductions to Northland.
- To see a reduction in the rate of spread of established sustained control marine pests between designated areas within Northland.
- To help marine stakeholders, coastal marine area occupiers, vessel owners and the public to gain knowledge and skills to help reduce the impacts and spread of sustained control pests and to understand the risk hull biofouling poses to marine pest spread.

Since 2010 council has had a species led approach to managing marine pests. However, identifying marine pests and potential risk organisms for Northland is difficult so rather than relying solely on the species led approach, council is addressing a universal vector of spread. Mediterranean fanworm is just one of many species that has entered the region via hull biofouling, with over 100 vessels found infected with fanworm in uninfected Northland harbours since 2012. Taking a proactive approach and encouraging cleaner hulls through a MPMP will result in fewer vessels carrying marine pests and other biofouling to the region and reduce the risk of new marine pest incursions.

The programme includes the following species and pathways:

Marine pests and pathway		
Marine pathway plan	Hull fouling: Level of Fouling 2 or 'light fouling'*	
Sustained control marine pests	Asian paddle crab Australian droplet tunicate Japanese Mantis Shrimp Mediterranean fan worm	Pyura sea squirt Styela sea squirt Undaria seaweed

*\*light fouling is defined as: small patches (up to 100 millimetres in diameter) of visible fouling, totalling less than 5% of the hull and niche areas. A slime layer and/or any species of barnacles is allowable fouling.*

### Implementation

- Continue with existing communication and advice programmes to assist vessel owners & stakeholders with ensuring compliance with rules.
- The Hull Surveillance Programme will assess a minimum of 2000 vessels annually. Any vessel carrying a named marine pest in an area where that pest is not widely established, will be formally directed to make a plan to have the vessel cleaned. In addition, owners of vessels that exceed the MPMP fouling threshold will be advised and issued a warning letter encouraging them to have the vessel cleaned and explaining that enforcement action will follow if they fail their next inspection and move between designated places.
- Enforcement action on vessels will be tracked in IRIS (councils online incident logging database).
- Owners of structures that constitute high risk in terms of marine pest spread will also be subject to consideration and assessment for the need of a marine pest management plan in accordance with species rules.

## Performance Targets and Measures

Key performance measures	How will this be measured?
<b>Vessel compliance reporting</b> Compliance with the marine pest and pathway plan is recorded and trends over the duration of the plan are analysed.	Compliance with the pathway plan and all incidents will be recorded and reported monthly.
<b>Hull survey</b> The vessel hull surveillance programme will inspect a minimum of 2000 vessel hulls annually.	Evidence of hulls surveyed recorded on council databases, or national databases as they become available.
<b>Community engagement</b> A minimum of two engagement activities annually are conducted to facilitate an increase in awareness of the risk hull fouling poses to the spread of marine pests.	Engagement events will be recorded on council databases
<b>New marine pests</b> Introductions of new marine pests to Northland and spread of established pests to new designated areas within Northland are recorded and trends over the duration of the plan are analysed.	<p>Number of incidents and reports of marine pests will be recorded and reported monthly.</p> <p>Surveillance activities will be recorded to contribute to an assessment of surveillance effort over the duration of the plan.</p>
<b>Incident response</b> All significant incidents are recorded, and a response plan is developed and implemented within 5 working days.	Incidents recorded on council databases.



*Young visitors to the marine Biosecurity display at an Experiencing Marine Reserves snorkelling event.*

## Draft 3

# 11. Operational plan reporting

## Ripoata mahere tautahi whakahaumaru whakamahi

Council will produce a report on the operational plan and its implementation not later than 5 months after the end of each financial year.

A copy of this report will be provided to council.

# 12. Operational plan review

## Arotake mahere tautahi whakahaumaru whakamahi

This operational plan will be reviewed periodically as required.

## Draft 3

### Acknowledgements

Table of contents: Fantail image supplied by Stefan Billings



## Draft 3

Northland Regional Council

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W [www.nrc.govt.nz](http://www.nrc.govt.nz)



**TITLE:** PF2050 Progress Update

**From:** Sam Johnson, Biosecurity Manager - Predator Free

**Authorised by Group Manager/s:** Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on 17 May 2022

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### Whakarāpopototanga / Executive summary

The last month has seen some pleasing milestones achieved across both the Whangarei and Pēwhairangi Whanui projects. Commencement of possum eradication in the Te Whara / Bream Head and Ocean Beach farmland blocks has been a highlight, along with the establishment of draft eradication plans for all three peninsulas at Pēwhairangi Whanui.

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### Ngā mahi tūtohutia / Recommended actions

1. That the working party note the information
2. That staff update with further progress at the next working party meeting

---

### Background/Tuhinga

#### PF Pēwhairangi Whanui (Bay of Islands)

Draft eradication plans have been prepared for all three peninsulas (Purerua, Kororareka, and Rakaumangamanga (Cape Brett.)) This work includes a more in-depth assessment of the costs associated with delivery, which will provide valuable data to populate 2022/23 council budgets.

The Original PF2050 Ltd funding was on a Whanui wide basis with the intention that planning, scoping and governance processes would be consistent across the three peninsulas. Engagement with each project over the last couple of months indicates that each peninsular project requires its own planning and engagement process due to differing background situations and objectives. This variation in approach is being discussed with PF2050 Ltd who are supportive of a revised approach.

The upcoming priority is to lead korero about effective governance and partnerships between each land care group and hapū, to ensure thorough input from all partners. This should enhance the mana enhancing agreement objectives as well.

Appointment of Pēwhairangi Whanui Project Manager will also be completed over the next month.

#### Whangarei Project

We are pleased to announce the appointment of our PF2050 manager for the Whangārei team, Vivienne Lepper, and also welcomed Matua Winiwini Kingi as a Tikanga Advisor to support our field team as a casual employee.

Work has continued with the development of an effective GIS and data capture system which has already provided valuable insights into possum and mustelid concentrations and a soft launch of the Whangarei PF website last week has been completed. This will review over the next week or two to iron out any issues and make improvements as necessary. This is an exciting achievement as it provides a platform from which future communications and project information can be shared and gives the community greater insight connection with the project.

The network of kill and live traps have accounted for 10 possums and 30 per cent of available toxin has been consumed after two weeks of laying possum baits.

Trail cameras are showing a range of possum and rat activity with a presence across all blocks. There is an early indication of overlapping mustelid and kiwi presence in the Te Whara (bream Head) block which may suggest a higher-than-expected risk to kiwi chick survival.

**Current Device Network:**

- 88 Kill Traps
- 90 Bait Stations (brodifacoum - 12.8kg / 194 g/trap)
- 82 Bait Stations (Double Tap (cholecalciferol and diphacinone)- 12kg / 110g/trap)
- 32 Leg Hold traps (later in June)

All private landowners adjacent to DOC land that will contain toxin have been contacted and the vertebrate toxin plan has been completed and peer reviewed.

Te Tiriti training for staff and PF community group members is being planned for late June. This was one of the desires communicated to the team from early community engagement hui and aligns with an offer from Whaea Moia Armstrong and kaumatua Hori Parata to deliver these.

**Hapu / iwi Partnership – Whangarei PF**

The PF programme is committed to developing strong hapū and Iwi relationships to ensure the programme is diverse and inclusive in design and approach. An invitation to korero between PF Manager and Ngāti Wai CEO occurred in late 2021 and early 2022 but has not yet been able to be extended to a wider hui.

An April blessing ceremony was postponed on account of Ngāti Wai concerns about the lack of hapū engagement. Follow on communications by the GM Biosecurity has not been responded to and at this stage we are awaiting further response by the Ngāti Wai Trust Board.

The intended Te Tiriti training planned for late June is hoped to be a lead-in to follow-on korero about the wider Kaupapa of partnership. Advice and input have been received from the councils Maori Engagement team who will continue to be consulted with and whose advice will be sought.

While we await a response, the Whangarei PF project delivery will continue, and will focus on fine tuning the operations and continue the set-up of possum control devices on the Taurikura ridge which is the next priority area.

The partnership will focus on engagement with current Whangarei Heads community groups, landowners, DOC, WDC and potential hapū pilot projects at Pataua and Maunga Taika.

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**Ngā tapirihanga / Attachments**

Nil

**TITLE:** Feral Deer

**From:** Vivienne Lepper, Biosecurity Manager - Pest Animals and Incursions

**Authorised by Group Manager/s:** Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on 17 May 2022

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### Whakarāpopototanga / Executive summary

This report provides an update on the sika eradication project and current northland deer incursions.

A goat cull across the area where sika deer are known from in Russell forest took place in February, and again in April 2022 and this work concluded phase two of the wider sika deer eradication program. Findings from the sika DNA trial (phase 1) showed the presence of a moderate population of feral goats which occupy the same habitat as sika and faecal pellets from goats and sika have a very similar appearance making it difficult at times to differentiate between the species. The cull reduced the goat population to low densities and has provided for more effective DNA survey as well as helping support the overall health of the forest.

The contractor for council, "Trap and Trigger" completed 70 hunter days, and culled 150 goats, 27 pigs and one sika deer. In addition, staff hosted a successful engagement gathering of local hapū, and landowners to provide an opportunity for them to meet with the hunters and ask any questions they may have about the project. Hapū and landowners were also taken by helicopter on a flight over the project area to view the terrain to understand the magnitude of the problem.

We are now planning for the sika survey to be carried out in October this year. The teams focus between now and then will be on engagement and landowner access agreements.

We are continuing to receive reports of deer escapes from a well-known deer farm near Kaiwaka. Since 2016 we have had nine escape events reported from this farm, three from this year. Our deer response contractors have responded to the most recent escapes and seven deer have been destroyed on the outside of his farm by private landowners. A letter has also been written to the Northern North Island Manager for the Department of Conservation requesting the Department consider revoking the farmers permit to farm deer. In addition, staff have been working with Northland Department of Conservation, OSPRI and MPI staff to agree on a streamlined protocol for responding to Northland deer farm escapes. This work has been particularly encouraging and DOC staff are taking a lead with OSPRI to develop a clear protocol for checking fences and enforcement.

In early May we received a report of an illegal release of 20 fallow deer into the Tangihua Forest. Staff have carried out extensive surveillance on foot, engagement with local farmers, drone aerial and thermal surveillance and not seen any evidence of a deer release. Staff will continue to monitor the area around Tangihua.

Grant McPherson has joined the deer incursions team as our new Biosecurity Project Lead – Feral Deer. Grant formally worked with Landcare Research on various wild animal control and biosecurity projects, the most recent being the Proof of Freedom project at OSPRI which aims at eradicating TB from New Zealand.

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### Ngā mahi tūtohutia / Recommended actions

1. That the working party note the information contained in the report.
2. Staff to update on further progress at a future working party meeting.



