Hikaroroa / Mt. Watkin Conservation Project

2026 - Community Update

Trapping and Monitoring results 2021-2026

HIKAROROA MT WATKIN CONSERVATION GROUP



The power of collaboration

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MAMMALIAN CORRECTIONS UNIT MCU

Funders and Partners

Department of Conservation *Te Papa Atawhai*

Kāti Huirapa Rūnaka ki Puketeraki

RISING CLOUD CONSERVATION

PREDATOR FREE NZ

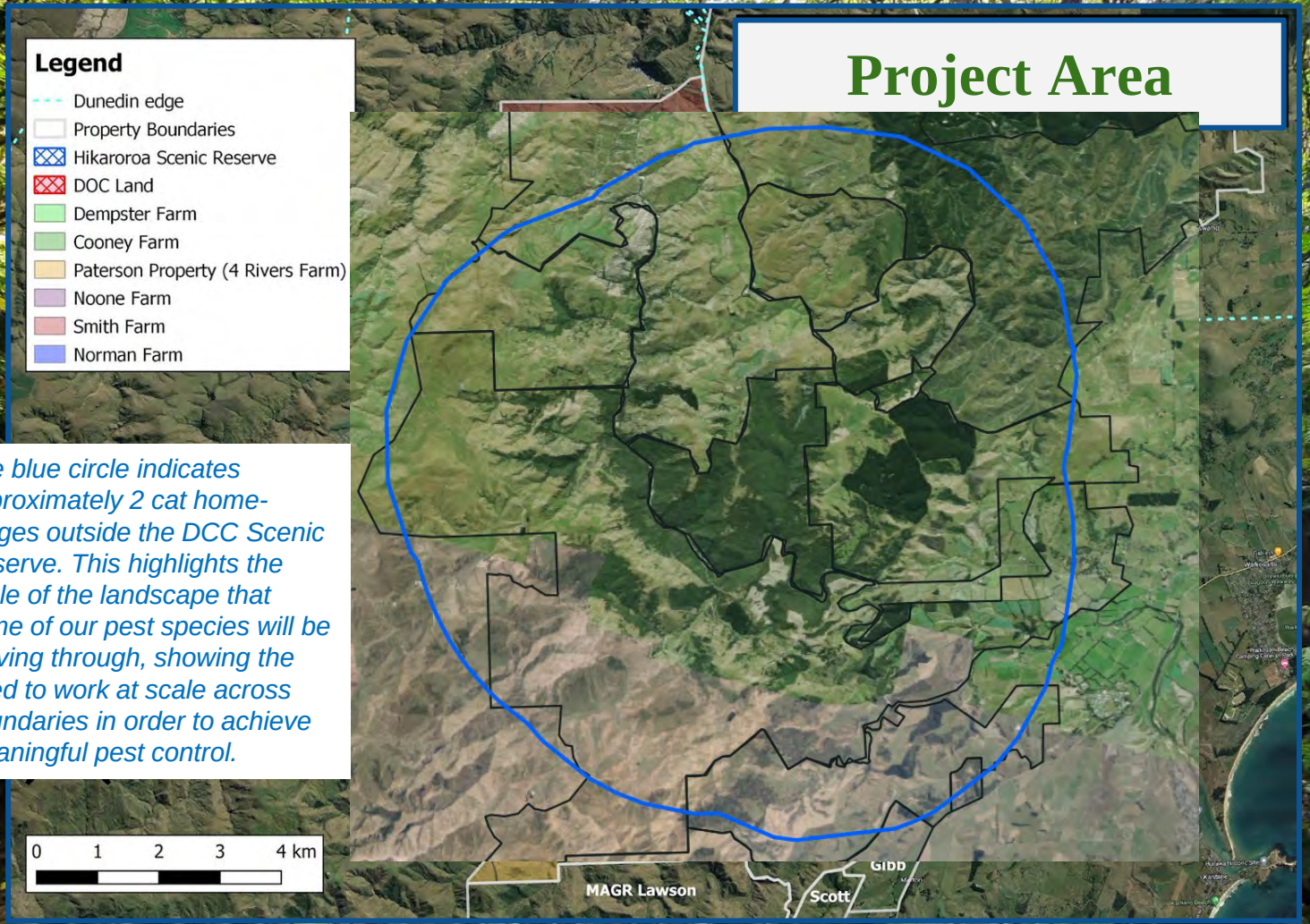
Otago Regional Council

Predator Free Dunedin

Waitaki DISTRICT COUNCIL *TE KAUNIHERA Ā ROHE O WAITAKI*

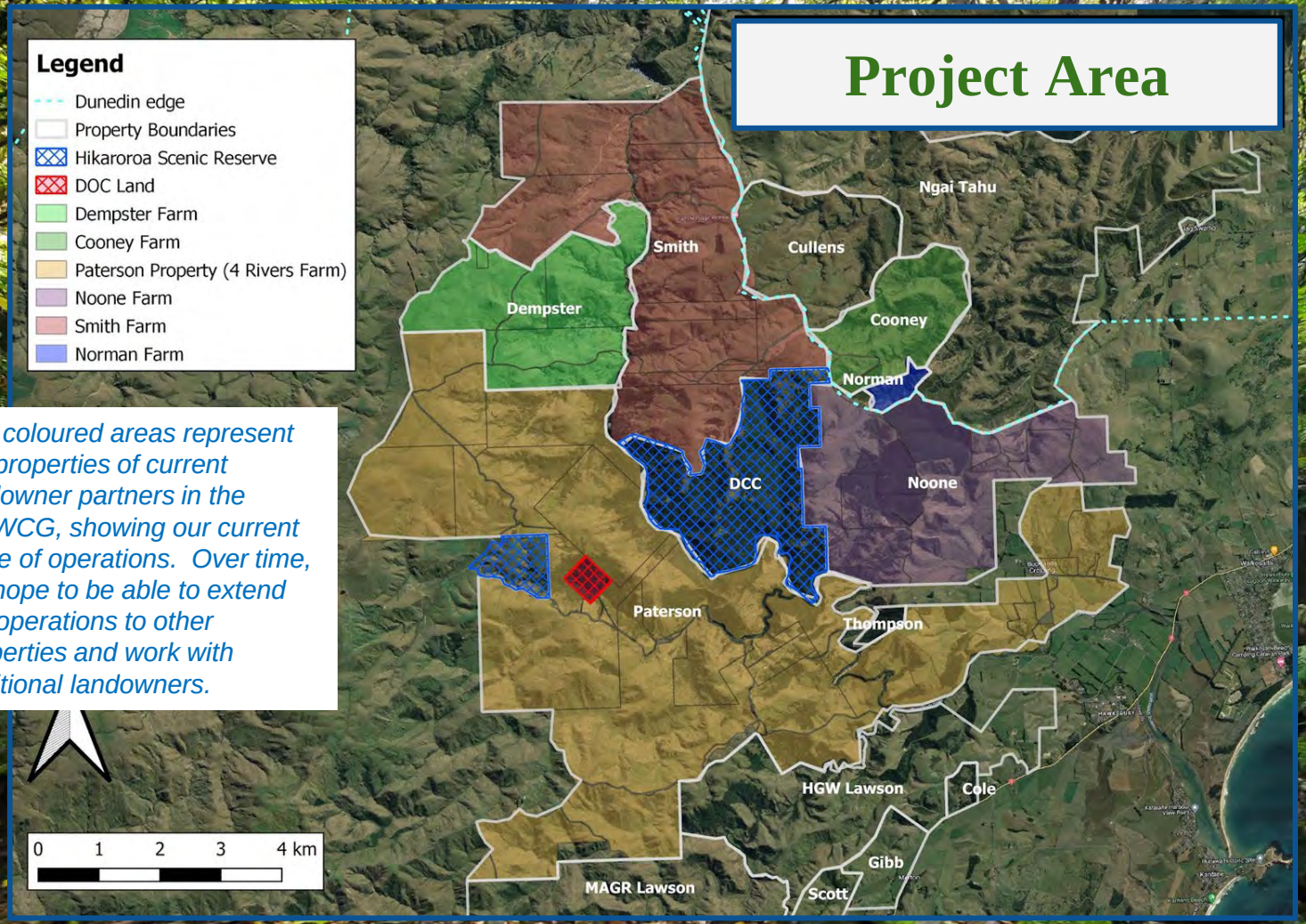


Project Area

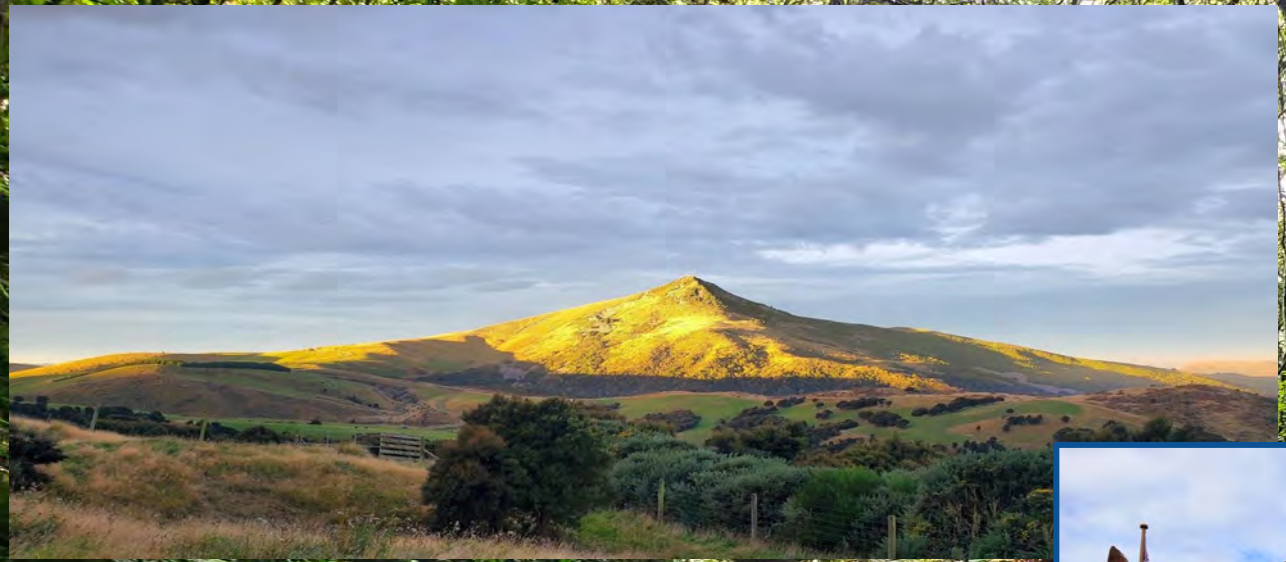


The blue circle indicates approximately 2 cat home-ranges outside the DCC Scenic Reserve. This highlights the scale of the landscape that some of our pest species will be moving through, showing the need to work at scale across boundaries in order to achieve meaningful pest control.

Project Area



The coloured areas represent the properties of current landowner partners in the HMWCG, showing our current scale of operations. Over time, we hope to be able to extend our operations to other properties and work with additional landowners.





View of Hikaroroa / Mt. Watkin from the Puketeraki marae in Karitane. Hikaroroa / Mt. Watkin is the mauka tipuna for Kāti Huirapa ki Puketeraki.









The many landscapes of our project area. Notice how challenging the landscape is!



Some of our old-growth forest

Threatened Species List

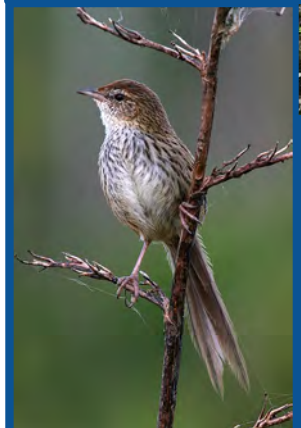
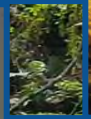
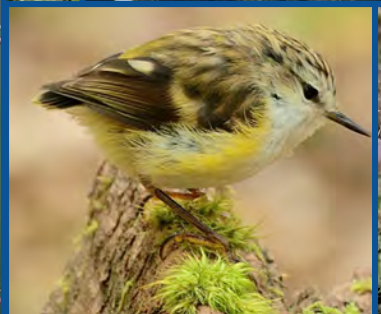
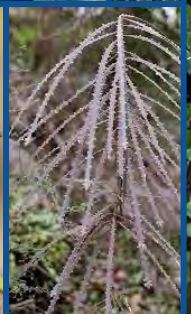
