TE MANAHUNA AORAKI PROJECT

ANNUAL REPORT

2020

Claudia Mischler and Holly Thompson heading out to look for kakī eggs. *Ben Pigott*
Cover: Juvenile kakī/black stilt. *Philip Guilford*

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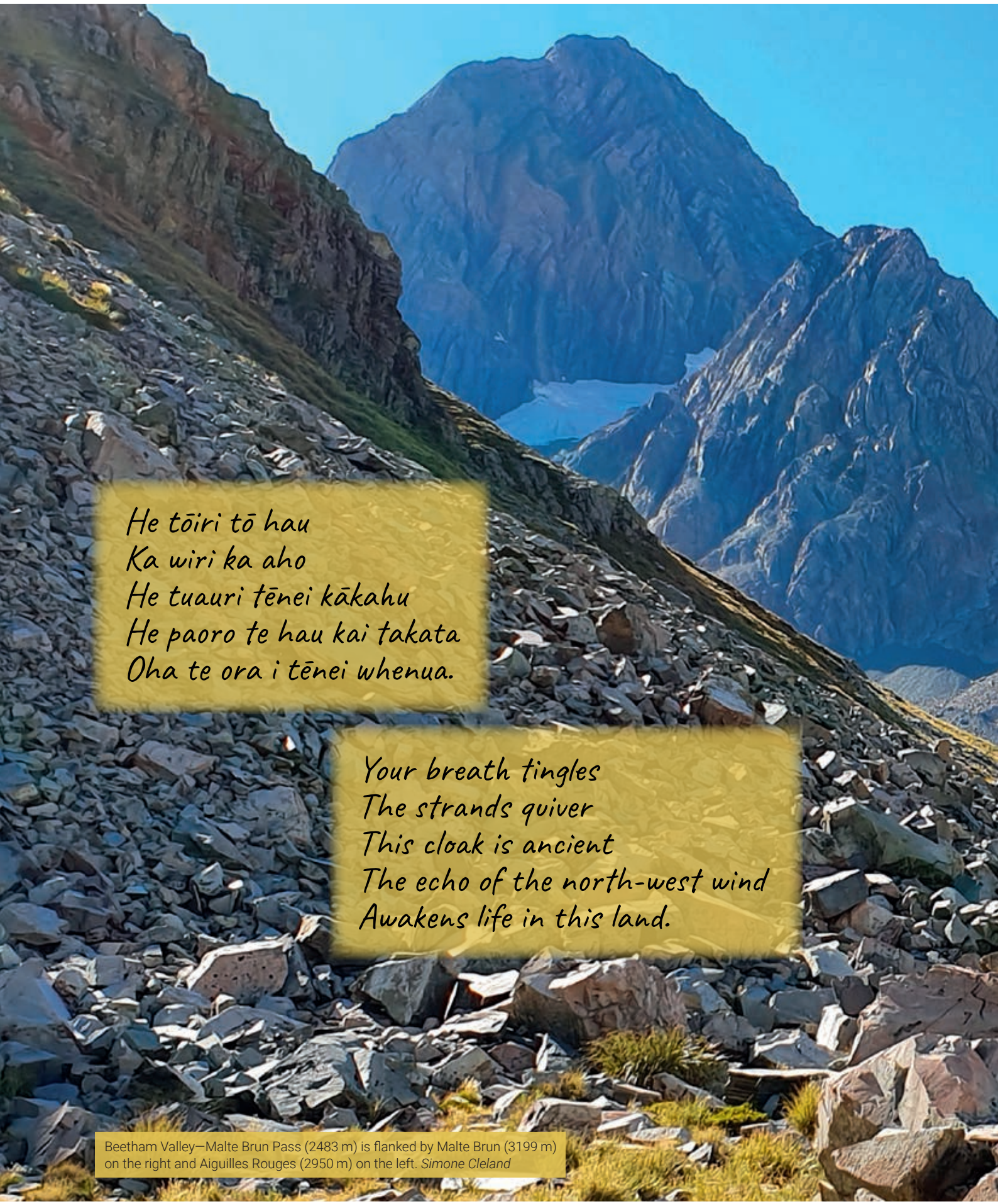
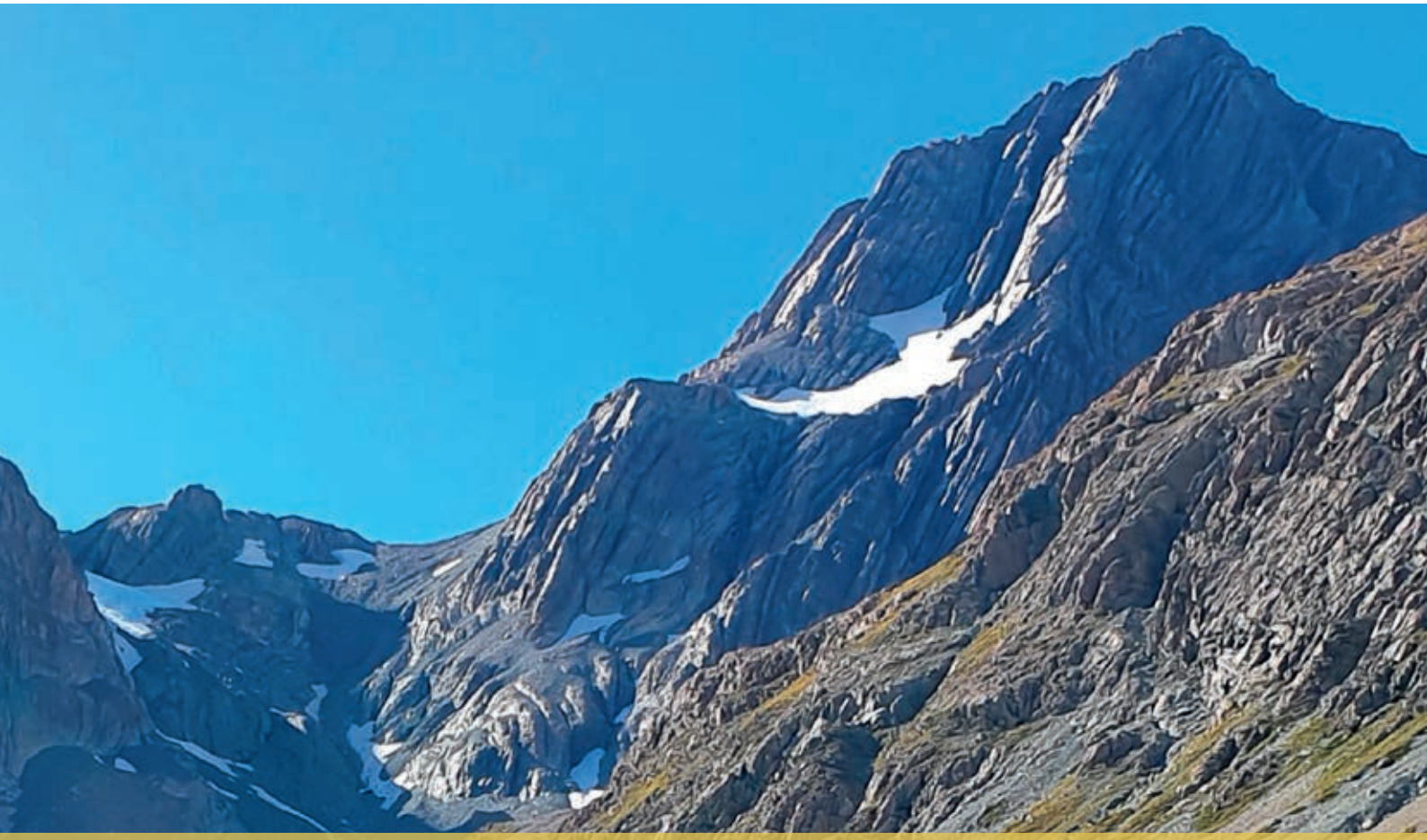


Beetham Valley—Malte Brun Pass (2483 m) is flanked by Malte Brun (3199 m) on the right and Aiguilles Rouges (2950 m) on the left. *Simone Cleland*



INTRODUCTION

Turiwhatu/banded dotterel. *Philip Guilford*

CHAIR AND DIRECTOR'S REPORT

It is a pleasure to present Te Manahuna Aoraki's annual report covering the second of the three years that comprise the first stage of this ambitious project. Our focus in this stage is on three kinds of activities—control of predators and invasive weeds where it is urgent, research to inform our long term planning, and building and strengthening our relationships with others who care deeply about this beautiful part of the country.

This includes those who live and work and visit there—the runholders, the communities of Tekapo and Twizel, the tourist operators who have been hard hit by the pandemic, and the mountaineers and trampers. Crucially, it includes those whose relationship with the land stretches back over many hundreds of years—the tangata whenua.