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### Ngā tapirihanga / Attachments

Trap and Trigger Goat Cull Report - [2022 03 Report Goat Cull Russell Forest v5.pdf](#)

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### Ngā tapirihanga / Attachments

Attachment 1: 2022 03 Report Goat Cull Russell Forest v5 [↓](#)



POST OPERATION REPORT  
**GOAT CONTROL**  
NORTHERN RUSSELL STATE FOREST

PREPARED BY | TRAP AND TRIGGER LTD

02

## 01 | EXECUTIVE SUMMARY

As a result of a request for quote submission from Northland Regional Council (NRC), Trap and Trigger Ltd were awarded the feral goat control contract in the Northern Russell State Forest. The project area consists of 2600ha of remnant kauri and regenerating forest between Russell Road and Manawaora Road. The operational area is comprised of private, public (DOC), and maori land blocks.

The goat control project is Phase 2 of the wider Russell Forest Management Plan/Sika deer eradication program, managed by the Northland Regional Council. Findings from Phase 1 (Bentzens Sika DNA Trial) showed the presence of moderate populations of feral goats (*Capra hircus*) which occupied the same habitat as the sika. Goat occupation complicated the deer survey and was likely to become a hindrance to during the deer eradication (Phase 3). The faecal pellets from both goats and sika have a very similar appearance making it difficult at times to differentiate between species. Phase 2's purpose is to reduce goat population to low densities to allow for more effective deer DNA surveying and help support the overall health of the forest and its biodiversity.

An important part of this project is to build and strengthen long term relationships between all stake holders including whānau (Families) Hapū (Tribal connections) and Iwi. This is to ensure that the health and wellbeing of the forest has the support and guidance of those who have its best interest at heart. And that all involved play an active role in constructing and developing the processes to maximise the health of the Ngahere (Forest).

The Northern Russell forests feral goat population has not been subject to any significant levels of control over the last decade. While there have been commercial efforts to suppress deer numbers and some recreational hunting pressure for pigs and deer, very little control of the goats has been undertaken. Recreational hunters have little interest in goats as a target species and limited funding previously limited opportunity for goat control. Historic funding has been prioritised to sika deer liberation to eliminate them. This is largely due to their potential landscape impacts across the region's forests rather than direct local impacts.



FIGURE ONE  
Ancient Puriri Tree  
(Wakefields Forest)

## 02 | WHY ARE UNGULATES A PROBLEM?

The impacts that introduced ungulates (feral animals) have on indigenous flora and fauna habitats in New Zealand are well documented. The biggest impact on New Zealand's ecosystems is the disproportionate removal of preferred food species, which in turn precipitates major changes in the composition of native vegetation (Nugent and Fraser, 2005). This is done through the consumption and subsequent elimination of palatable understorey species and the destruction of some sub-canopy species through browsing recruited seedlings and the stripping of bark on older species. Average reductions of woody stem densities in forests due to ungulates have been measured at 50-60% (James & Wallis, 1969) and reduced seedling and sapling density of hardwood-shrub species by 90% (Wardle, 1984). Long-term, the effect of these impacts leads to significant changes in forest demographics, loss of habitat, and carrying capacity for indigenous invertebrates, herpetofauna, and birdlife (Wardle et al., 2001, 2002). The impacts of ungulates at a site will vary according to how long the population has been established, the species present and the population density (Forsyth et al., 2009).

Supporting report: Deer, goats, and pigs that have extensively modified native forest understories are found to (Wardle 1984, McKelvey 1995) favour certain plant species over others as food and therefore considerably modify the vegetation composition. One recent report, using a 'seedling ratio index' across multiple sites (including the Marlborough Sounds) found that the following are highly-preferred species:



In 1978, three ungulate exclosures (30m x 20m) were constructed within the native forests to gauge the impact of ungulates, the effectiveness of controlling them, and the forest undergrowth recovery process in the absence of ungulates. Within a few years, a deep layer of leaf litter had accumulated within the exclosures, soil was beginning to be rebuilt from the litter, and the ground was covered in masses of ferns and tree seedlings. Many of the trees had produced new shoots from their bases. What used to be completely devoid of undergrowth had become a dense thicket, with canopy species well on the way to taking their place alongside the old trees. Prolonged impacts can be devastating, leaving the forest with a "hollowed out" structure, lacking undergrowth, and ultimately threatening canopy regeneration. In the Northern South Island, this phenomenon can be readily observed in many native forest remnants, such as those within the D'Urville Island Scenic Reserve, which has moderate ungulate numbers.







04

"It should not be possible to see far or walk easily within a healthy temperate rain forest. In the forests of the reserve though, the lower tiers of ferns, shrubs, seedlings and saplings are depleted or missing. From the outside they look great - healthy canopies and diverse vegetation on the edges - but the hollow interior tells a different story. Many of the smaller trees have their bark stripped by deer and are dead or wounded. And in the upland forests, where the giant land snails are, the ground is extensively bared and ploughed up. It's not just the direct damage that ungulates do that is the problem; once the damage is done, it only takes a few animals to prevent recovery." (Geoff Walls, pers. comm).

FIGURE TWO | An area of the Russell forest where no understory has been able to establish due to ungulate presence.

## 03 | OBJECTIVES

Implement a two-phase goat targeted approach with the aim to diminish the negative impacts inflicted by goats and other ungulates (when agreed to by landholders) within the operational area.



### PHASE ONE WOD METHOD

Applying the WOD method leaves no guesswork and allows for very good coverage and understanding of ungulate dispersal and densities. The key objective is that all resident goats detected are destroyed while removing deer and pigs that were encountered (when agreed to by the landholders) as a by-product.



### PHASE TWO HOT SPOTTING

Based on phase 1 dispatch data and areas where goats escaped encounters, hunters individually target these key areas with bailing and indicating dogs.



NORTHERN RUSSELL STATE FOREST | 2022

## TRAP AND TRIGGER | Goat Control

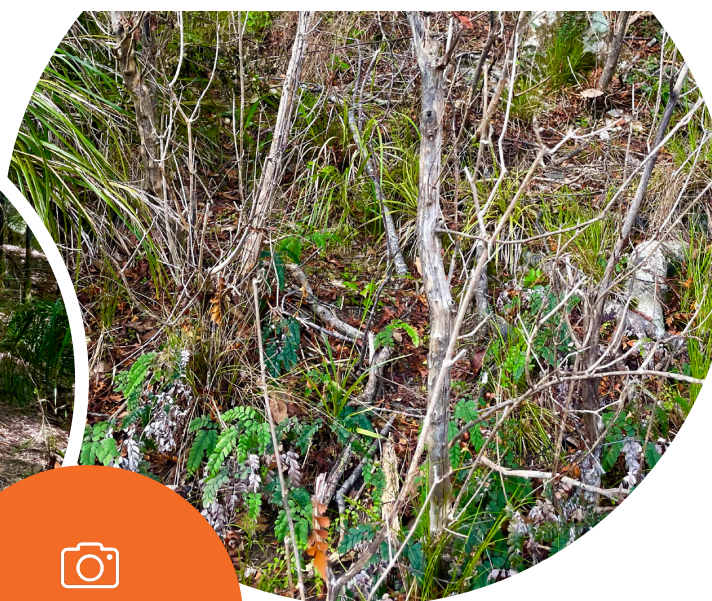


FIGURE THREE & FOUR

Understory Dieback  
- a Consequence of  
Goats Browsing

## 04 | FERAL GOATS



Goats are agile climbers  
so can get to places  
other ungulates can't.



Goats are diurnal with  
unsynchronised patterns  
of feeding & resting.



The stomach of feral  
goats contain an average  
of 19 plants species.

In New Zealand, feral goats have adversely affected vegetation, fauna, and land stability. Browsing by goats can significantly reduce vegetation biomass and can have short-term consequences on forests by changing the types of species in the understory. Goats are agile and sure-footed climbers/jumpers so they can get to places many other ungulate such as deer and pigs cannot.

Feral goats are diurnal (active during the day, sleeping at night), with unsynchronised periods of feeding and resting. Diet studies have found the rumen (stomach) of forest dwelling feral goats to contain an average of 19 plant species at any one time and occasionally as many as 30 different plant species. Goats are able to digest woody material and will often survive on whatever is available, including gorse. Like other hooved animals, they also eat pasture grass species.

Goats were introduced to New Zealand and populations were formed from escapees from domestic herds, rather than deliberate releases. It is believed that as a consequence of farm escapes, 62 new herds were established just between 1993 and 1996.

Forest or scrub covered areas with rocky substrates is their characteristic habitat. They are very adept at climbing steep faces and favour areas that are steeper with sun exposure. As opposed to pigs and deer, feral goats tend to be easier to stalk as their sense of smell and vision are not so sensitive. Goat control can become difficult when they are present in large groups as active shooting can allow for individuals to escape from an encounter. This is where aerial shooting is the most effective tool. Feral goats are not highly valued by recreational hunters and are generally pass-by, influencing their establishment and population increases.

FIGURE THREE & FOUR | Goat damage where the forest recruitment has been stripped of foliage.



TRAP AND TRIGGER | Goat Control

06



FIGURE FIVE

Team Safety Briefing

## 05 | HEALTH AND SAFETY

The operation was completed without any accidents or close calls. All activities were carried out safely and by correct personnel with appropriate training and certification. Signage was erected by Northland Regional Council at key points.

### MAJOR RISKS AND HOW THEY WERE HANDLED IN THE FIELD:

- 1** **SHOOTING DIRECTIONS AND RICOCHET** The hunters had to maintain a high level of firearm safety and remain disciplined at all times to observe their firing zone, type of backdrop, and identification of target before every shot. The seven basic rules of firearms safety and the foundation we follow are used when it comes to firearms use.
- 2** **BLUFFS AND STEEP TERRAIN** To minimise the risk of any slips, trips, and falls, the hunters ensured that they didn't push their personal limits and turned around and headed back when the terrain was too steep or difficult for the hunter's ability. Suitable footwear is compulsory.
- 3** **SHOOTING IN WOD LAYOUT** When a hunter was likely to approach a target (dog indication, fresh sign sighted), they were able to sight where the hunters next to them were and then communicate through the radio that they were closing in on a target. The seven basic rules of firearms safety are still the key to safe shooting in a WOD, especially backdrop, identifying your target, and firing zone.
- 4** **HELICOPTERS** All team members were familiar with Trap and Triggers standard helicopter operating procedures. The pilot also delivered a safety briefing before each flight.





TRAP AND TRIGGER | Goat Control

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## 06 | SUMMARY OF EVENTS



### GROUND WOD

50 hunter days completed of the intended (A days effort = 8 hours in the field)  
103 goats and 25 pigs were removed during the team sweep.



### GROUND HOT SPOTTING

20 hunter days completed  
27 goats and 2 pigs removed



### HELICOPTER USE

4 x hunter drop offs and 1 x hunter pick-up was utilized for hunter drop-offs

130 Goats and 27 Pigs Removed.

157 TOTAL UNGULATES.

### MONDAY 21 FEBRUARY

**08:00 Trap and Trigger team arrive at Whangarei Airport** Our team was welcomed at the airport by the Wild Animal Control Officer for Northland Regional Council Trevor Bullock. From there we made our way to our accommodation in Russell. On behalf of our team, we would like to acknowledge Trevor for his efforts in organising transport and food supplies for us prior to us arriving.