	Species	Taxa	Common Name	2024 Status
1	*Gingidiobora* 'Eastern Otago'	Lepidoptera	Looper Moth	Threatened – Nationally Critical
2	*Cephalissa siria*	Lepidoptera	Orange Triangle Moth	Threatened – Nationally Vulnerable
3	*Falco novaeseelandiae 'eastern'*	AviFauna	Eastern Falcon	Threatened – Nationally Vulnerable
4	*Galaxias depressiceps*	Freshwater Fish	Taieri Flathead Galaxias	Threatened – Nationally Vulnerable
6	*Geotria australis*	Freshwater Fish	Lamprey	Threatened – Nationally Vulnerable
7	*Aciphylla subflabellata*	Vascular Plant	SpearGrass, Grassland Habitat	At Risk - Declining
8	*Brachyglottis sciadophila*	Vascular Plant	Climbing Groundsel, Forest Habitat	At Risk - Declining
9	*Korthalsella salicornioides*	Vascular Plant	Dwarf Mistletoe, Kanuka Forest Habitat	At Risk - Declining
10	*Tupeia antarctica*	Vascular Plant	White Mistletoe, Forest Habitat	At Risk – Declining
11	*Coprosma virescens*	Vascular Plant	Coprosma, Dry Forest and Scrub Habitats	At Risk – Declining
12	*Lophomyrtus obcordata*	Vascular Plant	Rohutu, Dry Forest Habitat	At Risk – Declining
13	*Scandia geniculata*	Vascular Plant	No common name reported, Forest Edge Habitat	At Risk – Declining
14	*Galaxias maculatus*	Freshwater Fish	Inanga	At Risk – Declining
15	*Hoplodactylus aff. maculatus*	Reptiles	Korero-Otago Large Gecko	At Risk - Declining
16	*Gingidia grisea* (*Gingidia aff. montana* (b) CHR 103349; North Otago)	Vascular Plant	No common name reported, Rocky Outcrop Habitat	At Risk – Naturally Uncommon
17	*Pseudopanax ferox*	Vascular Plant	Fierce Lancewood, Forest and Rocky Outcrop Habitats	At Risk – Naturally Uncommon
	Gobiomorphus gobioides	Freshwater Fish	Giant Bully	At Risk – Naturally Uncommon