The three kaitiaki rūnaka of Arowhenua, Waihao and Moeraki are leading the work on the protection of native fish in small upland streams. This involves removing the predatory trout upstream of weirs to ease the pressure on the native fish. They are also taking the lead on the restoration of Motuariki Island in Lake Takapō/Tekapo—an island that was once a meeting place of chiefs. Those on a visit to the island in the summer found there is much to do and work will begin with a cultural and archaeological survey.

The birds that live in the braided rivers that flow into the two lakes are especially vulnerable to predators, and the extension of the trapping lines in the Tasman, Godley, Cass and Macaulay river systems is now complete. More than four thousand traps are in place helping to protect the kakī/black stilt, the ngutu parore/wrybill, and other threatened birds. The floods in early summer washed away some of these traps and nests, but the traps were replaced quickly and some of the birds nested again.

Our intrepid Otago PhD student Nick Foster has continued to collect data on stoats, feral cats, possums, ferrets, hedgehogs and hares from his cameras located on mountainous terrain. The data from this second field season are showing similar trends to that collected in the first season.

Unsurprisingly, some projects were impacted by the pandemic in the first half of 2020. Traps had fortunately been checked just before the country went into full lockdown in March, but could not be checked again until May. The experiment on rabbit eradication was stopped for the same period. The planned spraying of the remaining rowan in autumn had to be deferred until 2021.

The three different designs of predator-proof fences continue to be tested in the harsh mountain environment—so far all are holding well. The fence enclosing the robust grasshopper sanctuary has not yet been breached though feral cats have been photographed prowling around it.

The addition of night vision equipment to the set of tools aimed at eradicating rabbits has given encouraging results, although there is no silver bullet for this long-standing high country challenge.

A coordinated effort led by runholders to reduce the Canada geese population across the project area was very successful. A similar approach will be taken this year.

A great deal of work this year has gone into early planning of the long term project that is intended to follow this first three years. For such a long term project, monitoring baseline populations of indicator species is essential for measuring progress. This year the monitoring of populations of macro invertebrates has begun.

Finally on behalf of the Board, we thank the Te Manahuna Aoraki team, the wider community and all those who have contributed in various ways to this project. Without your commitment, hard work, and tenacity, little would be achieved.

Dr Jan Wright, Te Manahuna Aoraki Chair
Fiona McNab, Te Manahuna Aoraki Director

Moving gear around the old fashioned way—Two Thumb Range. *Nick Foster*

TE MANAHUNA AORAKI PROJECT PARTNERS

Collaboration is key to transforming the ecological prospects of the upper Mackenzie and Aoraki/Mount Cook National Park.

FOUNDING PARTNERS

Department of Conservation

The Department of Conservation/Te Papa Atawhai manages 60% of the project's land area, including Aoraki/Mount Cook National Park.

www.doc.govt.nz

NEXT Foundation

NEXT is a strategic philanthropy fund. Its vision is to leave a legacy of environmental and educational excellence for the benefit of future generations of New Zealanders—supporting our land and our people.

www.nextfoundation.org.nz

Te Rūnanga o Arowhenua

The takiwā of Te Rūnanga o Arowhenua centres on Arowhenua and extends from Rakaia to Waitaki, sharing interests with Ngāi Tuahuriri ki Kaiapoi between Hakatere and Rakaia, and inland to Aoraki and the Main Divide.

www.arowhenua.org

Te Rūnanga o Moeraki

Moeraki is the southernmost rūnaka in the project area. It centres on Moeraki and extends from Waitaki to Waihemo and inland to the Main Divide.

www.terunangaomoeraki.org

Te Rūnanga o Waihao

Te Rūnanga Waihao is named for its river, which has its footprint in the inland foothills. The takiwā centres on Wainono, sharing interests with Te Rūnanga o Arowhenua to Waitaki, and extends inland to Omarama and the Main Divide.

www.waihaorunanga.co.nz

PARTNERS

Landowners of Te Manahuna Aoraki

The 14 large private landowners in the project area are all key partners in the project.

Aotearoa Foundation

An affiliated foundation to the Robertson Foundation established by Julian and Josie Robertson and their family in 1996. The foundation's primary area of interest within the environment is the impact of climate change.

www.robertsonfoundation.org

Global Wildlife Conservation

Global Wildlife Conservation is an international conservation organisation working with local partners to protect wildlife and their habitats in more than 50 countries.

www.globalwildlife.org

Jasmine Social Investments

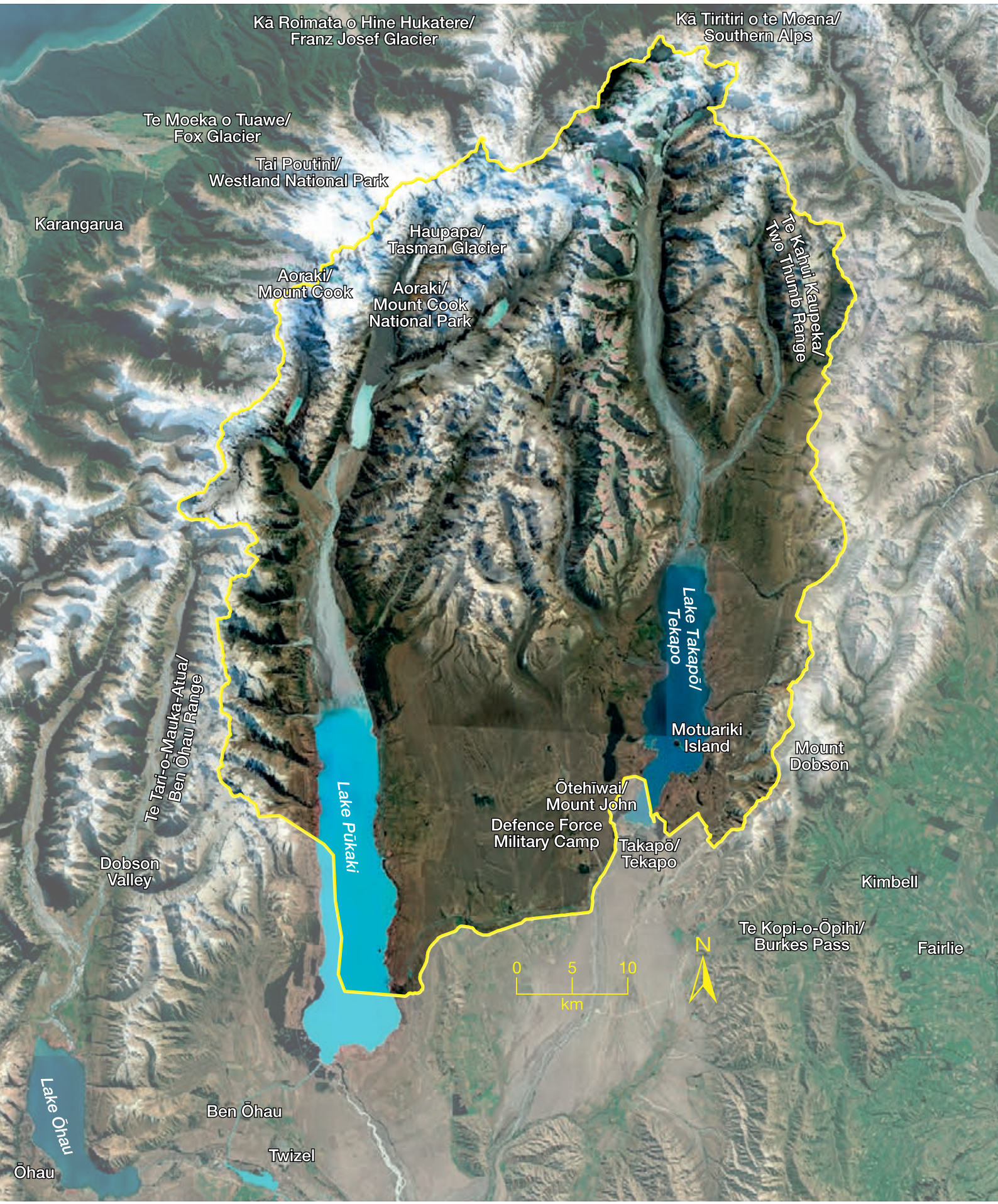
Jasmine Social Investments funds high-performing social ventures. Areas of interest include health, education, better livelihoods and environmental sustainability.

www.jasmine.org.nz

Predator Free 2050 Limited

Predator Free 2050 Limited is a Crown-owned, charitable company established to help deliver the New Zealand government's ambitious goal of eradicating possums, stoats and rats by 2050.

www.pf2050.co.nz


Kā Roimata o Hine Hukatere/
Franz Josef Glacier
Kā Tiritiri o te Moana/
Southern Alps
Te Moeka o Tuawe/
Fox Glacier
Tai Poutini/
Westland National Park
Karangarua
Haupapa/
Tasman Glacier
Te Kahui Kaupeka/
Two Thumb Range
Aoraki/
Mount Cook
Aoraki/
Mount Cook
National Park
Lake Takapō/
Tekapo
Te Tari-o-Mauka-Aitua/
Ben Ōhau Range
Motuariki
Island
Mount
Dobson
Lake Pūkaki
Ōtehīwai/
Mount John
Defence Force
Military Camp
Takapō/
Tekapo
Dobson
Valley
Kimbell
Te Kopi-o-Ōpihi/
Burkes Pass
Fairlie
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Lake Ōhau
Ben Ōhau
Twizel
Ōhau

PROJECT AREA HAS IMMENSE CULTURAL SIGNIFICANCE

Te Manahuna Aoraki has a huge cultural, spiritual and traditional significance for the three rūnaka who whakapapa to the area; Te Rūnanga o Arowhenua, Te Rūnanga o Moeraki, and Te Rūnanga o Waihao.