**12:00 Northland Regional Council Kauri Protection Workshop** The importance of protecting and preserving the flora and fauna of our country is our priority, so when we were asked to participate in a Kauri Protection Workshop delivered by Gavin Clapperton & Adrian Peachey from the Northland regional Council, it was a no brainer for our team. The respect that we have for the biodiversity of the areas we have the privilege of working in demands that we take every precaution to protect the forest from harm. Once again thank you to the Kauri Protection team at NRC.

**14:00 Flights Over The Project Area** Whānau/ Hapū/Iwi/Private Landowners were given the opportunity to fly over the project area. Many had never seen their homelands from the air and once witnessing the terrain from above came to understand the magnitude of the situation regarding the goats and other introduced species currently residing within their land parcels. For many there was a feeling of great sadness and an understanding of the reasoning around the delivery of the goat cull operation.

**17:00 Whānau, Hāpu, Iwi, Private Landowners & Stakeholders Dinner** Karakia/ Mihi Whakatau/ Whakawhanaungatanga / Dinner/ Presentation Forest Health (Dean Baigent -Mercer) / Karakia Whakamutunga  
A combined effort coordinated by MPI, DOC & NRC for the purpose of introducing ourselves to the Whānau, Hapū, Iwi, Private landowners, and the opportunity for dialog te tētahi ki tētahi (one to another) conversations between our team and those who have given us permission to access their properties over the course of the operation. Where any question could be answered, or clarification given. But most importantly to build relationships based on respect, trust, honesty, and confidence that we are there to not only perform our duty, but to honour our word.



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## TRAP AND TRIGGER | Goat Control

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### TUESDAY 22 FEBRUARY

**05:00 Dawn Karakia** We would like to acknowledge our Kaumātua Heemi Witihiira for his acknowledgement of us the kaimahi (Hunters) and the mahi we have been entrusted with. And for the blessings he asked for on our behalf, blessings of protection, strength, guidance, and support from Te kaihangā (The Creator) and ō tatau tūpuna (all our Ancestors).

**06:00 Breakfast Onsite** A BBQ of Bacon, Sausages & buns followed by a hot cup of tea & coffee was provided after the dawn karakia for our team and all those that were in attendance. The food was a surprise but greatly appreciated big thanks to Whānau/Hapū member Dehlia Quedec & NRC Trevor Bullock & Vivienne Leaper for organising this for us all.

**07:30 Operation Goat Cull Begins** Hunters carried out a WOD starting from the Russell Whakapara Road down through Ranginui property and out at the Whakawhiti Stream.

**18:00 Meat Recovery Kaupapa- Karakia/ Mihi Whakatau/Whakawhanaungatanga/Dinner** An opportunity to meet with some of the kaimahi from Ngātiwai who were keen to work alongside us to recover some of the animals from the goat cull operation. A dinner was organised by the wild Animal control team at NRC for the purpose of constructing a plan of action to retrieve the meat, process it and to distribute it out to the whānau, hapū and Iwi. A plan was made, and it was decided that our team and the kaimahi would meet later in the week to follow through with the plan.

### WEDNESDAY 23 FEBRUARY - MONDAY 28 FEBRUARY

- Hunters carried out WOD completing Bentzen's and partial Elliot's.
- Hunters carried out a WOD, working through the remainder of Elliot's, also completing the Garnett and Lawler area, stopping at the McGee's boundary.
- Hunters carried out a WOD moving to the west through Bentzen's, coming out at the Puhinui Stream.
- Hunters complete the WOD sweep by covering the DOC and Maori blocks, Wakefield and Walker blocks finishing at the McGee's boundary.
- Hunters were allocated a daily cell to undertake hot spotting, covering most of the operational area.
- Hunters again were assigned areas to undertake hot spotting, largely covering the same areas. We were also granted access to the McGee property the night prior, so a quick 4 man WOD was carried out on this property. That evening, hunters travelled back home.

### FRIDAY 25 FEBRUARY

**09:30 Kaimahi Flight Over the Project/ Operation Area** A combined effort organised by MPI and NRC to fly a team of kaimahi from Ngātiwai over the project area prior to retrieving animals for meat distribution. I had the privilege of flying with the kaimahi as their tour guide, explaining the mahi that was required and the challenges that we as hunters face within the realm of our work. Kaimahi got the same opportunity as the landowners to see their home from above and to witness with their own eyes the contour of the whenua and the intensity of the mahi required.

Unfortunately, many of the animals dispatched were in difficult to reach locations. And the plan to work alongside of the kaimahi taking them into the Ngāhere to recover the meat did not eventuate. However, several pigs and goats were recovered by our team and were carried out and given to the kaimahi to be utilised for the benefit and use of the whānau, hapū and Iwi.

We are grateful for that opportunity to work alongside the rangatahi (Youth) of Ngātiwai as we are aware of the vital roles of guardianship that need fulfilling to ensure that the Ngāhere will be taken care of in the future. We would like to continue this relationship with the Ngātiwai Kaimahi and offer our support in helping them to fulfil their own concepts of forest restoration using the culling tool in the future.



TRAP AND TRIGGER | Goat Control

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## 07 | UNGULATE POPULATIONS AND DISTRIBUTION

Across the project area, ungulate densities vary from low to high abundances dependent on the associated vegetation types.



### FERAL GOATS POPULATIONS AND DISTRIBUTION

Goat densities varied throughout the operation area. The overall population was at moderate densities, however localized concentrations in preferred habitat presented as high densities. Many of the goats were found in small groups of two or three individuals, with three large groups of 10+. One of 21 goats was the highest encountered of which all were removed. It was noted that the large majority of goats were found in the upper reaches of the catchment above 200m altitude. Few goats or goat sign was observed in the lower valley reaches, paddocks and scrubland areas.

NOTE: Because there are low populations of goats around the forest fringe but high concentrations of goats in the steep inland areas, this could produce a misrepresentation of goat populations and their associated damages to the ngahere. For members of the community that do not venture far up the hillside it is understandable that the number of goats observed would be disproportionate to the overall number of goats inhabiting the Northern Russell Forest.

FIGURE SIX | Group of 21 goats removed during WOD.



## TRAP AND TRIGGER | Goat Control

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### FERAL PIGS

#### POPULATIONS AND DISTRIBUTION

Feral pigs and sign of pigs indicate densities were high throughout the entire operating area. The majority of the major creeks had extensive pig disturbance throughout the forest floor. In some cases, hunters referred to pig sign as the most they had encountered in a day across their commercial hunting career. Feral pigs typically experience population boom and busts, associated with harsh seasons and available food resources. It's likely pigs were in a boom phase during this operation. The team concluded that pig numbers are likely higher than goat numbers in the Northern forest and that the number of pigs shot/removed during this operation is a fraction of the remnant population. In respect to the DNA survey, pigs are not going to be a hinderance, however from a forest health perspective, it is evident that the density of pigs is not sustainable. In the best case scenario, recreational hunters and landholders would be able to stabilise the pig population rather than considering commercial intervention. It is believed that the fact that there are over a dozen moderate size landholders on the southern end of the forest may deter some recreational pig hunting due to the risk of pig dogs crossing multiple land parcels.

NOTE: This was not a targeted pig control operation. Only where landholders requested for pigs to be removed, they were shot upon encounter, opportunistically. The methods applied to target goats, does overlap with pig control methods, however is not highly effective on pigs compared to pig specific dogs



### FERAL DEER

#### POPULATIONS AND DISTRIBUTION

Deer sign was encountered in small, localized areas, largely in the Northern half of the forest and predominantly in the lower reaches of valleys and scrubby slopes. 6 deer were observed during the operation, and sign of several others was confirmed.

NOTE: Our intention was to shoot deer upon encounter where landholders consented. However, all encounters were brief and did not present opportunity to shoot. The team WOD method is relatively fast moving and not well suited for deer control, additionally, these deer have been subject to intensive hunting and their behaviour showed a heightened awareness towards hunters.

## 08 | MOVING FORWARD

There is scope to return to hotspot areas once the dust settles and residual goats return to the hotspot areas. Providing budgets and access permits allow, we believe there is benefit in returning and undertaking 5 – 10 days effort in the key hotspot areas to further reduce the goat population, enabling longer term benefits from the operation. Additionally, landholders will have an opportunity to direct hunters to locations where goats may have been seen or heard post-control.

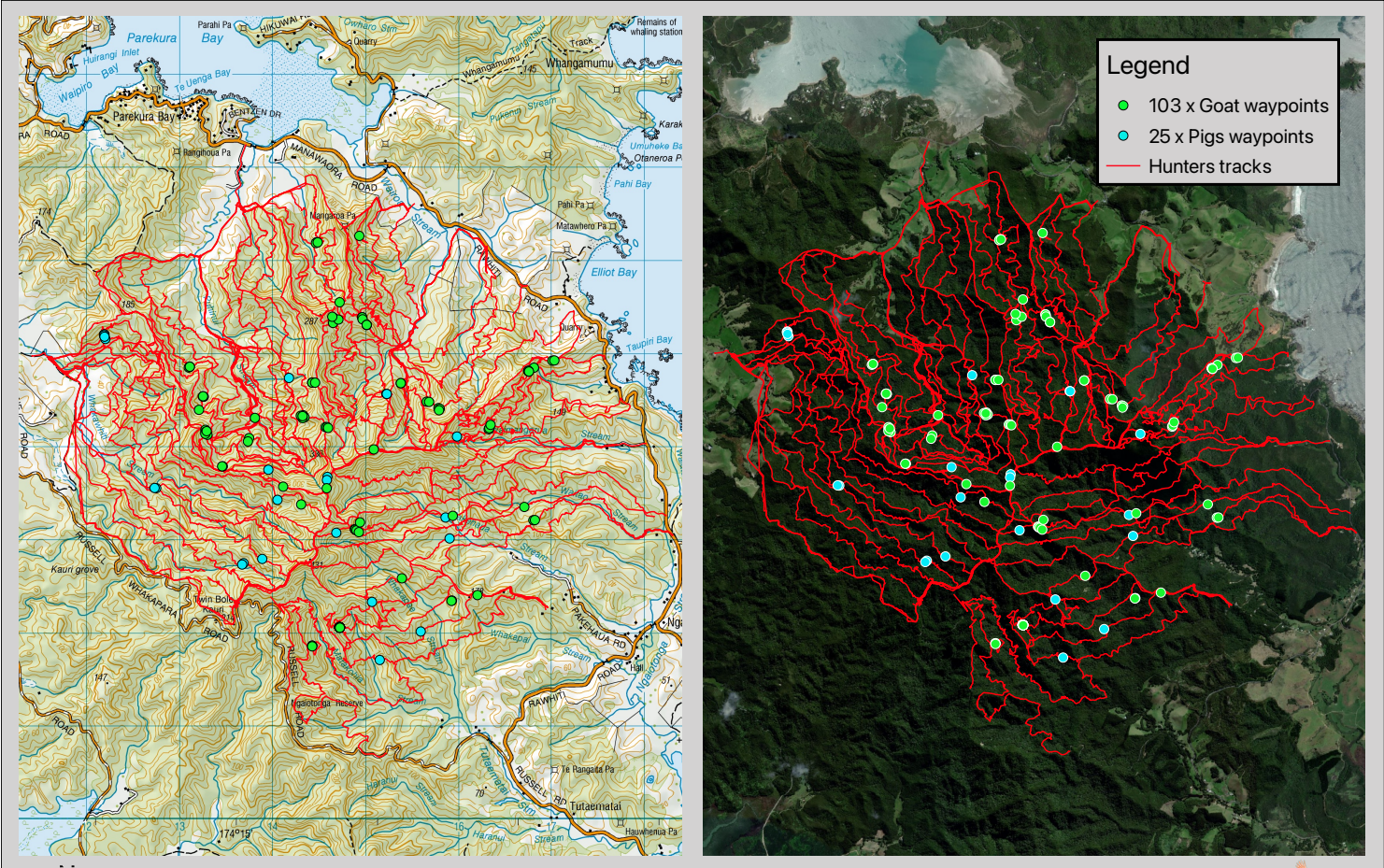




TRAP AND TRIGGER | Goat Control

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09 | MAPPED RESULTS >> RUSSELL GOATS WOD EFFORTS