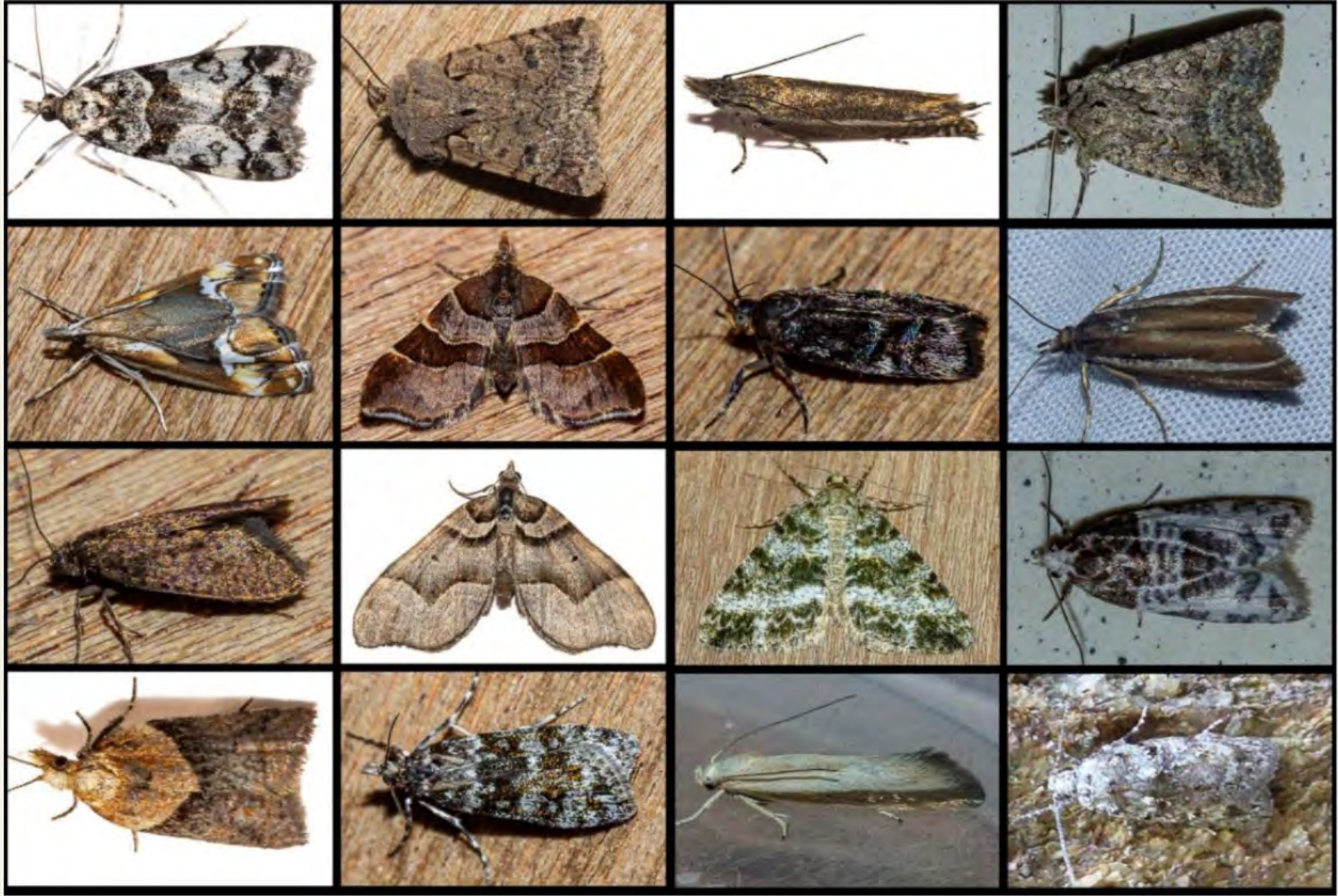







Hikaroroa has very high invertebrate biodiversity, and is home to over 100 moth species, including several rare species that are regionally significant. The looper moth is classified as 'threatened-nationally critical,' and the orange triangle moth is classified as 'threatened-nationally vulnerable.'





Hikaroroa is home to many lizards as well! All species shown here would have historically been present in the project area. Only the labelled lizards are currently known to be in the area.

A necropsy of a feral cat with 14 skinks in its stomach shows what predators they can be.















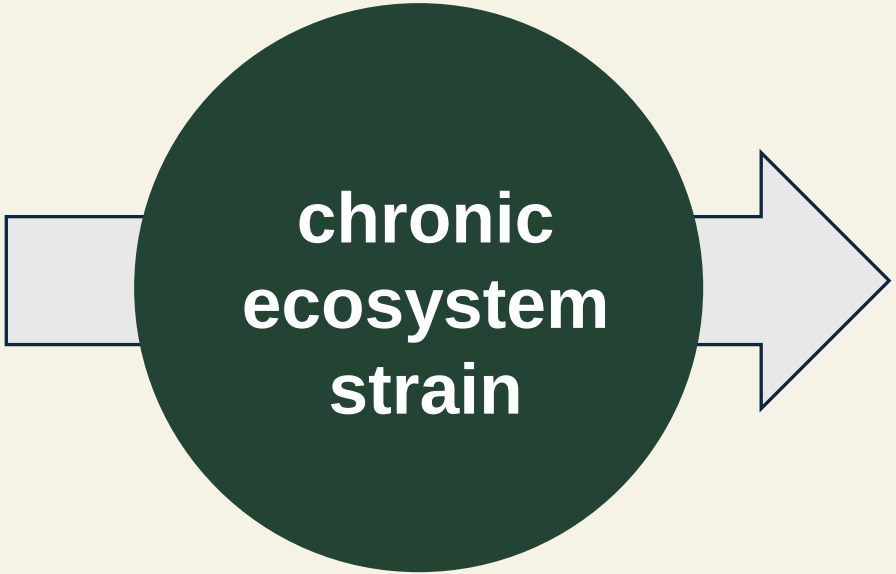
Our biggest threat is a lack of active management…

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Browsers
possums, pigs, goats, deer

Predators
rats, mustelids, feral cats

Fragmentation
isolated remnants, edge effects, weeds



Regeneration Failure

Composition Change

Wildlife suppression

Pressure accumulates until the system cannot replace itself, or is permanently altered.



Significant ecological pests at Hikaroroa, such as those pictured here, are causing chronic ecosystem strain.