As mana whenua they whakapapa to their tūpuna, Aoraki, who is at the heart of creation traditions and seen as the link between the super natural and natural world.

Te Manahuna is the name for the Mackenzie Basin and means the place of enlightenment. While their permanent settlements were on the east coast, Te Manahuna was the place where the tūpuna visited, hunted, fished and gathered on a seasonal basis.

"Because of the fact Te Manahuna was such an important mahika kai site for the gathering of resources, this place also became a place of relaxation and enjoyment. Our people would come up to this area in the summer months and relax and enjoy life away from the coast," says David Higgins.

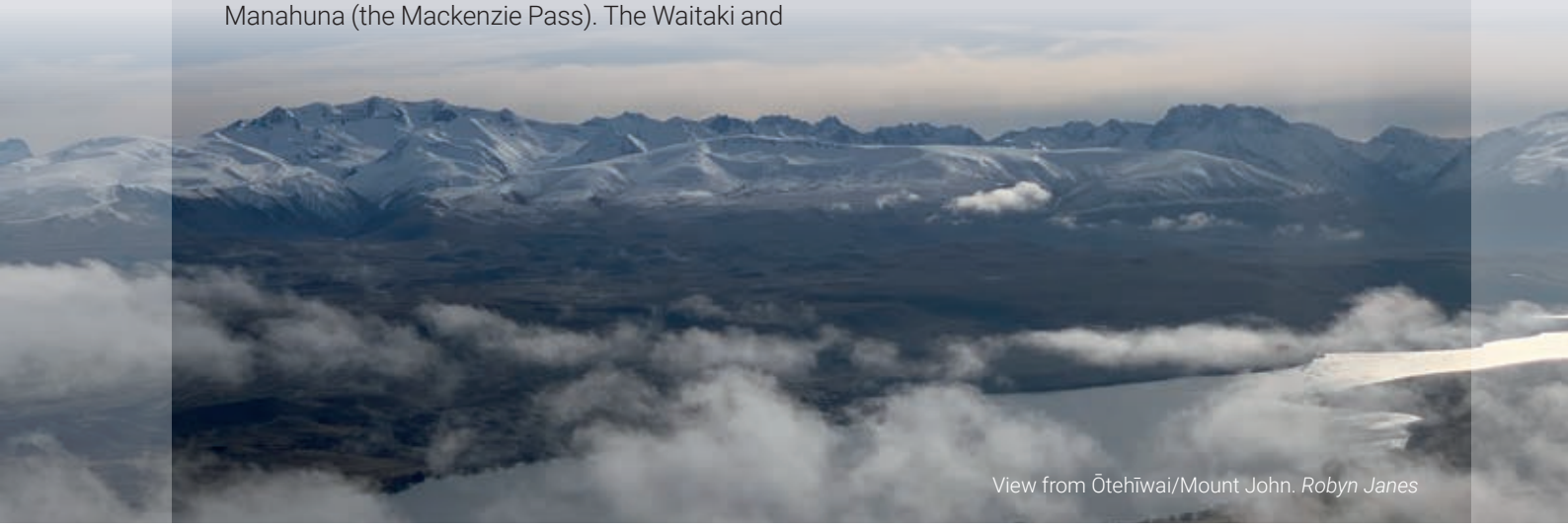
Tuna (eels) and weka were traditionally gathered from May to August when they had a high level of fat content which helped in the preservation process. The central location of Te Manahuna allowed easy access via a variety of aro tawhito (ancient trails). From Arowhenua they primarily travelled over Te Kopi-o-Ōpihi (Burkes Pass) or Te Manahuna (the Mackenzie Pass). The Waitaki and Hakataramea Rivers and Ōmakō (Lindis Pass) served as major travel routes from Waihao and Moeraki in North Otago.

"It was also a place our people would rest before they travelled over the Ahuriri to Hawea and Wanaka. Or they would travel up the valley and over the top of the saddle to Te Tai o Poutini to gather pounamu," says David.

Development, changes in land practices, and introduced predators have all restricted the ability to continue mahika kai over the last 150 years. Weka were last seen in the Godley Valley in the early 1900s and tuna (eels) are no longer in abundance.

However mahika kai remains at the heart of mana whenua culture, identity and practice today. Despite many whānau being physically disconnected there is still an immense sense of belonging and connection with Te Manahuna. David Higgins says with this connection comes a responsibility to care for the whenua, as it has cared for those who came before. Whānau look forward to the day when their cultural landscapes are not threatened by pests and indigenous and mahika kai species are thriving again.

"We have an opportunity to restore our role as mana whenua in this place. It's even more important that our young people, our mokupuna understand the traditions and histories."



View from Ōtehīwai/Mount John. *Robyn Janes*

A YEAR IN REVIEW

July 2019

- Trapping network extension of 2,200 traps completed

August 2019

- 130 kakī released by DOC's Kakī Recovery Programme
- Terrain avalanche mapping completed
- Over 86,000 people view video of kakī release

September 2019

- Outcome monitoring on braided rivers start
- First nests recorded
- New project director appointed

October 2019

- MSc students begin fieldwork for Norway rat research

November 2019

- Canada goose control starts
- Monitoring devices deployed at robust grasshopper enclosure
- New kakī brooder in action

December 2019

- Highest wind recorded (196 km/hr)
- Braided rivers hit with a significant flood, birds re-nest
- New networks trap 1,000th predator
- Trapping team repairs network after floods

June 2020

- High altitude trap lines closed for winter.

May 2020

- Fieldwork resumes under Level 2 lockdown
- Record 169 kakī alive in the wild
- Motion activated cameras and hedgehog transmitters recovered
- Julius receives interim Conservation Dog certification

April 2020

- Still in lockdown
- Conservation dogs training at home

March 2020

- Covid Level 4 lockdown halts fieldwork from late March
- Actor Leonardo DiCaprio shares kakī story with 58 million followers

February 2020

- Rūnaka representatives visit Motuariki Island
- Conservation dogs join project
- Macro invertebrate monitoring begins
- 2,000 people following Facebook page
- Tuke/rock wren monitoring begins

January 2020

- Predator Free Aoraki officially launched, start deploying new traps
- Videos filmed with project leads

Kakī/black stilt. *Bevan Tulett*

NEW PROJECT DIRECTOR APPOINTED

The project welcomed Fiona McNab as the new Project Director in 2019.

Aoraki and the Mackenzie Basin is an area that is extremely special to Fiona, both aesthetically and spiritually.

Fiona comes to Te Manahuna Aoraki with 20 years experience in project and programme management in the private sector, local, and central government. She has an MA (Hons) in political science and her career has taken her from hometown Christchurch, to Wellington, Canada, Wales, Australia, Italy, Austria and back to Christchurch.