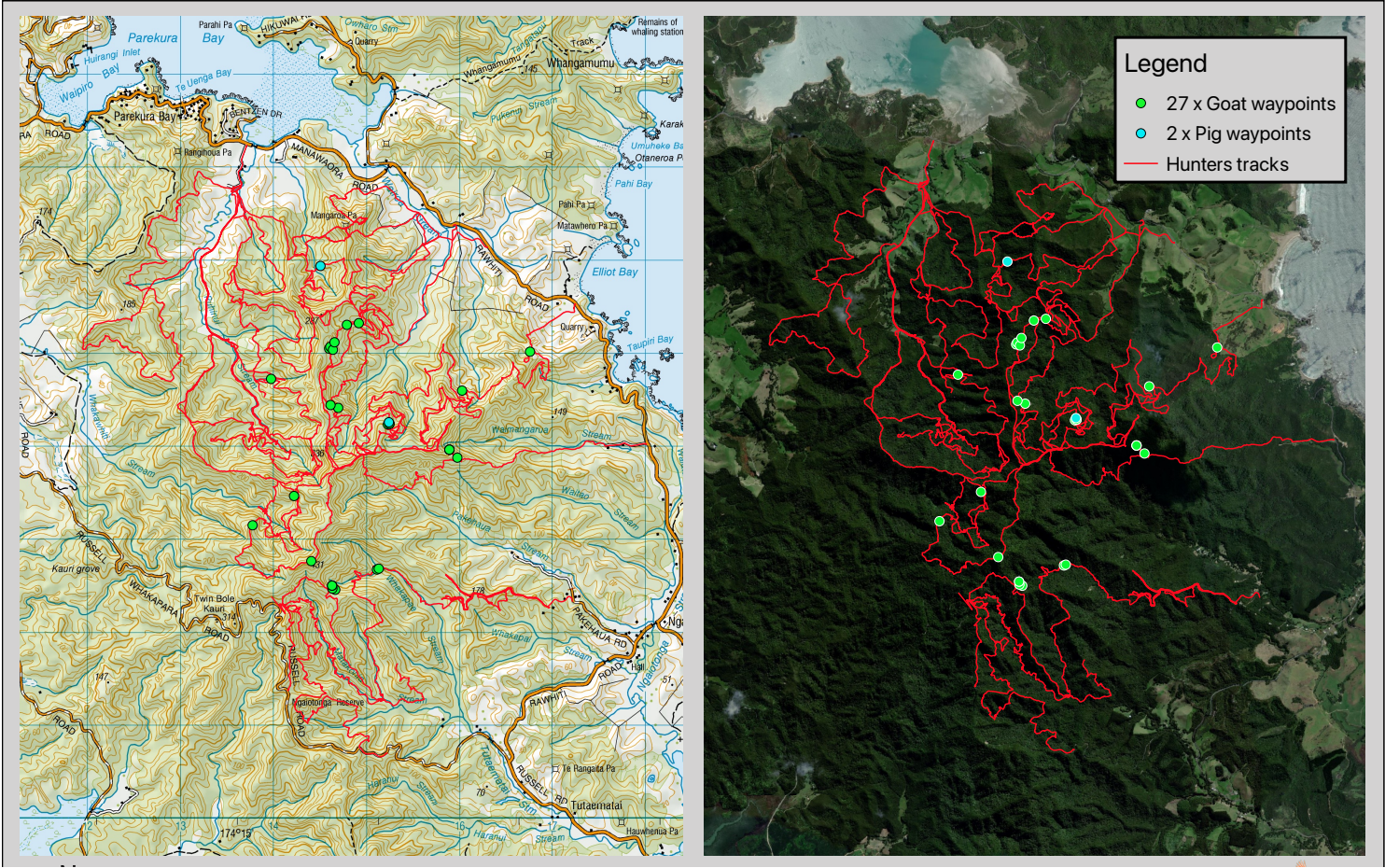




TRAP AND TRIGGER | Goat Control

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>> RUSSELL GOATS HOTSPOT EFFORTS

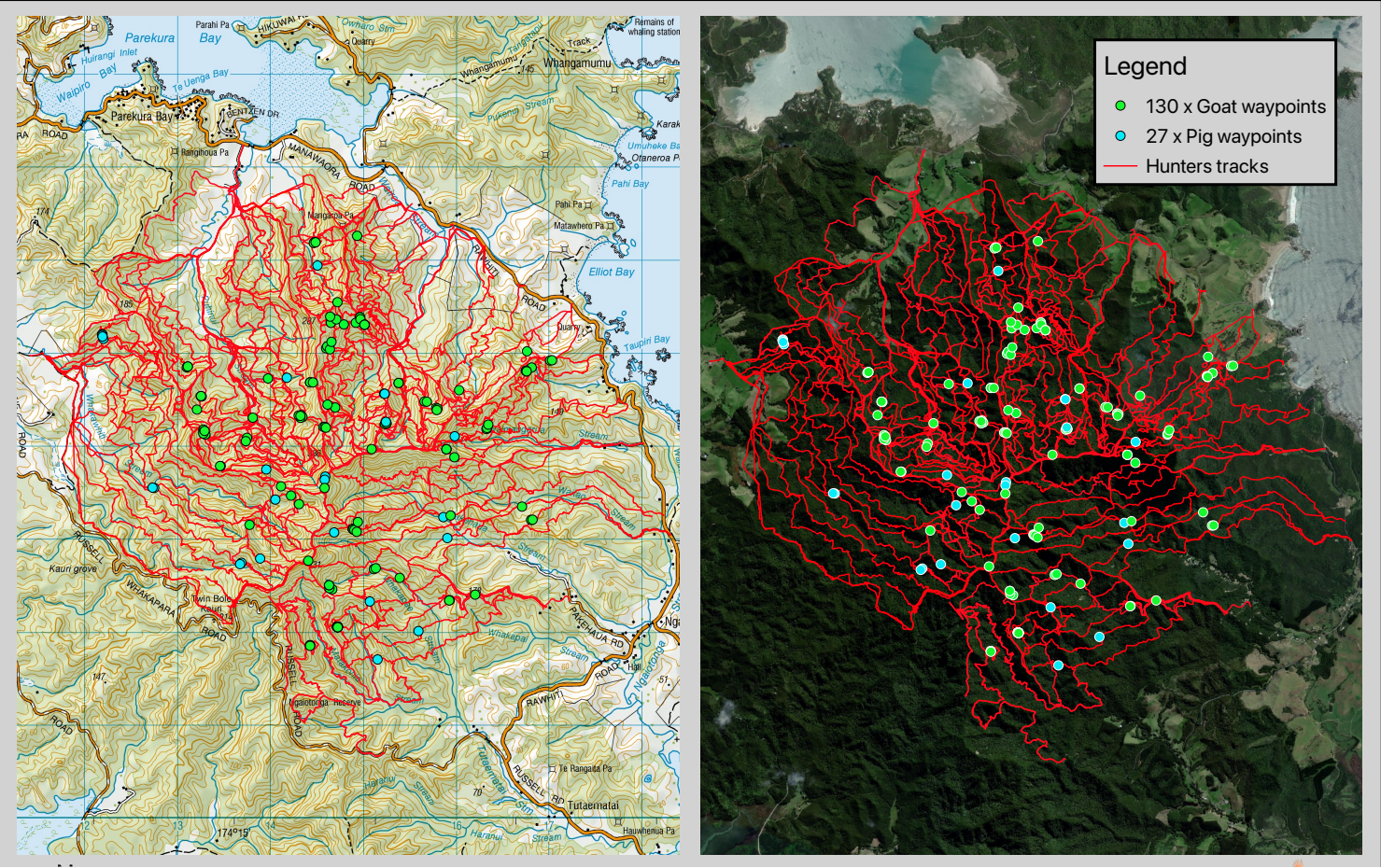




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>> RUSSELL GOATS COMBINED EFFORTS



## TRAP AND TRIGGER | Goat Control

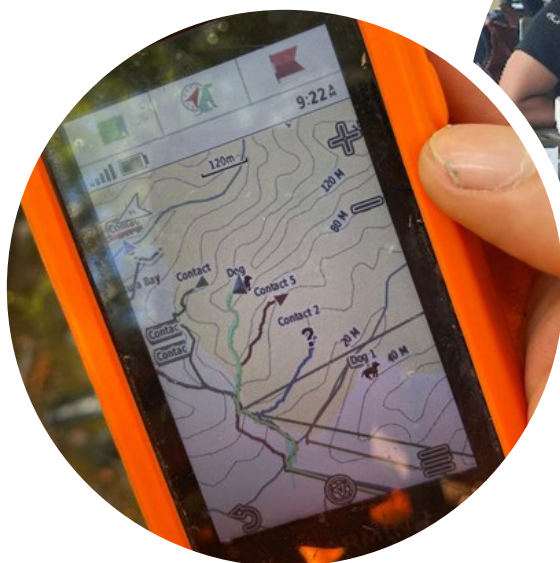


FIGURE SEVEN  
Hunting Team Spaced  
in WOD Formation



FIGURE EIGHT  
Community  
Involvement

## 10 | OPERATIONAL SUCCESSES

### WOD | Wall of Death

A WOD technique is a cohesive team of hunters, sweeping a designated area in a line format with even spacing between the hunters. The spacing was approximately 150m, which is close enough for the indicator dogs to detect the presence of goats between the spacings. Hunters communicate via radio and visual GPS location to allow the hunters to work efficiently and safely.