Strategic Principles

Density–impact functions & Ecological Indicators

SITE SPECIFIC UNDERSTANDING AND OPERATIONS BASED ON VALUES

USE ECOLOGICAL INDICATORS UNDERSTAND ECOLOGICAL HEALTH

Finding a model that others in our area can learn from

Monitoring & Data Informed Decision Making

MEASURE PEST SUPPRESSION + BIODIVERSITY OUTCOMES

EVIDENCE GUIDES ACTION

Repeat measures reveal trends, reinvasion and response

Importance of multi-method approaches

LAYER METHODS · ADAPT OFTEN

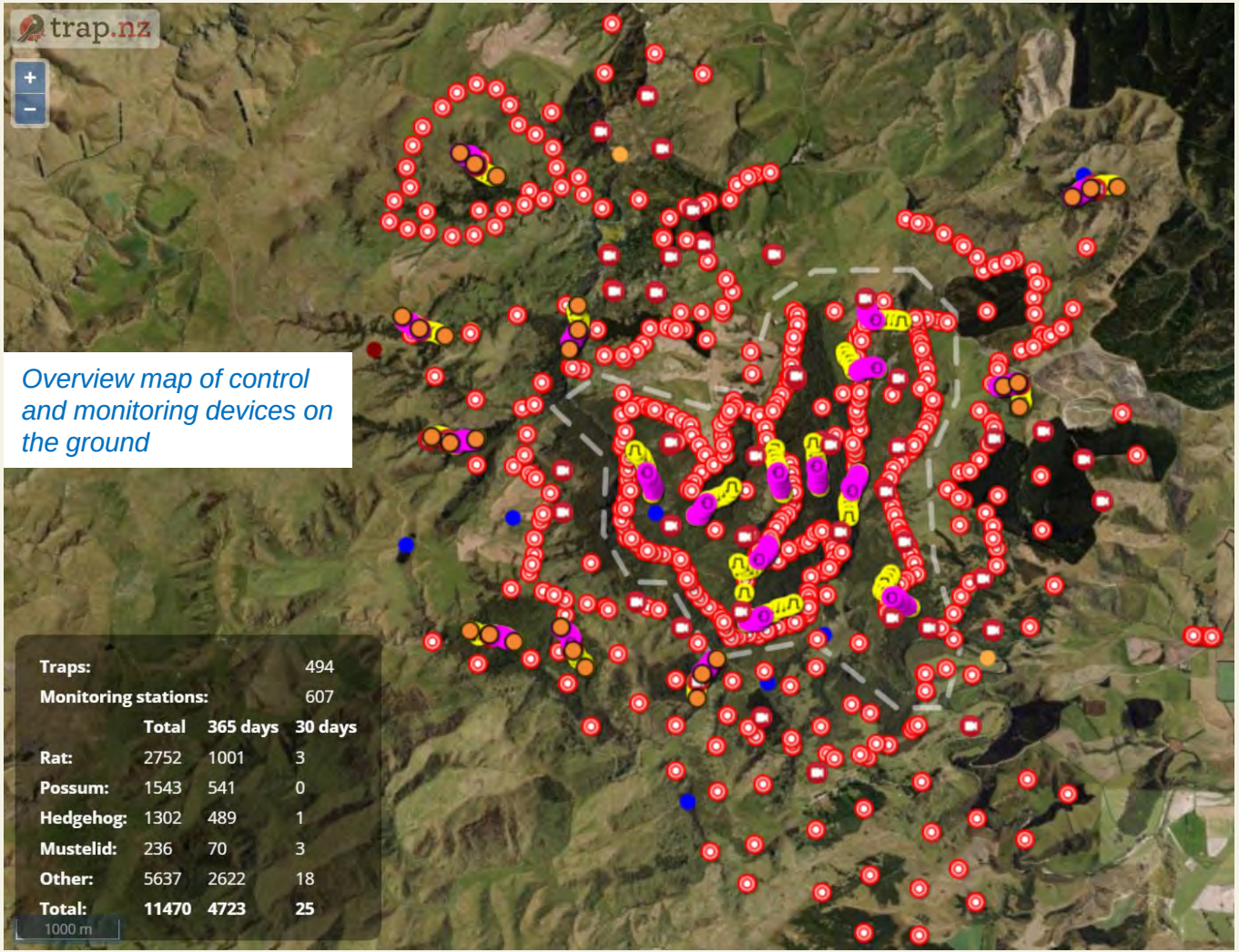
NO SINGLE TOOL IS ENOUGH

Background control + targeted response + learning

What's actually happening?

- Possum control
- Mustelid control
- Feral cat control
- Ungulate control
- Pest Monitoring
- Biodiversity monitoring
- Forest regeneration monitoring
- Research
- Community Education
- Internships and workforce development
- Mana whenua engagement
- Trialing landscape scale adaptive management





Overview map of control and monitoring devices on the ground

MUSTELID CONTROL 2026 UPDATE



A growing best practice network and a gateway into conservation volunteering

Powered by monthly community workshops and trapping hikoi



Volunteers from the University of Otago Wildlife Management course (left), interns such as Hari (above), and the university Tramping Club (next slide) contribute to the volunteer workforce, while gaining valuable conservation skills



POSSUM CONTROL 2026 UPDATE

Three years of continuous landscape-scale control

A permanent AT220 network, powered by six-monthly community field trips

Results, emerging risks and the BSI research collaboration

The project has built off the gains of Osprey's former periodic knockdowns, to establishing a permanent, community-supported suppression network in our efforts to keep possum densities low for the long term.



Three years of control has delivered meaningful suppression

1,549

possums removed since the network began in 2023

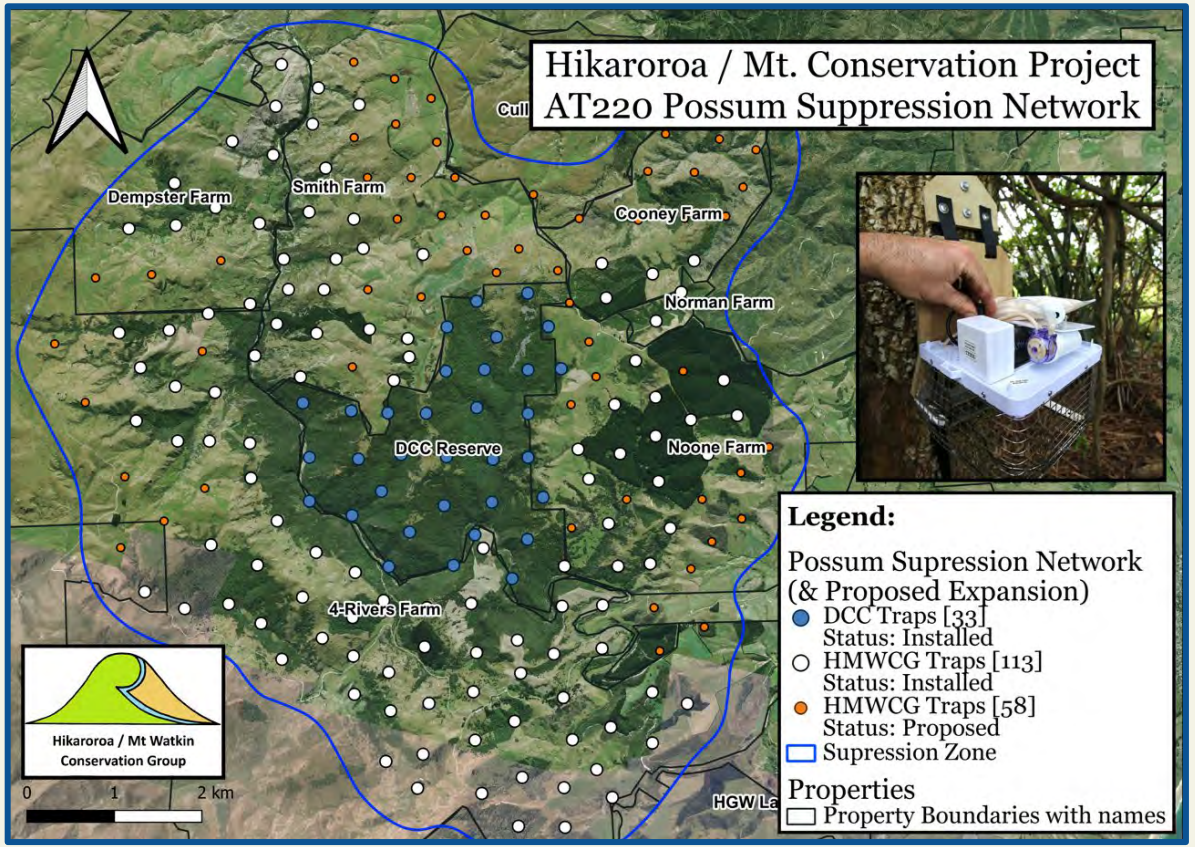
547

removed during the 2025-26 operational year

~50%

lower WaxTag detectability than baseline

The map demonstrates that suppression is landscape-wide rather than confined to the reserve boundary.



The private-land halo intercepts pressure around the reserve



Catch per trap

4.2
HMWCG private land

2.25
DCC reserve

The wider network removes possums before they reach the reserve's most fragile forest.

May 2026 round: 271 removals on HMWCG land + 37 in the reserve

The higher private-land catch reflects both wider coverage and the role of the private land buffer network in intercepting animals as they move into the project area, thus keeping the Reserve at the core better protected.







Trapping stations often involve cameras to capture the activity (above), especially when research trials with special lures are being trialled (right). Note in the top right photo that the AT220 possum traps also catch cats.

BSI cameras confirm the network is still catching possums



30

AT220 sites monitored for about three months

209,071

camera images reviewed

373

independent possum encounters

29

captures recorded or inferred

About one-third of sites recorded zero or one encounter

Preliminary finding: trap avoidance is present, but does not yet appear to be the main limit on performance.

Ecologists from the Bioeconomy Science Institute (BSI, formerly Manaaki Whenua Landcare Research) have been conducting research on possum behaviour in our project area. The cameras add behavioural evidence to the catch and WaxTag results: possums still encounter and enter traps, and activity is sparse across many monitored sites.