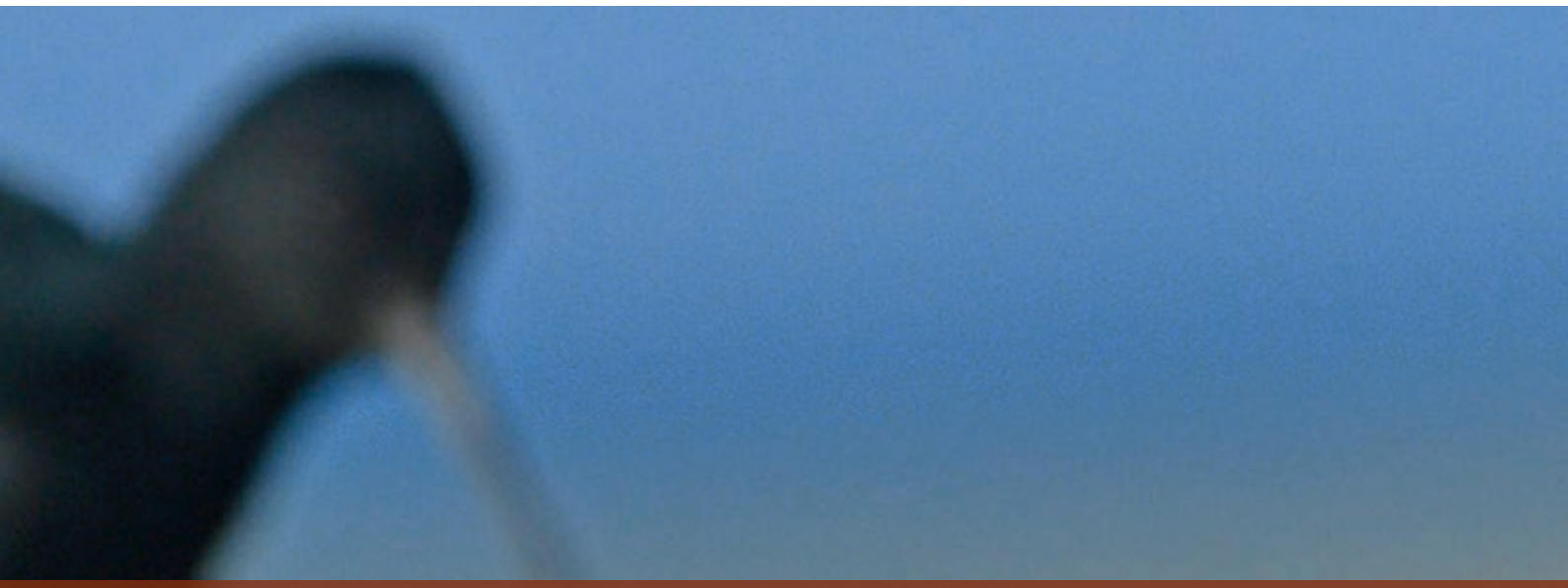
Most recently she managed the Christchurch City Council Land Drainage Recovery Programme, which saw her overseeing over 150 projects and a $1.2 billion budget.

Fiona loves a challenge and is enjoying the variety of her new role. "You can't help but feel awed and positively connected to such an inspiring landscape. Learning more about the threatened species that live in it has been wonderful as well."

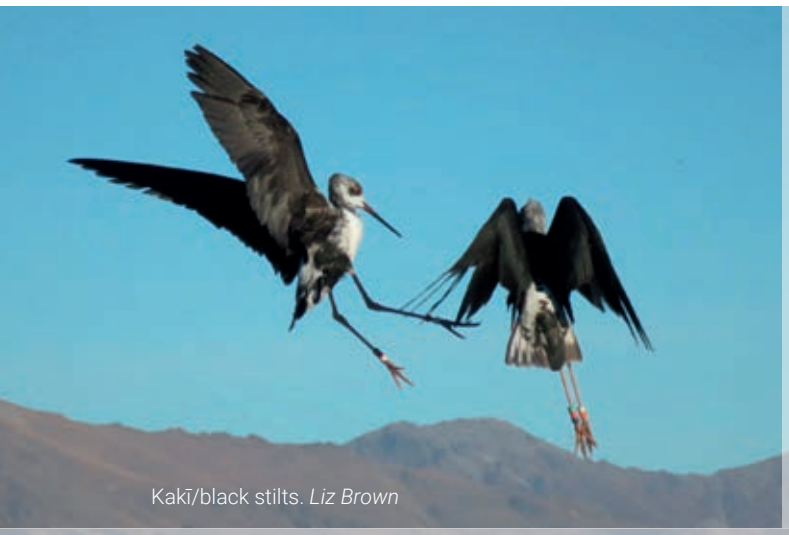
So far, she's managed to get up close to kakī/black stilt and robust grasshoppers—a species her son is particularly fascinated by after a visit to the enclosure to watch how researchers search for the endangered grasshopper. She is also a big fan of the project's conservation dogs—Julius, Sonny Bill and Slick.

Fiona says she has particularly enjoyed the collaboration aspects of the project and meeting the people involved. "I'm appreciating getting a greater understanding of the community and learning about the culture and mana whenua traditions of Te Manahuna Aoraki."

Turiwhatu/banded dotterel with kakī/black stilts in background. *Bevan Tulett*

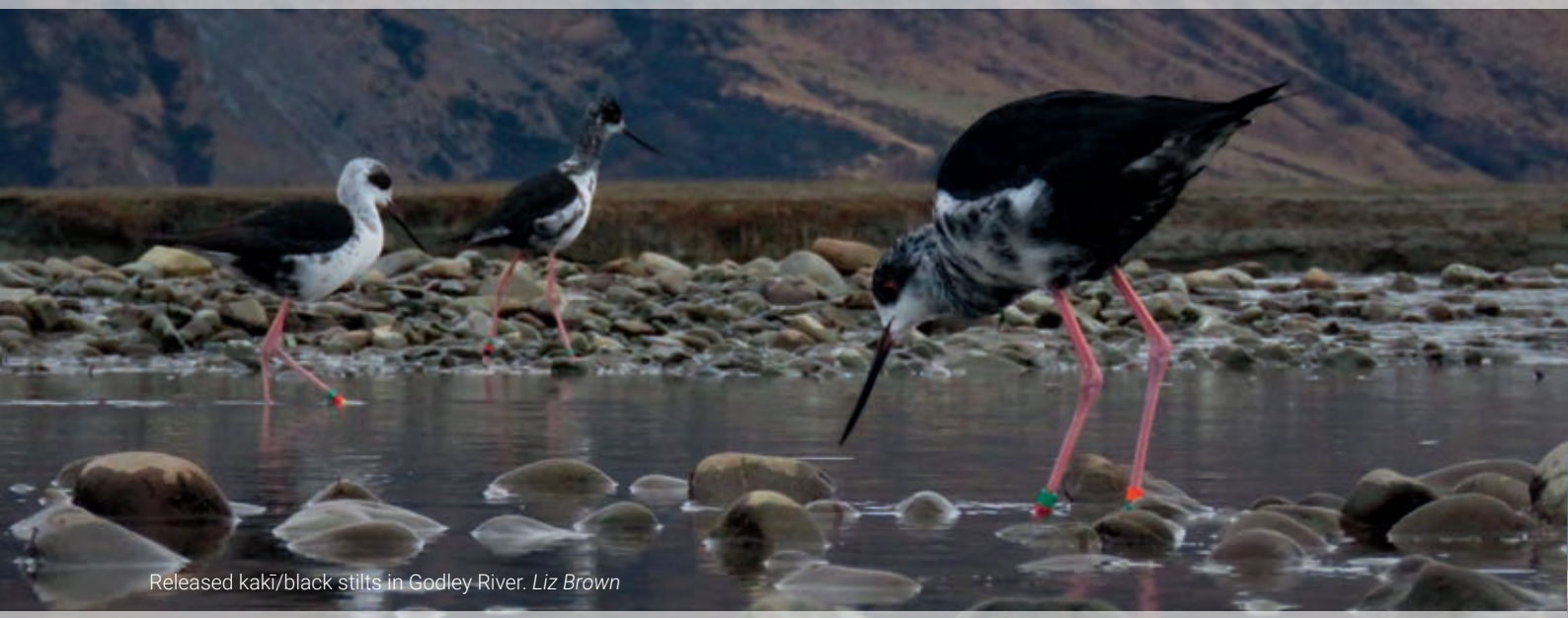


PROTECTING OUR THREATENED SPECIES



Kakī/black stilts. *Liz Brown*

Kakī/black stilt release.
Liz Brown



Released kakī/black stilts in Godley River. *Liz Brown*

Arowhenua Māori School students atttend kakī/black stilt release. *Liz Brown*

KAKĪ NUMBERS HIGHEST IN OVER 40 YEARS

A collective effort involving years of work by the Department of Conservation's intensive captive breeding programme and an increase in predator control saw the largest ever increase in kakī/black stilt numbers in 2020.

There are now 169 critically endangered adult kakī/black stilt—the world's rarest wading bird—living in the wild. This is an increase of 30% from the year before.

We're seeing years of hard work to protect these critically endangered birds finally turning the tide for their recovery," says DOC Senior Biodiversity Ranger, Dean Nelson.

Kakī, alongside other rare bird species, breed in braided riverbeds leaving them and their eggs vulnerable to introduced mammalian predators—predominantly feral cats, stoats, weasels, ferrets and hedgehogs.