The WOD method is good for gaining comprehensive understanding of population distribution without guesswork, while having a high success rate of removing goats on encounter. WODing enabled the larger mobs to be effectively removed, by having hunters on the flanks to intercept escapees.

### COMMUNITY INVOLVEMENT

It is important to note that although this project is driven by local govt agencies such as Northland Regional Council and Department of Conservation, it is ultimately a community enabled operation. It is inspiring to see the people of the land, tautoko (Support) this mahi, and acknowledging that the Ngahere needs all our help to protect it from the damage caused by goats and many other introduced species. Regardless of the size or location of each land block we included in our considerations the fact that any efforts made would enhance the sustainability of the Ngahere, improve the quality of the waterways and all for the benefit of the flora and fauna and for the many generations to come and to enjoy.

A special thanks to The Ministry of Primary Industries, Department of conservation and The Northland regional Council for their combined efforts in bringing the community together for this project and for helping to build strong relationships necessary for projects like this one to start a journey and to carry on. This is one of the components to the success of this operation.

It was great to see and feel the support from the wider community Whānau, Hapū, Iwi and private landholders. Feral goat control is sound environmental work, benefitting the forest ecological health and the delicate and nationally significant Kauri Forest.

He aha te mea nui o te ao. He tāngata, he tāngata, he tāngata.

What is the greatest thing in this world? Tis people...Tis people...Tis people  
for without the support and help of the people, we cannot move forward as one.







## 11 | CONCLUSION

There are only few examples where an entire community have come together to enable a landscape scale feral goat control operation across multiple land parcels. It is that you, the Kaitiaki (Stewards) of this whenua have a connection to the land that is deep enough that you hear it call to you to engage as guardians and protectors of its existence. The Trap and Trigger team are not only proud but also honoured to have been given the privilege of working alongside the people of these lands.

In all the mahi we have performed throughout our country, we have not experienced this extent of Manakitanga (hospitality) we would like to express our gratitude and appreciation to all those who have been involved in making this kaupapa (Project) a success and an experience to remember. Thankyou to Ministry of Primary Industries who have funded this project and DOC for contributing. I reassure you all that we would be more than happy to continue supporting the families of this region if any further assistance is required in the future.

On behalf of our team...Thank you!

Nga mihi nui

Jordan Munn | Director  
Trap and Trigger Ltd



Whatungarongaro te tāngata toitū te whenua.  
For as man disappears from sight, it is the land that still remain.

NORTHERN RUSSELL STATE FOREST | 2022

**TITLE:** Progress on Road and Rail Plans with Agencies

**From:** Joanna Barr, Biosecurity Manager Pest Plants

**Authorised by** Don McKenzie, Pou Tiaki Pūtaiao - GM Biosecurity, on 17 May 2022  
**Group Manager/s:**

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### Whakarāpopototanga / Executive summary

This report provides an update on the progress made with road and rail authorities toward meeting their obligation under the Regional Pest Management and Marine Pathway plan to prepare and implement five-year road and rail weed management plans. It outlines the barriers to change and the planned and suggested actions to address these issues for further discussion.

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### Ngā mahi tūtohutia / Recommended actions

1. Working party note the content of this report
2. Working party support the planned actions

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### Background/Tuhinga

The Northland Regional Pest and Marine Pathways Management Plan 2017 – 2027 introduced the requirement for road and rail authorities to prepare and implement a five-year road and rail weed management plan negotiated with and agreed to by Northland Regional Council (Rule 6.4.2.2). A further rule requires road and rail authorities to control pest plants where the adjacent or nearby land occupier is taking reasonable measures to manage these species or their impacts on pastoral production or environmental values (Rule 6.4.2.1), in response to complaints from directly affected land occupier, where the pest plant is present in the transport corridor at a such a density that significant cost is being imposed on that complainant.

The purpose of the weed management plans, and the other supporting rule, is to guide more proactive weed management in the road and rail corridor, to reduce the impacts of sustained control pest plants and the potential for spread to other properties. There is a secondary goal of rehabilitating transport corridors to improve their resilience to future weed re-invasion.

The rule dictates that the plans should include ‘any or all of the pest plant species in the Regional Pest Management Plan’, but gives specific priority to broom, Taiwan cherry, cotoneaster, gorse, wilding conifers, and wild ginger.

Given the scale of the road and road network to be managed, the new Plan rule directs road and rail authorities to develop annual operational plans with the following priorities:

- *through high-visibility public spaces such as town entrances.*
- *near schools and other public spaces.*
- *where resealing and/or rehabilitation is already underway or is planned.*
- *through areas of high biodiversity value.*
- *in areas with a low incidence of the target weed species.*
- *in areas adjacent to low re-infestation areas such as weed-free farmland.*
- *in areas with high traffic volumes.*
- *and on receipt of a complaint from a directly affected land occupier.*

The rules replace the more limited requirements of the previous Northland Regional Pest Management Plan 2010 -2015, in which the rules required the implementation of a control

programmes to progressively control four named species, being privet, gorse, pampas and wild ginger, in accordance with five-year management plans. That rule directed that these control plans prioritise areas of the network where the adjoining land was clear or only sparsely infested with the target weed.

### **Progress to date**

All roading authorities were formally advised of this requirement when the new Plan was adopted, were provided with guidance for developing plans, and subsequent meetings with staff were held to provide additional guidance and input.

Despite this, the majority of the road and rail authorities have failed to submit and implement plans that satisfy the intent of the rule. This is a continuation of a similar pattern from the previous requirement for the development of 5-year management plans for privet, gorse, pampas.

Waka Kotahi NZ Transport Agency (NZTA), responsible for the state highway network, is the exception to this. The NZTA engaged Opus to develop a relatively comprehensive plan in consultation with council staff and delivered a plan that was approved in 2014. This plan has anecdotally seen the NZTA taking a more proactive approach to weed management, but this has not been formally assessed. This plan was due to be updated in June 2019 to incorporate the changes in the new Regional Pest Management Plan, but we have struggled to get this work prioritised during the COVID response period.

The Whangarei District Council also submitted a plan in 2018, and this plan was used to secure co-funding from the NZTA for pest plant management. However, while the plan did reference the key criteria outlined in the RPMPMP Rules and guidance, it did not have enough detail around how these would be implemented, and in practice the focus and majority of the limited budget remains heavily weighted to control work where the driver is water table and sight line maintenance for road structure and safety purposes. Environmental weed control is still limited and being managed primarily through a complaint driven/point-record response rather than a more holistic and strategic approach to managing the road corridor.

The Kaipara District Council subsequently also drafted a plan closely based on the Whangarei District Council Plan, but this plan was not accepted by Council nor by the NZTA as being sufficient to meet their co-funding requirements.

There has been very little engagement in the process by Far North District Council, and no plan has been submitted. KiwiRail engaged in initial discussions with staff but did not progress beyond that and draft or submit a plan.

Until recently, with the employment of a team member focused on pest plant partnerships, pest plant staff have not had the capacity to apply the pressure and support needed to progress this issue.

In the interim staff have been working with roading authorities around annual priorities and supporting delivery work through a Council fund focused on targeting priority species in the road corridor.

From subsequent meetings with the roading managers to determine a path forward, it is clear that a significant step change is needed to make a material difference to how weeds are managed in the road corridor. The following key barriers have been identified:

- As a result of the scale of the network to be managed within the current budget envelopes the scope of the plans can have a very constrained starting point. Northland includes about 8,380 kilometres of road. KiwiRail manage 18,000 hectares of land and 3500km of rail corridor across New Zealand, 223 kilometres of which is in Northland.
- The primary focus of the roading authorities is road safety and protection of the infrastructure. The limited funding available is prioritised for water table and sight line maintenance. Weed management for other purposes is viewed as a more minor concern.
- A wider lack of focus on weed management means it is not often being prioritised at a Governance and policy level. Budgets have remained static or declined in real terms. While the district councils are receiving increasing complaints about weeds in the roading network, there is still considerably more public pressure on other areas of district council delivery.
- The roading authorities currently lack the expertise in their teams to design management plans based on ecological/weed management principles, so consequently a significant amount of support would be required to help design a different approach.
- The tools and approach currently in use need to be changed. The primary means of control is a single non-selective herbicide mix, is applied via gun and hose, which kills the grass ground cover, as well as the weeds targeted. A selective mix that was designed to protect grass ground cover would reduce reinvasion rates but would require a secondary treatment method for monocot species such as pampas. The gun and hose approach are also more likely to result in non-target impacts, especially where the target species is climbing vines such as moth plant. The current justification for this model is that it is the most cost-efficient to deliver. A change in approach would also require an investment in contractor training for weed identification and control knowledge.
- The asset management databases used to manage network were not designed with a wider weed management purpose in mind and are currently set up to record weed infestations at point based 'defect' records, rather than roads being able to be categorised/prioritised based on an overall priority or status. There has been limited priority given to survey and weed data capture given that system has limited capacity to manage and update the data. Internal project leadership would be needed to see what modifications could be made to the systems to enable them to be better used as planning and tracking tools for a weed management programme. The addition of simple contextual layers would assist the identification of priority areas (DOC priority sites, Council High Value Areas, SNAs etc).

### Planned actions

An additional staffing budget from the Long-Term Plan has meant the plant pest team is now able to engage more proactively with the agencies concerned.

The Northern Transport alliance (NTA), which is a collaboration between local government and NZTA, has recently elected a new chair, and the intention is to engage with the NTA via the Chair to create policy and a framework to be utilised by all of the local roading authorities. They are currently recruiting to fill a vacant position for the Kaipara (new position should be in place this month) and the Chair has committed to working through a strategy development process with NRC once this position is in place.

The below summarises the intended/suggested approach to address the barriers and make progress:

- Engage via the Chair of the NTA to progress the local roading authority approach and plans.

- Look at options for Council to advocate for increased focus and resourcing for weed management at a Governance level. Submit or support Long Term Plan and Annual Plan initiatives.
- Re-purpose Council funds previously used for direct weed control in the road corridor to support the engagement of consultants to help with the development of framework and or update of data management systems.
- Continue to advocate for and help drive a change in approach and the tools used, both with the roading authorities and their key contractors. Provide the required support for contractor training.
- Develop simpler mechanisms for adjacent neighbours to get approval and support to treat weeds in the road corridor from their side of boundary fence.
- Provide clearer recommendations for hygiene measures and seasonal mowing restrictions for inclusion in the plans and in maintenance contracts.
- Staff to follow up with the NZTA to revise expired plan.
- Where staff have offered support but there is continued lack of action, to escalate the continued non-compliance through more formal processes.