FERAL CAT CONTROL 2026 UPDATE

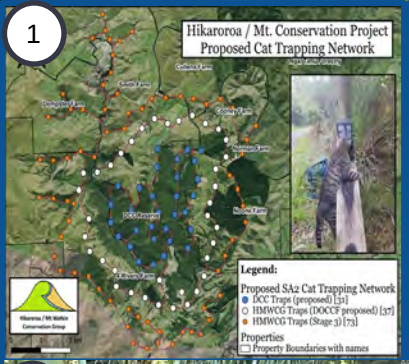
Kill trap network installation completed

AT220 Trials, cage trapping knockdowns, drones, thermal optics

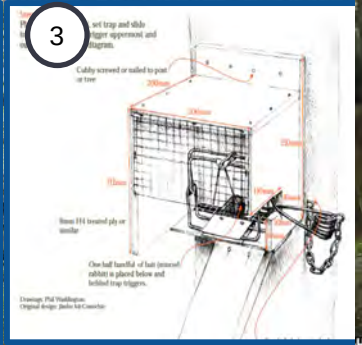
Stomach contents research



A cat control network is the latest to be added to our portfolio of pest control efforts. Now fully operational in 2026.

























The cat network can be seen in photo1. A variety of trap designs have been tested (photos 1-8). While the open box design was effective, early tests showed too much interest from non-target species (none were harmed, the traps weren't set yet!), so eventually we landed on the closed box trap (photo 9), and have been installing them across the network (photo 10). Photos 11 & 12 show other options for knockdown efforts (live trapping and night time thermal scopes).

Predator Control Framework, Progress, and Targets

Permanent networks provide background suppression; targeted responses address residual and trap-shy animals

Pest group	50–60% Annual Cull Estimate	Actual removal from last 12 months	Monitoring Target	Most recent monitor	Primary Control	Recommended Secondary Control
Possums	225–540	547	<40-50% HMWCG WTI <25% DCC WTI	HMWCG 33.3% DCC 9%	~500m AT220 network 6-month service	Feratox Knockdowns (monitoring triggered)
Mustelids	23–81	72	<5 CH1000	HMWCG 3.9 DCC 1.3	DOC200/250 network 30-40 day service	Papp (EPA?)
Feral cats	83–102	44	<5 CH1000	HMWCG 4.1 DCC 1.3	SX220 + motolure network 30-40 day service	Smart Cage Trapping (annual)



FOREST REGENERATION AND UNGULATE IMPACTS

What three years of monitoring tell us about forest recovery at Hikaroroa / Mt. Watkin

Monitoring results 2023-2026

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Across the landscape we see signs of ongoing damage, a preponderance of regenerating kanuka forest with limited understory. However, there are encouraging areas of regeneration such as the lancewood grove and broadleaf sprouting in the rocky outcrops.

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Preferred native plants are still struggling

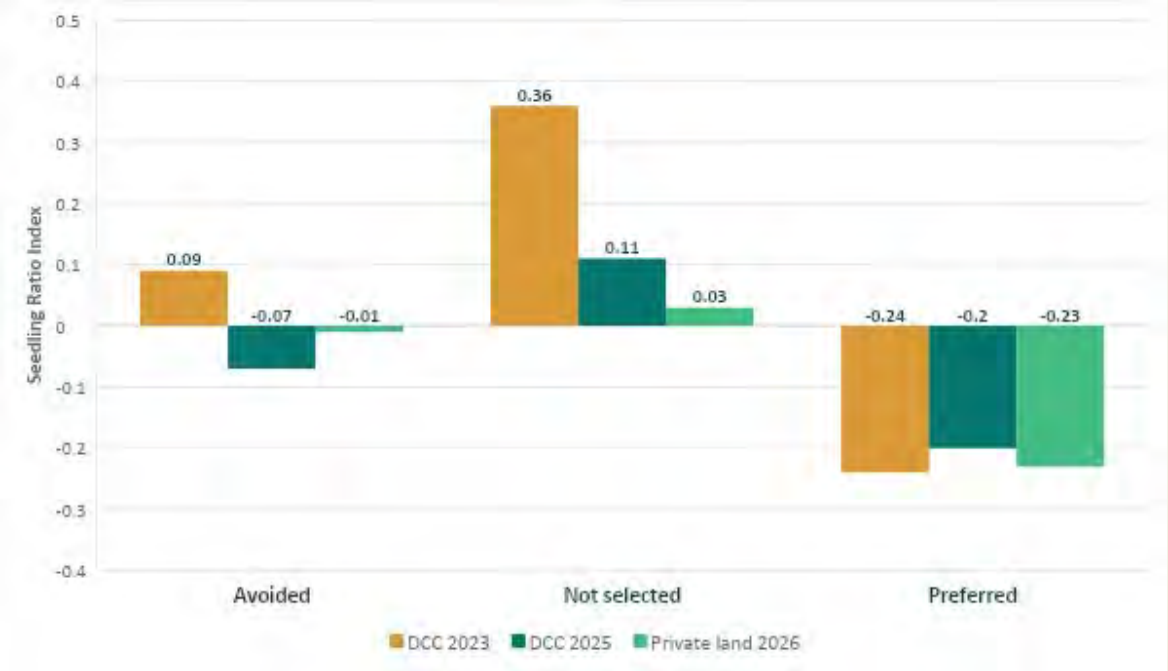
-0.22

Average SRI for preferred species across the wider monitoring programme

Below zero means too few seedlings are reaching taller size classes.

The pattern persists

Preferred species stayed negative in the reserve (2023 and 2025) and on private land (2026).



Focus on the preferred-species bars at the far right of the graph. The avoided and not-selected groups provide context, but the management concern is that preferred species remain consistently below zero.

Palatable taxa that help form today's canopy

Kāpuka / broadleaf and Kōwhai show the clearest canopy-replacement warning



Makomako / wineberry

Aristotelia serrata

CANOPY / DOMINANT · WINEBERRY–KŌHŪHŪ

SRI +0.43

2 short-tier · 5 tall-tier occurrences



Kāpuka / broadleaf

Griselinia littoralis

CANOPY / CO-DOMINANT · BROADLEAF FOREST TYPES

SRI −1.00

22 short-tier · 0 tall-tier occurrences



Māhoe / whitey wood

Melicytus ramiflorus subsp. ramiflorus

CANOPY / CO-DOMINANT · MĀHOE–BROADLEAF

SRI 0.00

61 short-tier · 61 tall-tier occurrences

NZPCN names and photographs

Canopy replacement is uneven across key species

Kōwhai is strongly weighted toward short seedlings; kōhūhū and māpou sit close to balance



Māpou / red matipo

Myrsine australis

SUBCANOPY ASSOCIATE · PREFERRED (P)

SRI +0.02

29 short-tier · 30 tall-tier occurrences



Kōwhai

Sophora microphylla

CANOPY / CO-DOMINANT · NOT SELECTED (NS)

SRI −0.48

34 short-tier · 12 tall-tier occurrences



Kōhūhū / black matipo

Pittosporum tenuifolium

CANOPY / CO-DOMINANT · AVOIDED (A)