In 2019 130 juvenile kakī were released in the Tasman and Godley river systems. Hopefully most will survive to adulthood and be included in next season's count.

"Thanks to the team effort involved in DOC's successful captive breeding programme and amazing support from partner organisations, there are 40 more adult birds living and breeding in the wild, than this time last year, and the largest population increase since the programme began."

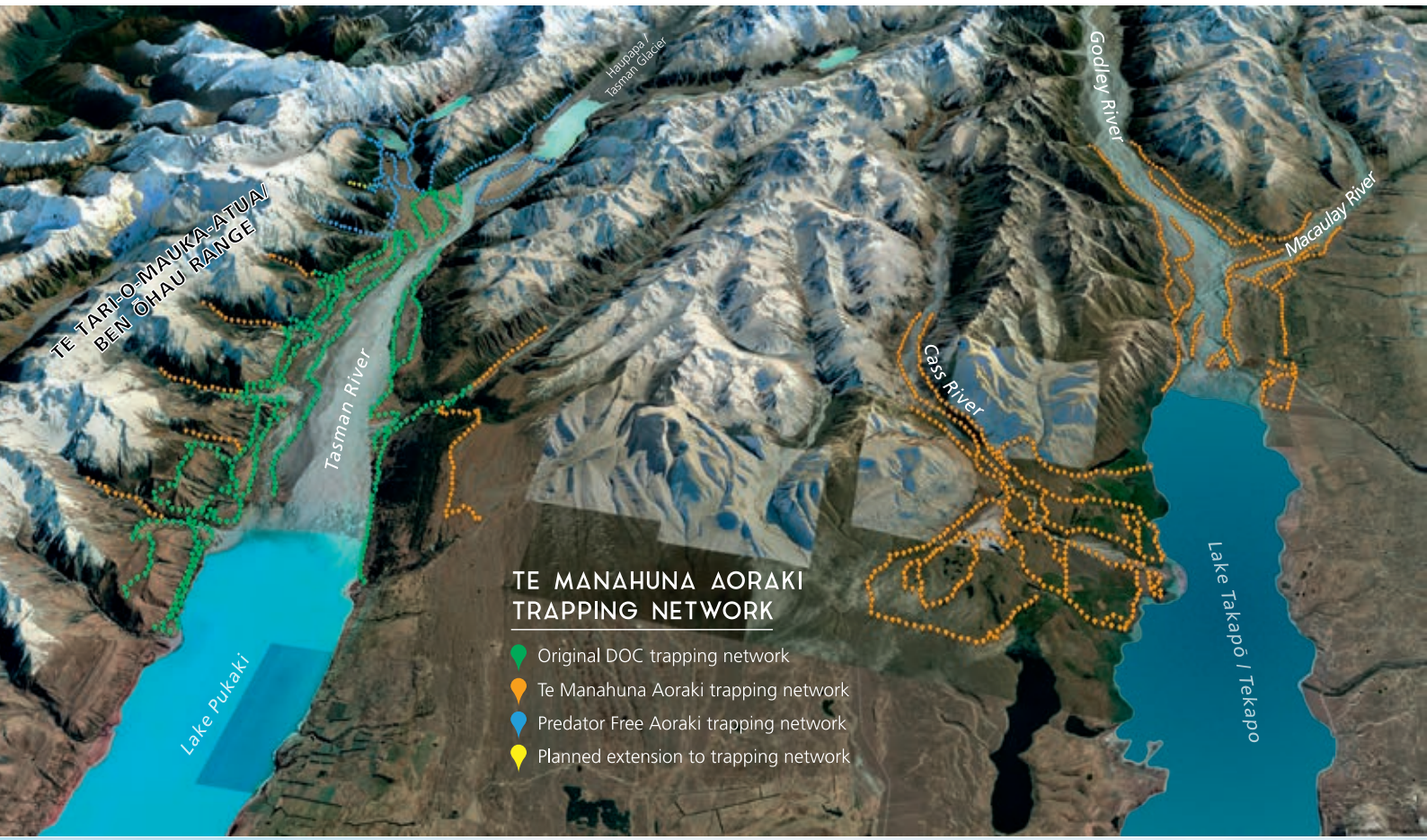
Minister of Conservation Eugenie Sage

Rere atu taku pepī
Rere atu taku kakī
Rere atu me kimihia kai
Me whakawātea taku whangai.

Fly away my baby
Fly away my kakī
Fly away and search for food
Fly away my adopted one.

Arowhenua Māori School tamariki

Arowhenua Māori School students at kakī/black stilt release—Godley River. *Liz Brown*



Tom Smits at Cass trap line on Glenmore Station. *Phil Tisch*

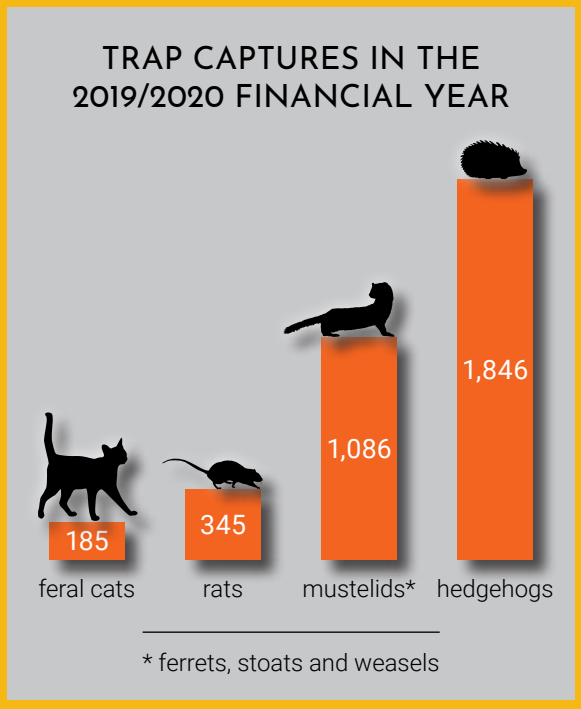
TRAPPING NETWORKS HELPING THREATENED SPECIES SURVIVAL

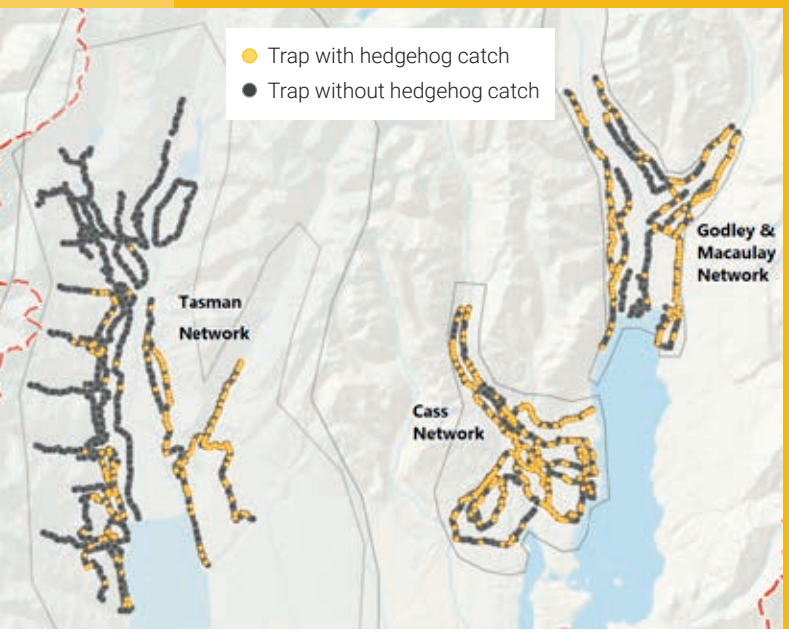
Te Manahuna Aoraki is continuing to expand trapping networks to not only protect kakī/black stilt and other braided river birds, but also alpine species.