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### Ngā tapirihanga / Attachments

Nil

**TITLE:** FIF Dune Lakes programme and herbicide update

**From:** Lisa Forester, Biodiversity Manager and Jacki Byrd, Biodiversity Specialist - Freshwater

**Authorised by** Jonathan Gibbard, Pou Tiaki Taiao – Group Manager Environmental  
**Group Manager/s:** Services, on 17 May 2022

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### Whakarāpopototanga / Executive summary

The recent application of Aquathol to control hornwort in three dune lakes has significantly reduced the hornwort in the lakes. However, wetland vegetation was also unintentionally damaged. Staff have completed a site visit to record damage to wetland vegetation at Lake Tutaki on the Poutō Peninsula. Four vegetation plots were established. Vegetation types and damage in each plot were measured. The plots will be revisited in six months to determine if vegetation is recovering or if a restoration plan is required. Two more applications of herbicide will be applied to the lakes next spring and summer, if required, to achieve the goal of hornwort eradication.

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### Ngā mahi tūtohutia / Recommended actions

1. That the report FIF dune lakes programme and herbicide update be received
2. That staff report back on the outcomes of the next visit to the vegetation plots in six months' time.

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### Background/Tuhinga

As part of the Freshwater Improvement Fund Dune Lake Project hornwort was controlled in Lakes Tutaki and Egg on the Poutō Peninsula and Mt Camel, Houhora, using the herbicide Aquathol on the 29<sup>th</sup> and 30<sup>th</sup> of March 2022. The herbicide operation went as planned and it appears from initial surveys that the hornwort has been significantly reduced by the herbicide.

Eight days after the application of Aquathol (7th April) it was noted by NRC and DOC staff that lake margin and wetland vegetation had been unintentionally damaged by the herbicide at Lake Tutaki.

A report was prepared based on the preliminary information and this report recommended further investigation and the establishment of monitoring plots to measure the extent of vegetation change and (hopefully) recovery, over the next year. The area affected appeared to be less than 2 ha.

On 27 April 2022 the field team inspected areas at Lake Tutaki that were sprayed, assessed the damage to vegetation around the lake and in the wetland and established four vegetation plots to monitor change over time.

There were definite signs of vegetation damage but in general, the damage appeared less serious than expected with some evidence of vegetation regrowth. Areas of reedbed, mānuka and kānuka appeared less brown than in drone footage taken immediately after spraying by the Department of Conservation. Mānuka and kānuka had young leaves at the branchlet tips and rūpo crowns had fresh growth, although this plant does naturally die back over winter. Dieback was patchy, particularly in the mānuka stands at the southern end of the lake. Subcanopy vegetation was less damaged than canopy vegetation.

It is intended to return in around six months to remeasure the plots (around November) once rāupo is greening up for the summer. Non sprayed plots are a non-treatment or control reference and the results from the sprayed plots can be compared to them to see whether sprayed areas have recovered and whether a restoration plan will be needed.

A full report on the field trip and the establishment of the vegetation plots has been prepared and this is attached to the agenda.

Lake edge and wetland vegetation damage have also been recorded at Lake Egg and Mt Camel North. Vegetation plots at these lakes have not been established, but photos of the damage have been taken. Follow up visits will be undertaken in November to assess the vegetation at these lakes to see if recovery has occurred. If not, a restoration plan will be prepared.

Two further applications of Aquathol are planned in spring and summer 2022 to achieve the aim of hornwort eradication in the lakes. Lake SPI surveys will be undertaken before spring to determine the extent of remaining hornwort.

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### **Ngā tapirihanga / Attachments**

Attachment 1: Report Lake Tutaki and wetlands follow up field investigation of Aquathol damage [↓](#)

**28 April 2022**

**Northland Regional Council report on field assessment of damage to wetland vegetation following the application of Aquathol at Lake Tutaki in March 2022.**

**Author: Lisa Forester (Biodiversity Manager) and Jacki Byrd (Biodiversity Specialist – Freshwater), Environmental Services Group**

**Project owner: Lisa Forester**

**Project manager: Jacki Byrd**

**Introduction:**

On 27<sup>th</sup> April 2022 NRC staff (Lisa Forester and Jacki Byrd) were accompanied to Lake Tutaki by Richard Rope (Department of Conservation) and a mana whenua representative, Paraire Kena. The purpose of the visit was to assess the site after the application of Aquathol K to Lake Tutaki and associated wetlands on 29<sup>th</sup> March 2022 including associated damage to vegetation around the lake.

The reason for the investigation was that 9 days (7<sup>th</sup> April) after the application of Aquathol it was noted by NRC and DOC staff that marginal and wetland vegetation had been unintentionally damaged by the herbicide.

Aquathol is a desiccant spray which is toxic to terrestrial plants and it was obvious that the spray had burnt above-water vegetation. The helicopter flight path and maps provided for the hornwort control plan determined that around two hectares of wetland vegetation had been damaged as well as a thin strip on the lake edge at the north end of Lake Tutaki.

The Environmental Protection Agency, NRC senior managers, councillors, Department of Conservation and mana whenua were notified in a report: [Damage to wetland vegetation following Aquathol application to control hornwort](#) (Attached). In the report a field visit to investigate further was recommended including establishment of monitoring plots to measure the extent of vegetation change and (hopefully) recovery, over the next year and to collect soil and vegetation samples to analyse for Aquathol residue. It was also recommended that if the vegetation plots showed that the recovery was not progressing, a restoration plan should be developed to ensure full recovery of the wetland areas. After contacting three companies that undertake endothall (Aquathol) residue sampling it was found that they do not analyse vegetation and soil samples, so no samples were taken.

**Vegetation Plots**

Two pairs of vegetation plots were established consisting of one sprayed (treatment) and one unsprayed (control) plots, four in total. The plots were measured using standard Wetland Condition Index species score including species, maximum height and % density in the canopy, sub-canopy and ground tiers. Additional to this dieback/dead foliage percentages were also recorded for each species.

A 5 x 5 m sprayed plot was measured near the jetty at lake Tutaki. A reference 5 x 5 m non-sprayed plot with a similar species make up was measured at the south-western corner of the lake just outside the treatment area. Unfortunately, a suitable non sprayed site was not available



closer to the treated jetty area. Both these plots were lake margin with rāupo over swamp millet at the water's edge to *Machaerina juncea* and kānuka (*Kunzea amathicola*) over pampas on the bank.

A second 10 x 10m plot pair was established in the wetland south of the lake. These plots had some short canopy mānuka or kānuka with rāupo and *Machaerina* sedges. The sprayed plot was more floristically diverse with a few plants of marsh fern (*Thelypteris confluens*) which is listed as At Risk – Naturally Uncommon under the mānuka. Poutō is a stronghold for this species. Photos of plots 1, 2 and 3 are shown in Appendix 1.

## **Results**

### **Water Quality**

During the by kill survey undertaken on 1 April it was noted that Lake Tutaki was likely to have an algal bloom, along with nearby lakes. A water sample was taken on the 7<sup>th</sup> of April and sent away for analysis. The results showed high cyanobacteria levels, but they were not cyanotoxins (Appendix 2). Divers cannot undertake LakeSPI dives if there is a risk of cyanotoxins. During this visit on the 27<sup>th</sup> of April the water looked a lot less yellow/green indicating that the bloom is subsiding with the cooler weather. The visibility is still only 40cm and the DO readings at 77% are just below the recommended 80% EPA threshold for post-herbicide treatment.

### **Lake Life**

Several dabchick, kawau and black swan were seen on Tutaki and a large flock of ducks was disturbed at a waterbody south of the lake which had been treated with Aquathol. Common bullies and two tuna (eels) were seen near the jetty at the northern end of Tutaki.

### **Hornwort**

A small excursion around the northern treated end of the lake using a kayak revealed no evidence of hornwort. A grapnel (lake bottom vegetation sampler) was deployed from the jetty but only retrieved small amounts of dead and rotting vegetation, presumably hornwort.

Hornwort was noted at the surface of a small waterbody south of the lake which had not been treated.

### **Public Access**

Easter and the long Anzac weekend saw an influx of visitors and 4WD vehicles to the Poutō dunes and Lake Tutaki. Around the lake impacts included litter, trees cut down for firewood, trees rammed over by vehicles, a rubbish fire with fresh garden waste in the fire pit and human waste on the lake edge. In addition, five chickens (roosters?) have been released at the lake (Figures 1 and 2).



Figures 1 and 2: Recent vegetation damage, clearance and release of chickens at Lake Tutaki by the public. Trees have been pushed over and chickens released.

### Vegetation Plots

#### General Vegetation Condition/Damage

The field team inspected areas that were sprayed including wetland areas. There was still definite signs of vegetation damage (Figures 3, 4 and 5) but in general, the damage appeared less serious than expected with some evidence of vegetation regrowth. Areas of reedbed, manuka and kanuka appeared less brown than in drone footage taken immediately after spraying by the Department of Conservation. Mānuka and kānuka had young leaves at the branchlet tips and rāupo crowns had fresh growth, although this plant does naturally die back over winter.

Dieback was patchy (Figure 6), particularly in the manuka stands at the southern end of the lake. Subcanopy vegetation was less damaged than canopy vegetation.

Plants which had been most burnt by the spray included kukuraho/marsh clubrush (*Bolboschoenus*), swamp millet (*Isachne globosa*), ferns (*Cyathea*, *kiokio*, *wheki*), Mexican devil (exotic), mānuka and kānuka. Less impacted were tussock like sedges including *Carex* and *Cyperus* species, flax, rush like sedges (*Machaerina*) and exotic pampas.

The main difference between the first two 5x5 plots is that there were no visible impacts of foot traffic in or around the non-treatment plot so the vegetation was naturally denser than in the sprayed plot. The marsh fern fronds in the 10x10 treated plot were mostly browned off but some greener fronds were seen.



Figures 3 and 4: Sprayed area of raupō (above) and kukuraho/marsh clubrush (*Bulboschoenus*) (right) on the lake edge near the Lake Tutaki jetty with evidence of green shoots.





Figure 5: Example of vegetation damage in the wetland area adjacent to the southern tip of Lake Tutaki, near plot 3.



Figure 6: Example of the patchy vegetation damage, with browned off and green sections on a mānuka in plot 3.

It is intended to return in around six months to remeasure the plots (around November) once rāupo is greening up for the summer. Non sprayed plots are a non-treatment or control reference and the results from the sprayed plots can be compared to them to see whether sprayed areas have recovered and whether a restoration plan will be needed.

Appendix 1 Photos and map of vegetation plots



Figure 1: Plot 1 at Lake Tutaki jetty showing damaged raupō on the lake edge, partially browned pampas and green *Machaerina juncea* in the sub-canopy.