SRI −0.05

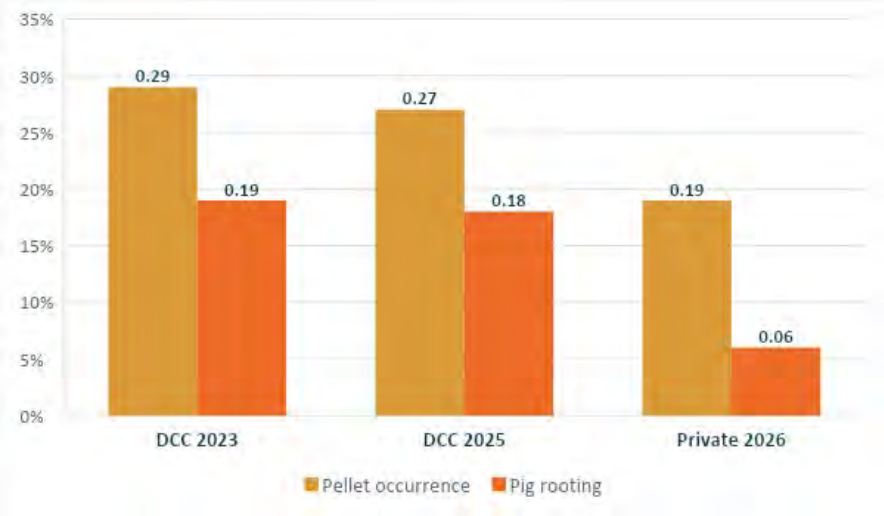
10 short-tier · 9 tall-tier occurrences

Lower browse has not yet lifted recruitment

Browse pressure on preferred species



Animal signs across monitoring plots

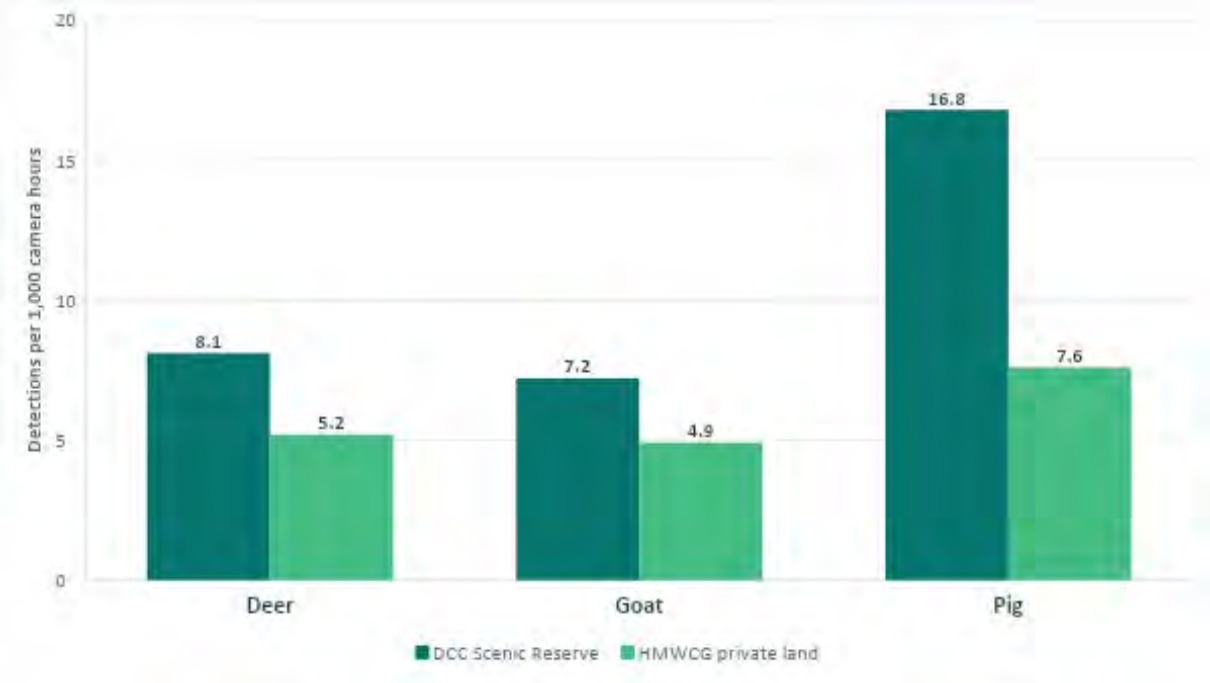


What this means

Private-land browse and animal signs were lower, but preferred-species SRI was not better. Recovery may lag behind control, or current densities may still be above the ecological threshold.

Note that private land conditions are not directly comparable in every respect. The surveys occurred in different years and habitats. The important point is that lower browse and animal signs had not yet produced stronger preferred-species recruitment.

Ungulate activity is higher inside the reserve



Camera monitoring provides a relative abundance index, not an estimate of absolute animal density. Focus on the consistent pattern across species, and particularly the large difference in pig abundance across the two locations.

Reserve difference

DEER

~60% higher

GOATS

~40% higher

PIGS

>2x higher

Pigs were the most detectable ungulate in both monitoring areas.