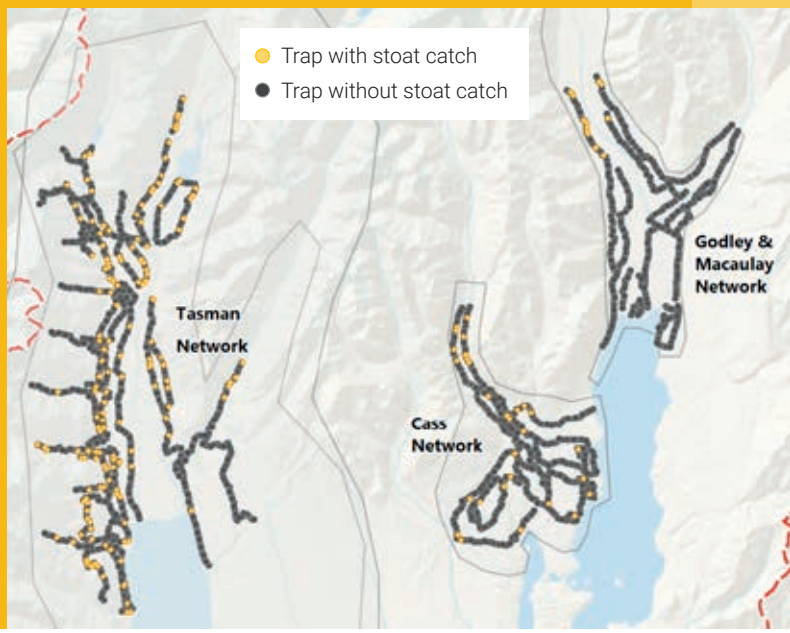
This year the project collaborated with volunteer group Predator Free Aoraki to extend networks into the back country of Aoraki/Mount Cook National Park, with 120 new traps. The group began the network at Tasman Lake and Wakefield Ridge but the Covid-19 lockdown delay meant the avalanche risk was too great to deploy all the new traps. The network will be completed in late 2020.

Last year the project extended the original DOC and Project River Recovery's trapping network in the Tasman Valley, with the network now covering more than 60,000 ha. This represents over 80% of the kakī/black stilt range, including the Cass, Godley and Macaulay river valleys. Landowners from Glentanner, Ferintosh, Mt Cook, Lilybank, Godley Peaks, Glenmore, Mt Gerald and Macaulay Stations have generously allowed networks onto their land to help protect the birds.

Previously less than 30% of young kakī/black stilt released in the Godley and lower Cass river valleys survived to become adults, compared with 50% in areas with significant trapping like the Tasman valley. Other threatened birds that breed in these braided rivers including ngutu parore/wrybill, tarapiroe/black-fronted tern, turiwhatu/banded dotterel and tarāpuka/black-billed gull are also expected to greatly benefit from the extended trapping network.







NEW KAKĪ BROODER FACILITY A "JOY"

A new brooder facility at DOC's Kakī Recovery Centre in Twizel has doubled capacity and greatly improved conditions for both young kakī/black stilt chicks and their dedicated helpers.

"Everybody here loves working in this new brooder room, it's a joy to work in," says kakī aviculturist Liz Brown.

The new brooder facility was completed for the 2020 kakī breeding season. It was funded primarily by Te Manahuna Aoraki partner Global Wildlife Conservation (GWC), along with DOC, Meridian Energy and Genesis Energy. GWC also funded a $500,000 aviary at the facility last year.

Kakī eggs are collected from the wild, where they are vulnerable to predation, and raised in Twizel. They are moved to free-flight aviaries when they are 35 days old before being released into the wild at around 9 months of age.

DOC needed more capacity to rear the chicks, and the purpose built facility has doubled the number of individual brooder units from 8 to 16.

Staff used their collective knowledge to design the new brooder. The design improves not only efficiency but also hygiene.

Kakī/black stilt chick

Kakī/black stilt chicks in brooder room. *Dave Kwant*

Liz Brown working in brooder room. *Dave Kwant*

LANDOWNERS STEP IN WHEN KAKĪ MOVE TO THE FARM

Te Manahuna Aoraki landowners gave kakī an extra helping hand this breeding season when the birds moved onto farmland in search of food and a place to nest.

A number of floods in late 2019 saw breeding kakī relocate from the braided riverbeds where they normally breed.

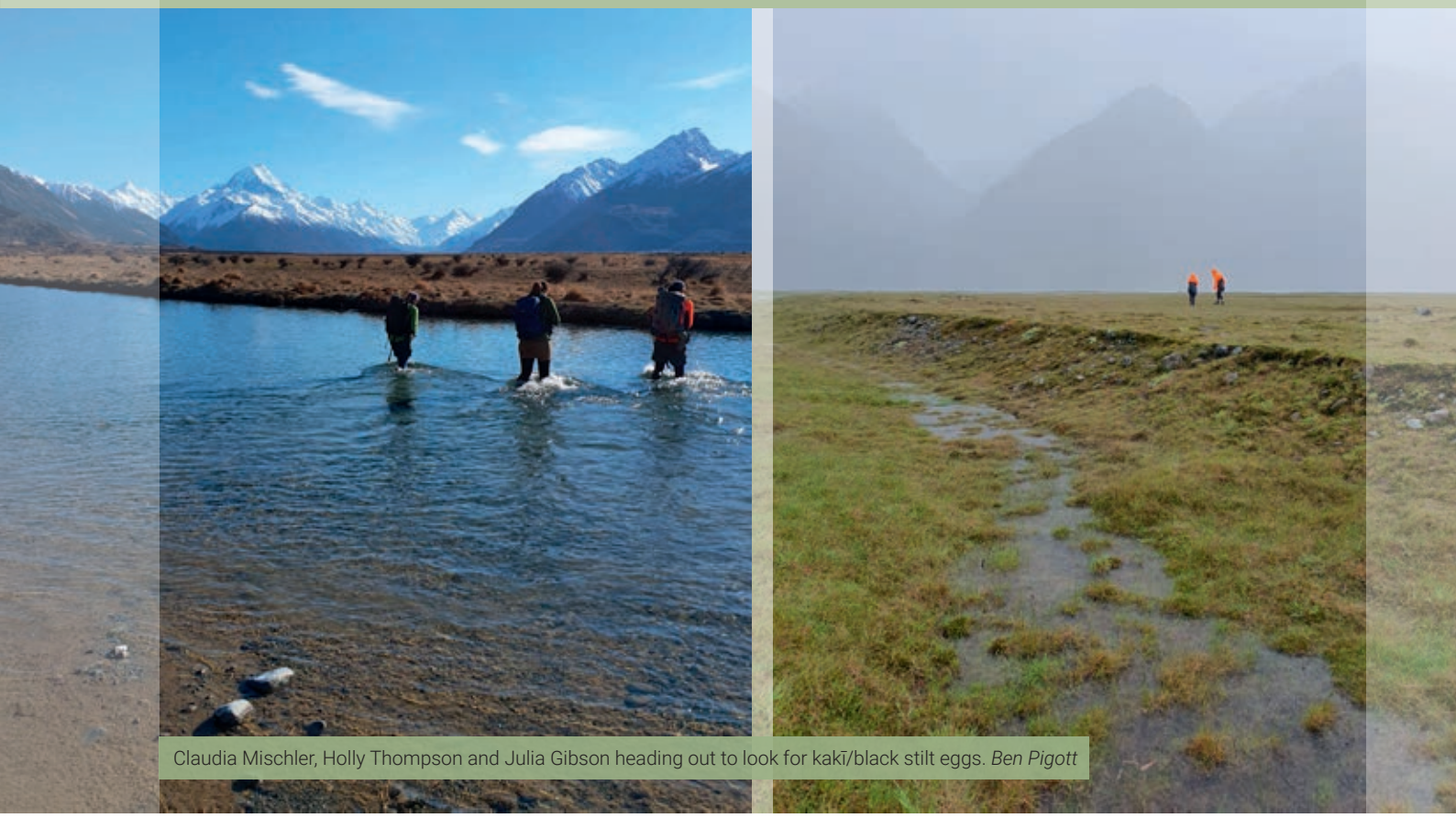
"Last summer rivers started flooding and when that happened the food disappeared and most of the kakī ended up nesting on farmland," says DOC field team lead Claudia Mischler.

As part of the Kakī Recovery Programme eggs are collected from wild nests and then hatched in captivity. Nearly 170 kakī eggs were raised in Twizel and The Isaac Conservation and Wildlife Trust this season—over 100 of those collected from the wild.

Claudia says the key to kakī recovery is bringing in as many eggs as possible. She says landowners are now more aware about kakī through their involvement in Te Manahuna Aoraki and those on stations that have tarns and suitable kakī breeding habitat like Braemar, Tasman Downs, Mt Cook, Guide Hill, Mt Gerald, Glenmore, Mt Hay, Godley Peaks, Balmoral and Lilybank were incredibly helpful when it came to tracking down the nests.

"Landowners were telling me where they saw the kakī nesting, in places I didn't know to look, or sending me photos of kakī. The fact they were noticing them and telling me was fantastic, they know their land and see what is going on."