*Figure 3: Plot 3 showing the patchy nature of the vegetation damage. Some trees look brown, and others are still green.*

*Figure 2: Plot 2 a 5x5 unsprayed control plot on the north-western shore of Lake Tutaki*







Appendix 2 Watercare Cyanobacteria exceedance results Lake Tutaki 7 April 2022

# Watercare

## Laboratory Services

**Watercare Services Limited**  
52 Aintree Ave, Mangere, Auckland, 2022  
PO Box 107028, Auckland, 2150  
T: (09) 539 7600  
clientsupport@water.co.nz  
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### Certificate of Analysis

Laboratory Reference:220408-096

#### Interim Report

Attention:	Lab Certificates	Report Number:	455398-0
Client:	NORTHLAND REGIONAL COUNCIL	Report Issue Date:	08-Apr-2022
Address:	PO Box 9021, WHANGAREI, 148	Received Date:	08-Apr-2022
Client Reference:	FIF Dune Lakes - Cyanobacteria Monitoring	Laboratory Activity Dates:	08-Apr-2022 - 08-Apr-2022
Purchase Order:	2288 - FIF Dune Lake	Quote Reference :	12545

Interim report while cyanotoxins are being tested

#### Sample Details

#### WATERS

Lab Sample ID:	220408-096-1
Client Sample ID:	20222054
Sample Date/Time	07/04/2022 11:00
Description:	Lake Tutaki at Shore

#### Organics

#### Cyanotoxins by Liquid Chromatography-Mass Spectrometry (Trace level)

Anatoxin-a	µg/L	Pending
Cylindrospermopsin	µg/L	Pending
Homo-anatoxin	µg/L	Pending
Microcystin-LR	µg/L	Pending
Microcystin-RR	µg/L	Pending
Microcystin-Total	µg/L	Pending
Microcystin-YR	µg/L	Pending
Nodularin	µg/L	Pending

#### Microbiology Special Report

#### Planktons (Settled) by Microscopy

See detailed report below	Y
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Microbiology - Algae Details						
Phytoplanktons						
			Sample : 220408-096-1 Lake Tutaki at Shore			
			Sample Date : 07/04/2022 11:00			
Genus	Species	Zooplankton	Cells cells/mL	Colonies colonies/mL	Biovolume µm³/mL	Rel. Total Biovolume
<b>Division: Bacillariophyta</b>						
Eunotiales						
Eunotioids						
Eunotia	spp.		22	22	290,000	11
<b>Total: Bacillariophyta</b>			22	22	290,000	11
<b>Division: Chlorophyta</b>						
Chlorellales						
Ankistrodesmus	spp.		170	44	230	0.01
Chlorococcales						
Botryococcus	spp.		110	44	9,200	0.35
Monoraphidium	spp.		44	44	54	
Not assigned						
Actinastrum	spp.		130	22	6,100	0.23
<b>Total: Chlorophyta</b>			450	150	16,000	0.59
<b>Division: Cryptophyta</b>						
Cryptomonadales						
Cryptomonas	spp.		65	65	29,000	1.1
<b>Total: Cryptophyta</b>			65	65	29,000	1.1
<b>Division: Cyanophyta</b>						
Chroococcales						
Microcystis	spp.		31,000	240	1,700,000	64
Refer Legend 1						
Nostocales						
Dolichospermum (nee Anabaena)	spp.		3,000	110	300,000	11
Oscillatoriales						
Geitlerinema	spp.		1,600	44	20,000	0.75
Phormidium	spp.		220	22	18,000	0.68
<b>Total: Cyanophyta</b>			36,000	420	2,000,000	77
<b>Division: Euglenozoa</b>						
Euglenales						
Trachelomonas	spp.		44	44	47,000	1.8
<b>Total: Euglenozoa</b>			44	44	47,000	1.8
<b>Division: Ochrophyta</b>						
Aulacoseirales						
Centrics						
Aulacoseira	spp.		110	44	230,000	8.7
<b>Total: Ochrophyta</b>			110	44	230,000	8.7
Algae & Cyanobacteria biovolume					2700000	
			36000			
Algae & Cyanobacteria cells						
				740		
Cyanobacteria biovolume					2100000	
			36000			
Cyanobacteria cells						
				410		
Cyanobacteria colonies						

Results marked with \* are not accredited to International Accreditation New Zealand. A dash indicates no test performed.

Where samples have been supplied by the client, they are tested as received.

The results of analysis contained in this report relate only to the sample(s) tested. Where sample collection was performed by the laboratory, the results of analysis contained in this report relate only to the sample(s) collected.

#### Reference Methods

The sample(s) referred to in this report were analysed by the following method(s)

Analyte	Method Reference	MDL	Samples	Location
---------	------------------	-----	---------	----------

Organics					
Cyanotoxins by Liquid Chromatography-Mass Spectrometry (Trace level)					
Anatoxin-a	Masahiko Takino and Yutaka Kyono, LC/MS	0.1 µg/L	All	Auckland	
Cylindrospermopsin	Masahiko Takino and Yutaka Kyono, LC/MS	0.02 µg/L	All	Auckland	
Homo-anatoxin	Masahiko Takino and Yutaka Kyono, LC/MS	0.1 µg/L	All	Auckland	
Microcystin-LR	Masahiko Takino and Yutaka Kyono, LC/MS	0.010 µg/L	All	Auckland	
Microcystin-RR	Masahiko Takino and Yutaka Kyono, LC/MS	0.010 µg/L	All	Auckland	
Microcystin-Total	Masahiko Takino and Yutaka Kyono, LC/MS	0.1 µg/L	All	Auckland	
Microcystin-YR	Masahiko Takino and Yutaka Kyono, LC/MS	0.02 µg/L	All	Auckland	
Nodularin	Masahiko Takino and Yutaka Kyono, LC/MS	0.010 µg/L	All	Auckland	
Microbiology Special Report					
Planktons (Settled) by Microscopy					
Algae & Cyanobacteria biovolume	In-house method (MM50)	0.5 µm³/mL	All	Auckland	
Algae & Cyanobacteria cells	In-house method (MM50)	5 cells/mL	All	Auckland	
Algae & Cyanobacteria colonies	In-house method (MM50)	5 colonies/mL	All	Auckland	
Cyanobacteria biovolume	In-house method (MM50)	0.5 µm³/mL	All	Auckland	
Cyanobacteria cells	In-house method (MM50)	5 cells/mL	All	Auckland	
Cyanobacteria colonies	In-house method (MM50)	5 colonies/mL	All	Auckland	
<p><i>The method detection limit (MDL) listed is the limit attainable in a relatively clean matrix. If dilutions are required for analysis the detection limit may be higher.</i></p> <p><i>For more information please contact the Compliance and Projects Manager.</i></p>					


Samples, with suitable preservation and stability of analytes, will be held by the laboratory for a period of two weeks after results have been reported, unless otherwise advised by the submitter.

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Marina Fisher  
KTP Signatory

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	Report Number: 455398-0		Watercare Laboratory Services		Page 3 of 3	

**TITLE:** Update on CoastCare and dune monitoring programmes

**From:** Laura Shaft, CoastCare Coordinator and Lisa Forester, Biodiversity Manager

**Authorised by** Jonathan Gibbard, Pou Tiaki Taiao – Group Manager Environmental  
**Group Manager/s:** Services, on 16 May 2022

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### Whakarāpopototanga / Executive summary

Sand dunes are recognised as a natural defence against coastal hazards and they are a habitat for native species, many of them threatened. Our remaining dunes are very vulnerable to damage from invasive weeds, coastal inundation and human activities such as driving in the dunes.

Since 2005, the Northland CoastCare programme has involved tangata whenua and communities around the region working to protect and restore their dunes to increase their biodiversity and natural hazard protection values. This work involves weed and pest control; planting; management of access over dunes; and education.

Over last winter 12,174 dune plants were put in the ground at 24 sites and work is currently underway preparing for the coming planting season. Over the summer NRC supported a Far North kaitiaki ranger programme aimed at reducing damage by beach users.

It is important to monitor the management actions that are taken. Since 2015 NRC has been part of the Coastal Restoration Trust's nationwide coastal dune monitoring programme. The information gained through monitoring helps to inform dune management and undertaking the monitoring alongside tangata whenua and community groups helps improve awareness and understanding of dune systems.

This summer NRC staff and kaitiaki monitored 12 sites including three new sites and we also undertook a pilot study, in collaboration with Patuharakeke Te Iwi Trust Board and Northtec, to monitor fauna at Bream Bay dune sites. This was aligned with the vegetation monitoring to provide a fuller understanding of dune health and the relationships between flora and fauna in the dunes and will inform advocacy and dune management work in the area.

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### Ngā mahi tūtohutia / Recommended actions

1. That this report, "Update on CoastCare and Dune Monitoring Programmes" by Laura Shaft, CoastCare Co-ordinator, be received.

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### Background/Tuhinga

#### CoastCare update

CoastCare Te Taitokerau supports tangata whenua and community groups to protect and restore their dunes to increase their biodiversity and natural hazard protection values. This work includes weed and pest control, planting, management of access over dunes, education and monitoring. Over the 2021 planting season 12,174 dune plants were put in the ground at 24 sites. This was down from the previous year as the planting season was disrupted by Covid Alert Levels and a number of community/school events could not be held. Preparation is currently underway for the 2022 planting season. Although the winter is busy with planting, throughout the year volunteers and

contractors undertake dune restoration work such as weed control a maintenance of fencing, signage and accessways.



**Figure 1: Poutō School students planting spinifex at Pouto Point where fencing has been put in to control vehicle access through the dune area, allowing the dune to develop and providing a safe area for shorebirds.**



**Figure 2: Poriti School students planting wiwi on QEII covenanted dunes at Pataua North which are home to the threatened plant *Pimelea villosa*. Tahi are working to gradually replace exotic grasses in the dune area with native species to build a healthier and more resilient dune system.**

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### Coastal Buffers project

NRC has been a partner in the Tane's Tree Trust Coastal Buffers programme which has involved back dune planting trials at sites including Hukatere in the Far North, over the last three years. The trials have now been completed and factsheets drafted and distributed to partners for feedback. These provide guidelines for transitioning exotic coastal dune buffers to a buffer of native species, taking into account shoreline changes and climate change effects, and will be available on the Tane's Tree Trust and Coastal Restoration Trust websites.

### Kaitiaki Ranger programmes

One of the ongoing issues for groups working to restore their dunes is damage from vehicles. Trials in the Far North have shown that regular and sustained patrols by kaitiaki rangers are effective at reducing damage. Although central government funding was not available this summer, as in previous years, funding and support from NRC, Far North District Council and the Department of Conservation enabled a smaller programme to go ahead. Three Ngāti Kahu rangers representing Haititaimarangai Marae and Parapara Marae were out and about from Christmas to mid-February, and over the Easter weekend. They covered the Karikari Peninsula and Taipā.