Biodiversity Monitoring Update 2026

forest birds, invertebrates & biodiversity observations

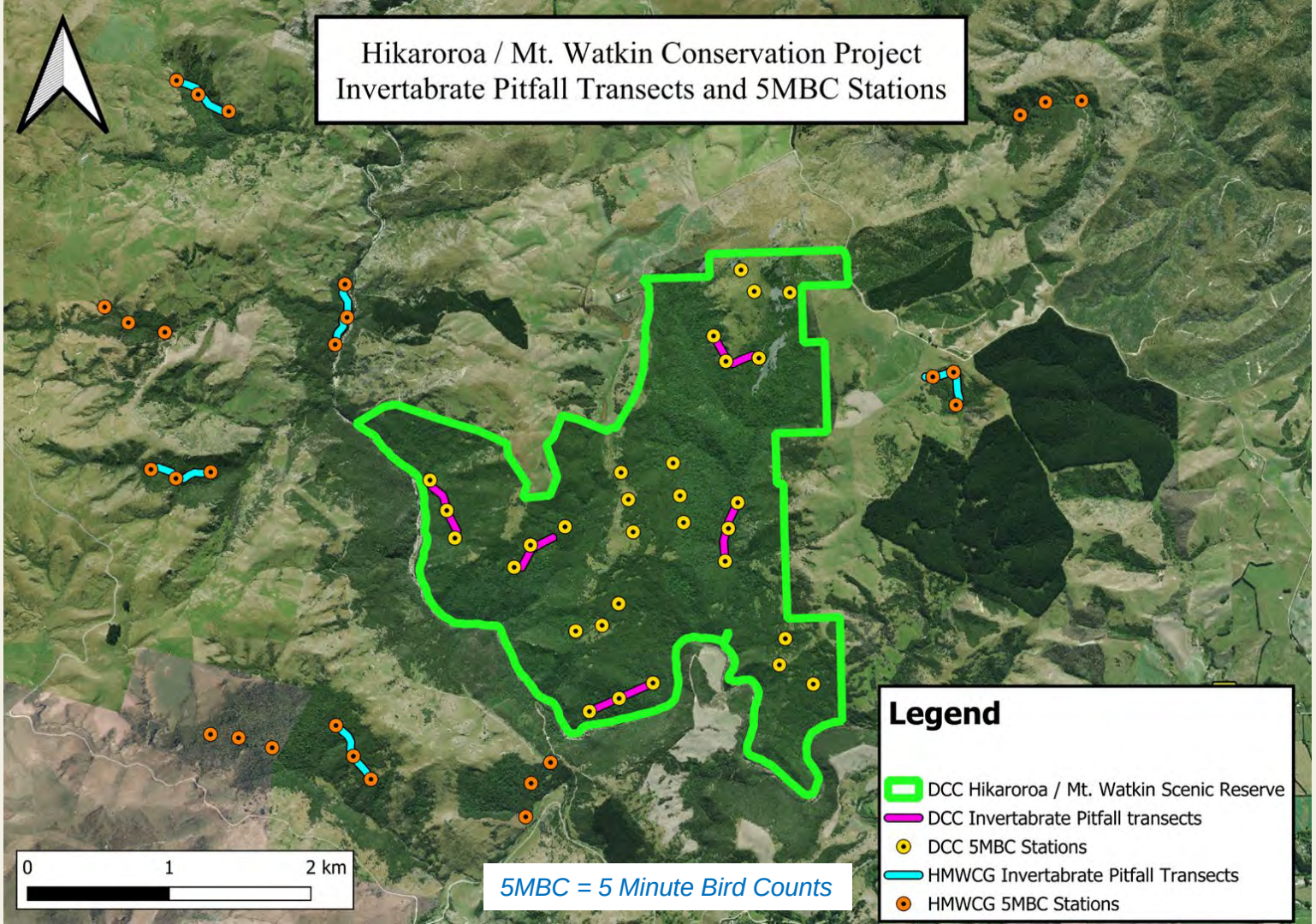
Monitoring results 2022-2026

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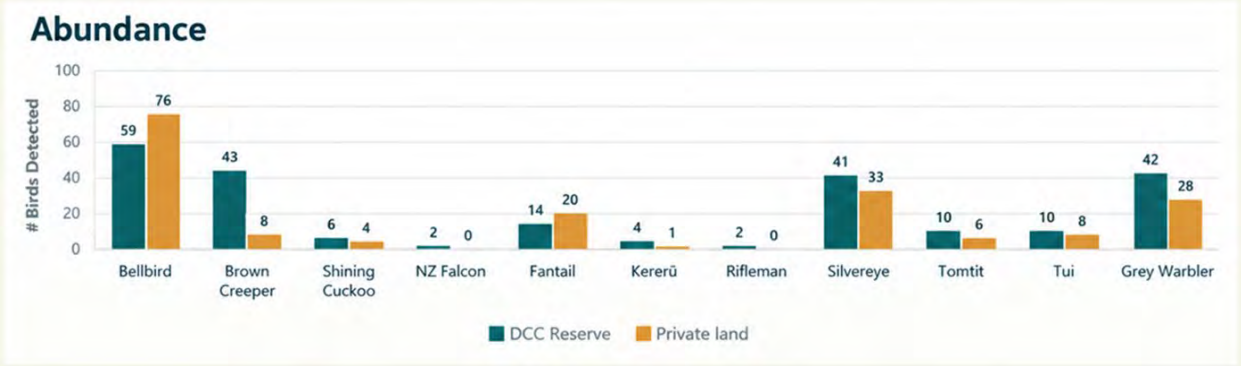
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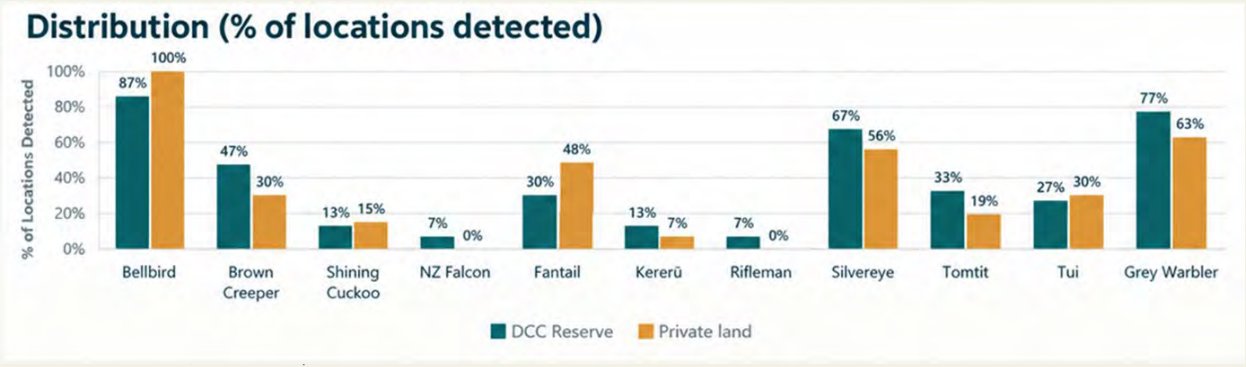
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Hikaroroa / Mt. Watkin Conservation Project
Invertabrate Pitfall Transects and 5MBC Stations
0
1
2 km
5MBC = 5 Minute Bird Counts
Legend
DCC Hikaroroa / Mt. Watkin Scenic Reserve
DCC Invertabrate Pitfall transects
DCC 5MBC Stations
HMWCG Invertabrate Pitfall Transects
HMWCG 5MBC Stations

2025 Forest Bird Monitoring: Project Area Results





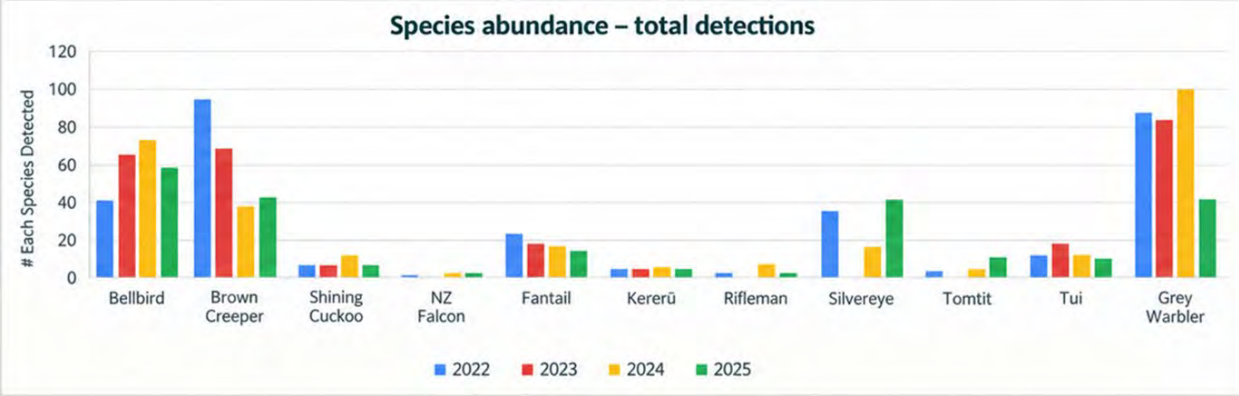
Key takeaways

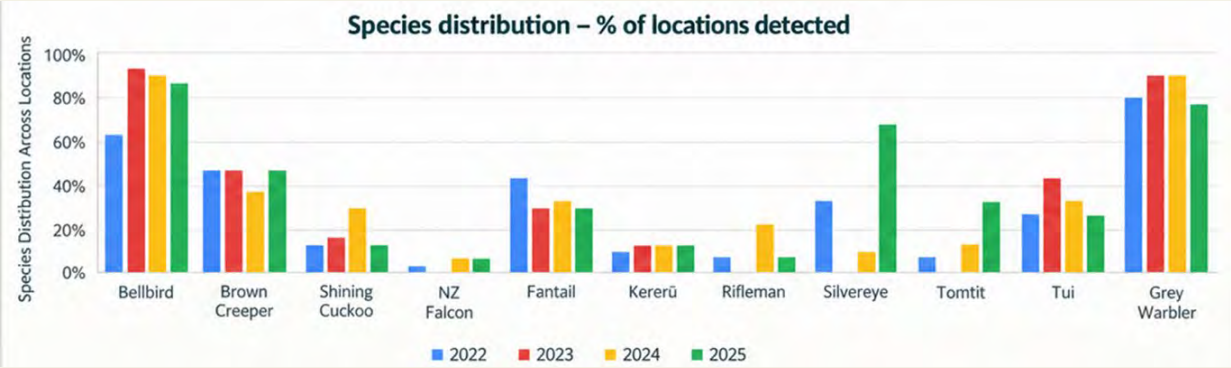
1. Bellbird and grey warbler were widespread across both areas.
2. Brown creeper was much more common in the reserve.
3. Most native species were detected in both reserve and private land habitats.

Four Years of 5MBC Monitoring in the DCC Reserve

Key takeaways

- No strong positive or negative trends are yet evident.
- Forest bird responses often require 5–10 years of monitoring.
- Possible declines in grey warbler, fantail and brown creeper should be interpreted cautiously at this stage.