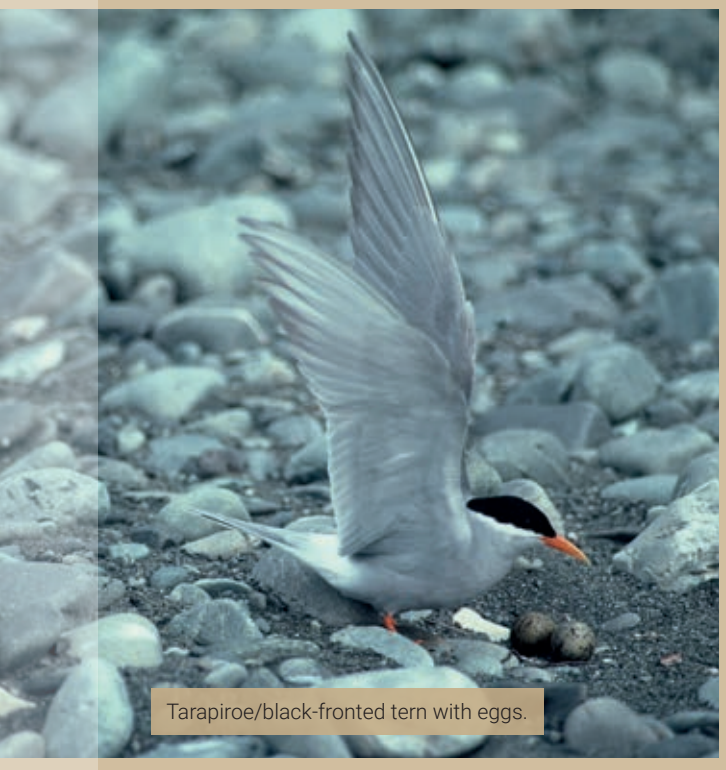
Kakī were on the brink of extinction in 1981, when the adult population declined to a low of just 23 birds.



Claudia Mischler, Holly Thompson and Julia Gibson heading out to look for kakī/black stilt eggs. *Ben Pigott*

Tasman and Hooker river confluence. *Simone Cleland*

TASMAN RIVER PROTECTION WINS AWARD



Tarapiroe/black-fronted tern with eggs.

DOC, Project River Recovery and local landowners and volunteers were recognised in 2019 with their work to protect the Tasman River winning the best river story at the Cawthron Institute's New Zealand River Awards.

The Tasman River starts below the Tasman Glacier and flows into Lake Pūkaki. It is a braided river which is under threat from introduced plants and pests. For the past 15 years DOC, and the power companies—Meridian and Genesis—plus volunteers and local landowners from Glentanner, Ferintosh and Mt Cook Stations have been working to protect and restore the Tasman River's natural ecosystem.

The project has involved spraying invasive plants and trapping predators.

The award was fantastic recognition of this hard work which has seen kakī/black stilt and tarapiroe/black-fronted tern numbers increase.

TRAPPING NETWORKS PROTECTING CHICKS

The effectiveness of new trapping networks saw increased hatching and fledging although flooding did impact braided river species.

This was the second year of monitoring tarapiroe/black-fronted tern (nationally endangered), tarāpuka/black-billed gull (nationally critical) and turiwhatu/banded dotterel (nationally vulnerable) nests in the Tasman, Cass, Godley and Macaulay river valleys.

Nests were monitored using motion activated cameras and visual checks by the monitoring team. This data allows us to measure the benefits of predator control in terms of breeding success and population growth.

DOC has undertaken outcome monitoring in the Tasman since 2005. While it's too soon to know definitively, Te Manahuna Aoraki's trapping networks in the Cass, Godley and Macaulay seem to have had a positive impact on breeding success. Project Manager Simone Cleland says it was pleasing to see the outcome monitoring did not reflect high levels of predation. Turiwhatu/banded dotterel predation rates were a third of the previous year, resulting in a 40% increase in hatching success, despite the one-in-20-year flooding event.

While river birds have evolved to renest after losing eggs or chicks, the flooding did have a major impact on our colony nesters. None of the monitored black-billed gull nests successfully hatched chicks in the Godley because of flooding. Hatching success for this species was highest in the Cass river (52%), followed by the Tasman (25%).

Tarapiroe/black-fronted terns had the highest hatching success in the Cass (49%) followed by the Macaulay (43%), Godley (28%), and Tasman (27%).

Thirty three turiwhatu/banded dotterel nests were monitored in the Cass this season. The hatching success rate for nests was 72%, compared to 33% the previous year. Of the 89 banded dotterel eggs with a known fate 61 hatched successfully. Of the 28 which failed to hatch, 17 were preyed upon, 10 were flooded, and one egg was infertile.

TURIWHATU/BANDED DOTTEREL TO BE TRACKED

With their characteristic run-stop-peck-run method of foraging small invertebrates the turiwhatu/banded dotterel can be spotted on the braided riverbeds during breeding season. Recognised by their broad chestnut breast band, their habit of nesting in open riverbeds mean their numbers are declining. Their conservation status is Nationally Vulnerable.

Nests are vulnerable to off-road vehicles and introduced predators like hedgehogs, stoats, and feral cats which eat eggs and small chicks. Breeding happens between August and January. Then, at the end of summer these birds will migrate 1600 km or more to Tasmania and south-eastern mainland Australia, or to northern New Zealand to "winter" over.

During the 2020/21 breeding season Te Manahuna Aoraki will support research that plans to attach bands to a number of turiwhatu so we can follow their winter migratory patterns.

Turiwhatu/banded dotterel. *Dave Murray*

Tuke/rock wren. *Chad Cottle*

TUKE/ROCK WREN HAVE POTENTIAL TO RECOVER QUICKLY

The most comprehensive tuke/rock wren survey undertaken in the project area was completed just before lockdown, with encouraging results.

Rock wren are a small and elusive alpine bird that are highly susceptible to introduced predators like stoats because they are poor fliers and nest on the ground. Prior to the 1980s, Aoraki/Mount Cook National Park was considered a stronghold for tuke, and they were commonly seen around popular walking tracks.

This is the second season of rock wren surveys and follows up the historic records from the 1980s. The survey teams climbed over mountain tops, rocky cliffs and boulder basins searching for the tuke. Of the nine survey sites, including Aoraki/Mt Cook, the Malte Brun, Liebig, Gamack, Sibbald and Ben Ōhau ranges, they found rock wren still persisting at seven—a much better result than expected. However only 50 birds were seen in the survey, so numbers were still very low.

DOC Science Advisor Kerry Weston says the survey results are encouraging because they show the birds are still present at remote locations where they haven't been recorded since the 1970s and 1980s.

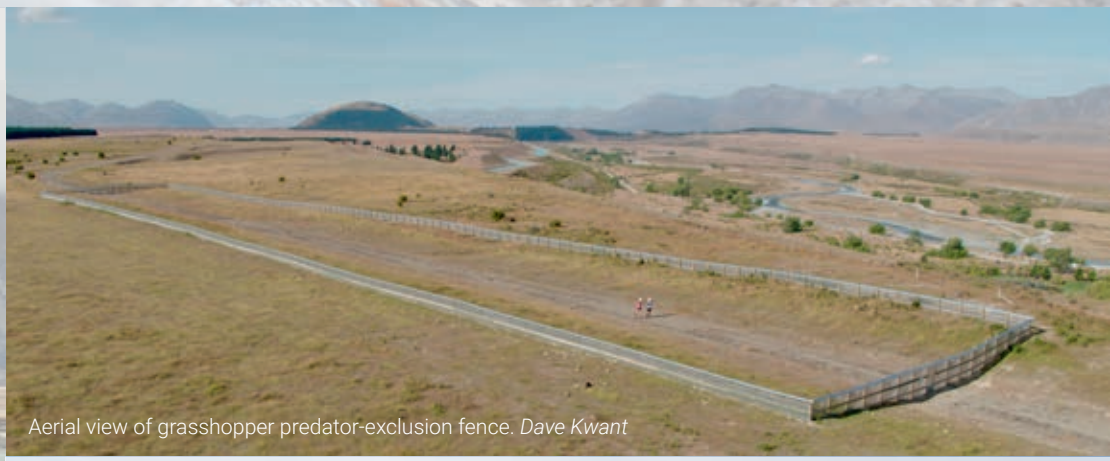
"Te Manahuna Aoraki and DOC can now focus on controlling predators at these sites and growing the number of rock wren within the national park. At several other South Island sites where DOC has monitored rock wren populations, the number of birds has increased dramatically following predator control."

In areas where there's no trapping only 35% on average of rock wren nests successfully fledge chicks, with most of the rest wiped out by stoats. After trapping networks are established this figure grows to around 70%—about twice as many survive. With a single pair of rock wrens producing several clutches each breeding season, Te Manahuna Aoraki's increased predator control means they have the capacity to multiply quickly.

Aoraki/Mount Cook. *Simone Cleland*

Robust grasshopper. *Tara Murray*

Thanks to local man Dennis Viehland whose generous donation helped fund the construction of the predator-exclusion fence.