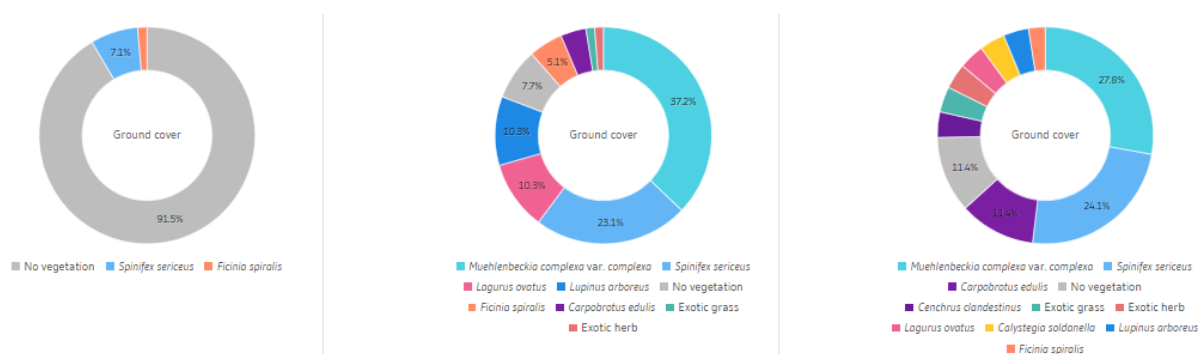
### Dune health assessment monitoring

Dune monitoring provides a record of vegetation cover, native plant abundance and pest plants and this information can be used to inform ongoing dune management. Monitoring also enables tangata whenua, community groups and schools to work alongside Council staff and develop their understanding of their local dune ecosystems. Vegetation transects are measured to obtain a snapshot of dune health which is used alongside drone imagery and profile data to monitor the performance of restoration work such as planting, pest control and weed control.

Since 2015, NRC has been part of the Coastal Restoration Trust's nationwide coastal dune monitoring programme which involves surveying the status of vegetation cover and dune morphology and monitoring the performance of restoration programmes. This began with research and trials into suitable ways to monitor sand dunes, working with community groups and schools. In 2016 and 2017, transects (survey lines) were set up at several Northland sites and workshops were run with community groups and iwi.

This summer, for the second year, the Natural Resources team have assisted with running the dune monitoring site and the transects at 12 sites were measured, including three new sites. Tangata whenua and community groups assisted at some of these sites, but this was limited this year by Covid restrictions.

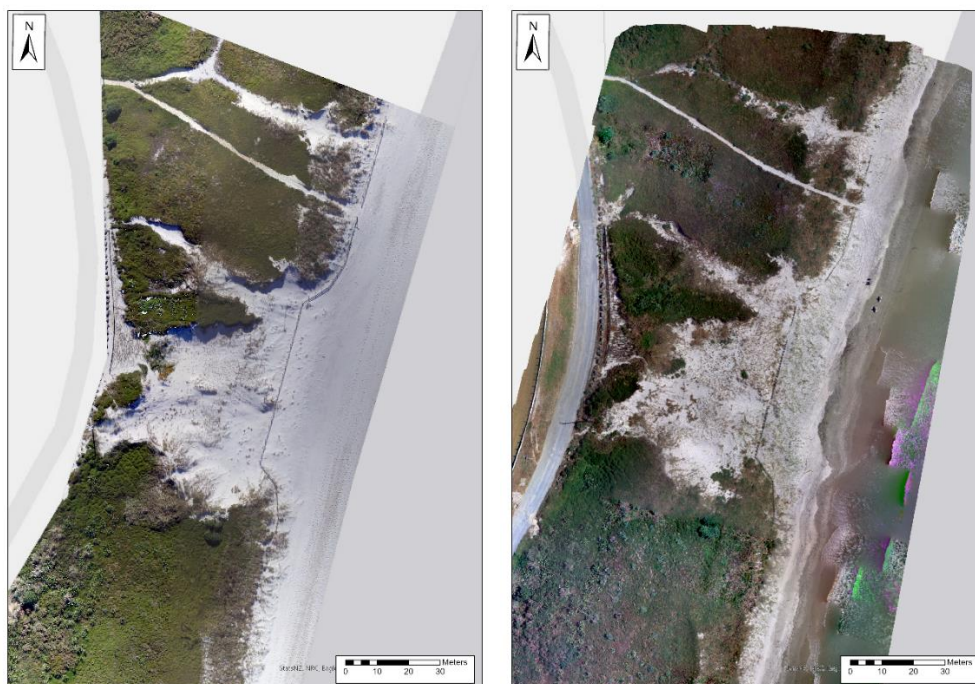
The surveys followed the guidelines developed by the Coastal Restoration Trust. Transects are placed perpendicular to the coast and the vegetation cover is recorded at 1m intervals. Data is uploaded to coastal restoration trust website and can be accessed by volunteers, tangata whenua and the public: <https://monitoring.coastalrestorationtrust.org.nz>.



**Figure 3: Example of data that can be viewed on the coastal monitoring database website. The pie charts show the species found at one of the transects near Ruakākā Racecourse in May 2017, December 2020 and January 2022.**

## Drone images

Drone images were also captured at each monitoring site and these images were processed to create a high-quality contemporary image of the dune systems. This can be useful for assessing vegetation cover and even the presence of pest plants. The images can also be used to create a digital elevation model of the dune, which provides information about the dune's shape and its profile. Regular drone flights will complement the field monitoring and help us to track changes in vegetation cover and dune structure over time.



**Figure 4: Drone images collected at Ruakaka in May 2018 and December 2021**

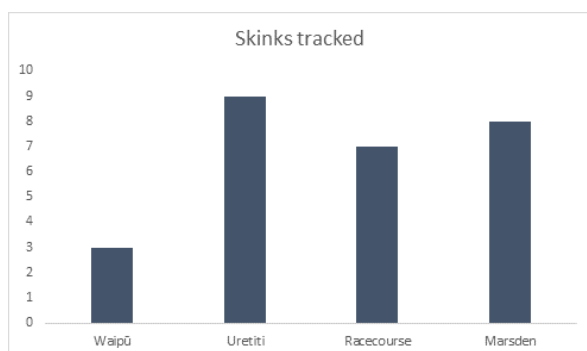


### Fauna monitoring – Bream Bay pilot study

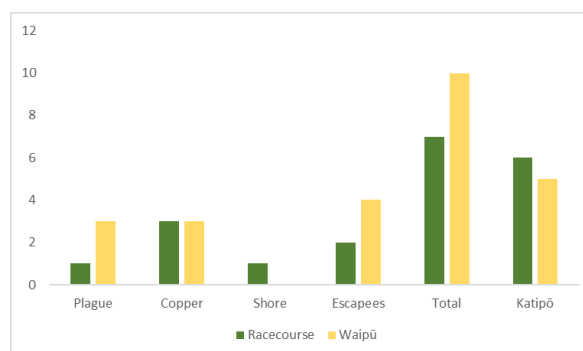
Over this summer staff collaborated with Patuharakeke Te Iwi Trust Board and Northtec on a pilot study in Bream Bay to monitor fauna (animals) in the dunes. Staff did this alongside the vegetation monitoring to get a fuller understanding of dune health, and the relationships between flora and fauna in the dunes.

The study assessed the current state of dunes in places where work (such as pest, weed control, and planting) is being undertaken, versus areas where no work is occurring. It measured the general health of the dune system and the life in it: vegetation, birds, insects, invertebrates, and lizards. A permit was obtained to allow us to catch, handle and release lizards for the purpose of identification.

Various methods for monitoring fauna were incorporated into the study in order to assess which were most successful. 48 artificial shelters, 40 wax tags and 64 tracking tunnels were installed at four study sites. In addition, four bird surveys and manual searches for katipō spiders were undertaken. A full report on this study is being produced by NRC and Patuharakeke.



**Figure 5: Skinks detected on tracking tunnel cards at Bream Bay sites**



**Figure 6: Skinks found in shelters placed in the dunes at Ruakākā and Waipū**



**Figure 7: Katipō spider, with egg sacs, found in a shelter on Ruakākā dunes**



**Figure 8: Shore skink found in shelter in Ruakākā dunes**

Patuharakeke are keen to continue the monitoring and intend to use the information about the dune fauna to support their advocacy work around vehicle use and human behaviour in the precious dune systems. As well as continuing monitoring at Bream Bay we plan to use learnings from this study to incorporate fauna surveys into dune monitoring at other Northland sites to get a fuller understanding of dune health and how restoration work can enhance the ecology of these environments. This can inform dune management and advocacy for better success.

### Ngā tapirihanga / Attachments

Nil



**TITLE: Update on Internal Biodiversity Strategy and Biodiversity Annual Report**

**From:** Lisa Forester, Biodiversity Manager

**Authorised by** Jonathan Gibbard, Pou Tiaki Taiao – Group Manager Environmental  
**Group Manager/s:** Services, on 18 May 2022

---

**Whakarāpopototanga / Executive summary**

The purpose of this report is to:

- Provide an update on the Council internal biodiversity strategy and recommend, to delay the development of this.
- Recommend the production of a Council Biodiversity Department Annual Report for 2021-2022.

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**Ngā mahi tūtohutia / Recommended actions**

1. Seek endorsement from the Biosecurity and Biodiversity Working Party to delay work on the Internal Council Biodiversity Strategy until March 2023 due to current workload commitments.
2. Seek endorsement from the Biosecurity and Biodiversity Working Party to prepare Councils first Biodiversity Annual Report, highlighting council biodiversity activities and achievements for 2021-2022 financial year.

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**Background/Tuhinga**

A discussion was held with the Biosecurity and Biodiversity Working Party (B&BWP), around the development of a Taitokerau Biodiversity Strategy. Given the delay in releasing the National Policy Statement for Indigenous Biodiversity, and the uncertainty associated with some of its content, it was agreed that progressing a Regional Biodiversity Strategy should be put on hold pending the release of the NPS.

Rather than ceasing all biodiversity planning, it was agreed that it would be beneficial, although not legislatively required, to prepare an internal council biodiversity strategy which would clearly articulate councils' strategic direction for our biodiversity work programme, including visions, goals, priorities, actions, and necessary resourcing to deliver on our legislative role and functions. This approach would enable council to review its current approach and programme, allow time for the NPS-IB to be finalised, and set council up for the next LTP process. Council currently has the [Northland Biodiversity Ambitions and Actions Plan 2018-2028 draft](#), as a useful start point for the review and development of a Council Biodiversity Strategy.

The Biodiversity Department has a full programme of work to deliver over the next 12 months including additional work producing a State of the Environment (SOE) Report, which is a legislative requirement. The department is also in its final year of delivering the Freshwater Improvement Fund co-funded Dune Lakes Programme which is a major part of our work programmes. Current high workloads have been compounded by Covid delays and staff are currently at full capacity delivering these work programmes. It is therefore suggested that the internal Biodiversity Strategy, which is desirable but not essential, is also put on hold until March 2023. Commencing the strategy in March 2023 will enable current workload pressure to ease, provide capacity for the team to complete the biodiversity SOE report and still provide sufficient time to develop the strategy to inform the next



LTP. In the meantime, the Northland Biodiversity Ambitions and Actions Plan is still relevant to help guide work programmes.

Given the Biodiversity team will be preparing a State of the Environment Report on biodiversity, it is proposed that we aim to also deliver the first Biodiversity Annual Report for the 2021/22 financial year. The timing and style would be aligned to the Biosecurity Operational Report. Much of the information required to produce the Biodiversity Annual Report will also be needed to inform the SOE Report, hence we think we have capacity to deliver both.

Staff seek the B&BWP endorsement of this proposal and will be available to answer further questions.

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### **Ngā tapirihanga / Attachments**

Nil