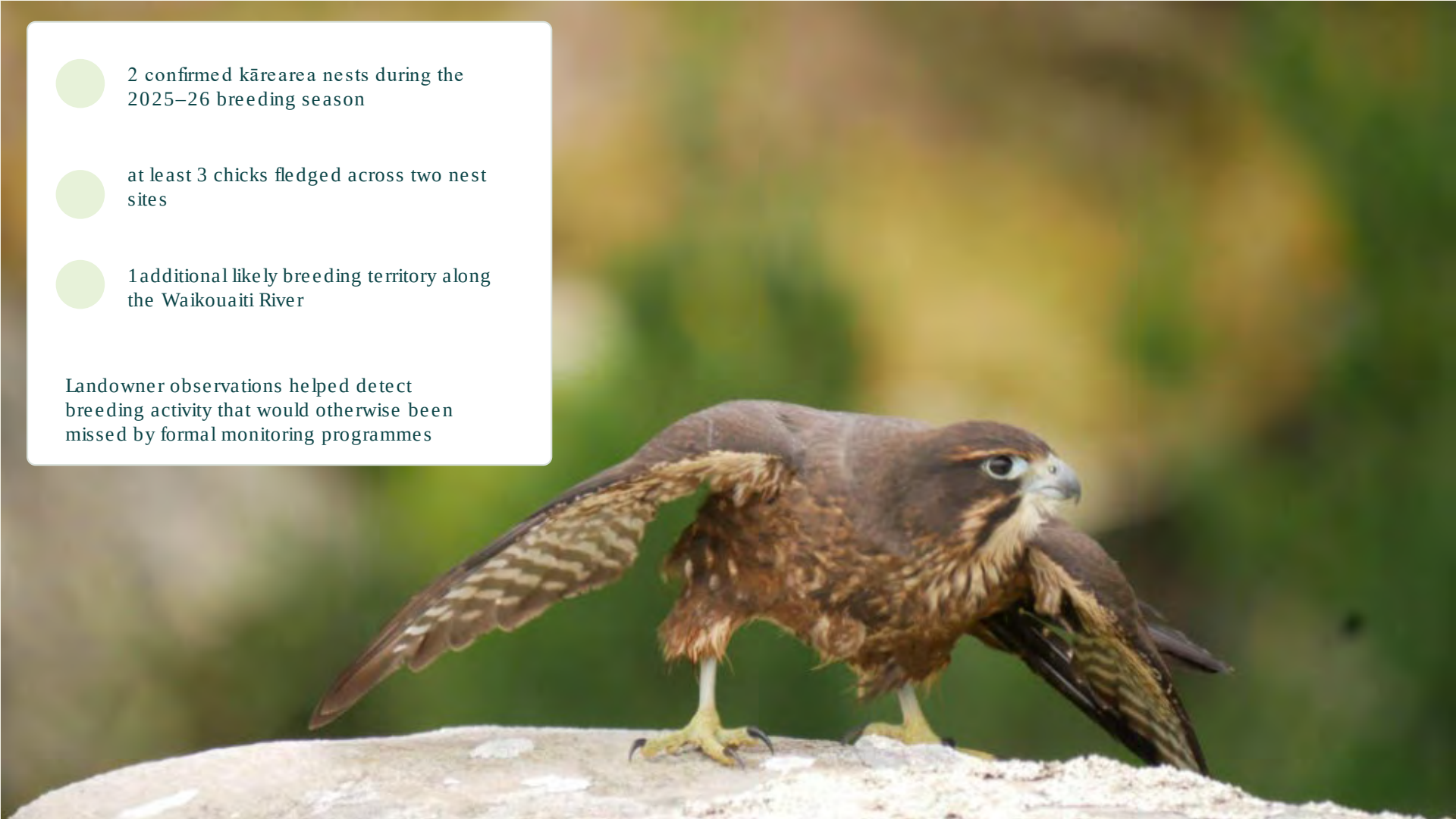


5MBC Monitoring began on private land in 2025, so only DCC results are presented here for 4 years of monitoring.

Table 2. 2023 Pitfall Summary at DCC Scenic Reserve

This table presents our first snapshot view of the invertebrates found in the project area. The 2023 data provide a baseline assessment, demonstrating substantial diversity within the reserve and surrounding monitoring areas. The wide range of taxonomic groups identified indicates a structurally complex forest-floor community with representation across multiple trophic levels. Subsequent monitoring efforts will be used to analyse changes over time as part of our adaptive management approach.

Taxonomic group	Representative taxa (examples)	Count
Crustacea	Amphipoda (amphipods)	421
Coleoptera	Rove beetles (Staphylinidae, small)	500
Diptera	Flies (adults and larvae)	406
Arachnida	Spiders, harvestmen, pseudoscorpions	338
Lepidoptera	Moths and larvae	111
Hymenoptera	Ants, wasps, other	104
Myriapoda	Millipedes, centipedes	57
Orthoptera	Wētā, crickets	22
Others	Snails, slugs, worms, etc.	570
Total		**2,531**



- 2 confirmed kārearea nests during the 2025–26 breeding season
- at least 3 chicks fledged across two nest sites
- 1 additional likely breeding territory along the Waikouaiti River

Landowner observations helped detect breeding activity that would otherwise been missed by formal monitoring programmes

Herpetofauna Findings



The lizard above is a juvenile kōrero gecko found on a schist outcrop in the project area.

Tussock skinks were found in the cat's stomach. These skinks had not been previously found during lizard searches in the area.



- Two additional native lizard species detected: tussock skink and kōrero gecko.
- Both species are classified as At Risk – Declining.
- Around 10 kōrero geckos identified on two schist outcrops.

These are one of the most important biodiversity discoveries we've made within the project area.

Photos: Jamie Hickling

Outdoor Education, Internships, Workshops, & Education Initiatives

Building community capacity is critical to long term management











Primary students from the Waikouaiti School spent two days at Hikaroroa, gaining an appreciation for the environmental value of the area.

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Training workshops involve classroom learning, on-site practical learning, and learning to record and analyse data from the field.



Hikaroroa / Mt Watkin

Internship Programme

Conservation, community & hands-on field experience in East Otago, Aotearoa New Zealand



Kitchen to Conservation

Kia ora, Hola, Que pasa?

I'm Camilo, Colombian-born, raised in Tāmaki Makaurau. After spending 6 years in Ōtepoti kitchens and construction sites and ready for a change, I was excited to accept Jamie's offer to intern with HMWCG. My internship was an incredible opportunity to step in to the conservation world, learning so many new skills in field work and the back country.

I'm most glad to be able to name more native species confidently, beyond the general sense of confidence and capacity that I have been supported to grow over the past months.

I'm grateful to have a deeper understanding of conservation in Aotearoa and look forward to my future involvement.



Camilo is one of 3 interns so far this year. Each intern brings a unique set of skills to contribute to the project, while gaining conservation knowledge and experience from their work with us, to take forward into their next ventures in life.

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Behind the Scenes

HIKAROROA MT WATKIN CONSERVATION GROUP

Our new website will be active soon! We look forward to sharing it with you.



Our Work

From predator and pest control, to monitoring our progress and changes in biodiversity at Hikaroroa / Mt Watkin, to educating our community (including our young people!).... we've got big plans! Check out all that we do.

More



Get Involved

We're looking for all kinds of volunteers! Whether you're an ecological expert, or just an enthusiast wanting to make a difference, find out how you can join our team and our community effort.

More



Donate

Support our efforts financially if you can. We are a volunteer organisation, and appreciate any help you can provide. Find out how to contribute!

More



Events

Learn about volunteer events to support our conservation efforts, training and professional development opportunities, and community events open to everyone!

More

Thank you and Acknowledgments – Questions























References used to support this presentation are available upon request. Please contact Jamie: jamie@risingcloud.co.nz