Aerial view of grasshopper predator-exclusion fence. *Dave Kwant*

Photo: *Phil Tisch*

THIRD YEAR OF GRASSHOPPER MONITORING SHOULD PROVIDE MORE ANSWERS

While robust grasshopper numbers have not yet shown an increase inside our purpose built predator-exclusion enclosure, another native species is thriving in the predator free environment.

Te Manahuna Aoraki has built a 6,000 m² predator exclusion fenced area near Takapō/Tekapo. Working with DOC, and MSc students from Lincoln University and University of Canterbury, we are looking at whether excluding mammalian predators protects the nationally endangered robust grasshopper and results in a population increase, compared to unprotected areas outside the fence.

Tracking tunnels, cameras, and traps are deployed from November to February, and so far there have been no breaches of the fence by predatory mammals. Feral cats have not breached the fence, although they have been observed in moderate numbers in the surrounding environment and could theoretically jump into the enclosure.

This was the second year of monitoring robust grasshoppers within the fence and no noticeable increase in the population was observed. DOC's science advisor on invertebrates, Tara Murray, says this is not completely unexpected as numbers inside the fence were low to begin with. "Robust grasshoppers have a two-year lifecycle so we will need to monitor several generations before trends can be detected with confidence," she says.

In 2019 grasshopper counts were also lower than previous years, both inside and outside the exclusion fence, suggesting factors other than predators, such as environmental conditions, may have influenced grasshopper counts during this season.

However, skink numbers did increase substantially inside the fenced area compared to a similar area outside. "This suggests skinks are benefiting from predator exclusion, although further assessment is needed to determine if this is because of reduced predation, or better habitat quality in the absence of rabbits and hares," says Tara.

Given skinks can eat grasshoppers, a plan is underway to relocate the skinks inside the fence to suitable habitat outside. The research around the lizard relocation will also help understand what is the best tool for monitoring threatened lizards throughout New Zealand.

Grasshopper and predator monitoring will start again in November 2020 for its third season.

Robust grasshopper. *Jennifer Schori*

Beetham invertebrate monitoring site—scree wētā habitat.
Julia Gibson

Scree wētā survey by Julia Gibson.
Richard Maloney

Alpine scree wētā female.
Julia Gibson

ALPINE SCREE WĒTĀ

One of New Zealand's largest invertebrates in the alpine zone, the alpine scree wētā *(Deinacrida connectens)* lives under rocks on scree slopes at around 1,900 m altitude.

It is found only in the South Island, and is the most widespread of eleven species of giant wētā. Females tend to be bigger at around 4.5 cm, compared to males at 3.5 cm and they can weigh up to 10 grams.

Scree wētā can have vastly different colouring, from mostly black bodies to a mix of red, grey and olive. During the day, they stay under rocks and in crevices of scree slopes. During the night, they come out of cover to feed on plants like lichens, herbs and shrubs.

When disturbed, the scree wētā will either remain motionless or attempt to run away. If they need to defend themselves, they will raise their legs in a threatening posture and produce soft sounds. However this is not likely to deter a hedgehog, feral cat or stoat.

Alpine scree wētā male.
Julia Gibson

MACRO INVERTEBRATE MONITORING

The first year of macro invertebrate monitoring focusing on scree wētā, mountain stone wētā and tussock grasshoppers, took place over summer.

There is limited knowledge about invertebrate populations in the alpine environments of Te Manahuna Aoraki, so this monitoring will provide baseline data and record population and distribution changes over time, giving us good information about the impact of predator control.

These species were chosen because they are some of the largest bugs, and found in a range of habitats and altitudes. Some are active during the day, others at night. This means they cover the range of likely food sources for mammalian predators.

Teams monitored three sites, at different altitudes, over four days and nights. Grasshoppers are counted along 100-metre transects during the day when temperatures are over 15 degrees. Wētā are monitored at night using both pitfall traps and physical searches following the same transect lines at mid elevations (1,650 m) and habitat searches at higher sites (1,900 m). Each wētā is given a unique number made up of a sequence of dots.

Te Manahuna Aoraki ranger Julia Gibson says the sites are stunning but it can be tricky work. "Once it warms up you have to be pretty quick with the grasshoppers. The wētā aren't difficult to catch once you've found them, but can quickly duck into crevices which makes it a bit trickier. Mostly we try to disturb them as little as possible so if they're staying still we will carefully mark them without actually handling them," she says.

Macro-invertebrate monitoring—grasshopper survey. *Tara Murray*

NATIVE FISH PROTECTION

Plans are underway to protect native fish in parts of Fork Stream and its tributaries, with members of the three kaitiaki rūnaka set to relocate invasive trout next year so native fish can flourish.

Te Manahuna Aoraki is building on a collaborative project between the Department of Conservation, Environment Canterbury, New Zealand Defence Force and landowners that has seen brown and rainbow trout taken from tributaries on the true right (or west) of the Fork Stream over the last six years.

Patrick Tipa, of Te Rūnaka o Moeraki, says between January and April members of environmental teams, from Te Rūnaka o Arowhenua, Te Rūnaka o Moeraki and Te Rūnaka o Waihao, will spend around eight weeks removing trout from tributaries on the true left (or east) of the stream. Fork Stream is situated on Glenmore Station and land managed by the New Zealand Defence Force. It is an important spawning habitat for native fish like the upland longjaw galaxias.

Upland longjaw galaxias. *Simon Elkington, DOC*

Patrick's teams have been trained in electric fishing methods. The fish will be stunned and relocated to below two specially built weirs which form a barrier to prevent the trout moving up the waterways.

"It will take a few seasons but I think we can really improve the lifeforce of the awa. Not many people get up there so I feel pretty privileged to work in this area," says Patrick.

In 2019 rūnaka and Te Manahuna Aoraki representatives were able to watch work being undertaken by Defence, DOC and ECan at Fork Stream. Ecologist and freshwater fish expert Dr Rose Clucas has designed the methodology to build on their work.

Patrick Tipa with trapped tuna (eels)

PATRICK TIPA HAS GREAT LOVE FOR THE AWA

With a passion for anything to do with the awa Patrick Tipa is working to protect longfin eels, and improve the state of our waterways for all native species.

Patrick, is the project manager for Te Manahuna Aoraki's native fish project. He's been working to help the survival of longfin eels for around ten years. In 2018 he completed his Bachelor of Applied Management (majoring in Māori Organisational Leadership).

Historically, Patrick's tipuna caught tuna (eels) in Te Manahuna during mahika kai expeditions and he remembers participating in the tuna heke with his father at Te Waihora/Lake Ellesmere. "It's very different, at the lake the eels come up the hand-made drains on their tuna heke to the sea, whereas up the Waitaki River we have to go hunting for them," he says.

Modifications to the waterways and large-scale hydro dams in the Mackenzie Basin have made it hard for the longfin eel to access their traditional habitats. Longfin tuna live to between 60 to 80-years-old and only breed once in their lifetime. For thousands of years the eels have journeyed to a trench near Tonga when it's time to breed. Currents that circumnavigate New Zealand bring the larvae back and when they hit the salt water band where fresh and salt water meet they become glass eels and move upstream looking for somewhere to live.

However dams make that hard work. NIWA, Meridian Energy and members from the three kaitiaki rūnaka have spent years modifying elver traps at the base of the Waitaki Dam to catch and then transport the juvenile eels up the river.

A recent project has seen Patrick training others from Te Rūnaka o Arowhenua, Te Rūnaka o Moeraki and Te Rūnaka o Waihao in electric fishing and trapping as part of a NIWA, Meridian Energy and Genesis Energy collaboration to assess the state of the waterways, looking at all species including eels, galaxids, trout, even cockabullies to compare findings from a similar assessment 20 years ago. "Everyone is quite excited to see how it compares," he says.

While they returned anything they found back to the waterway, longfin eels over 5 kg were moved. Patrick says at that weight they are ready to make the journey to the Pacific. "When their eyes turn a bright electric blue, the same colour as the sky and their girth increases, it's time."

It's a long way from his former life as a chef in Australia and London. "When I first started at the marae in Christchurch, I used to help the aunties in the kitchen. After a few years I got tired of them telling me what to do," says Patrick. So he headed to Christchurch Polytechnic to train as a chef. After working overseas for many years he returned around the year 2000, and began studying Te Reo in Christchurch. "The aunties still tell me what to do," he laughs.

For the last nine years he and wife Nola have run wānanga at Moeraki marae, giving young parents a chance to learn Te Reo. "We wanted to get the parents involved because they don't get a lot of opportunity to study and the kids sometimes get a bit ahead of them in understanding the language which can make them feel a bit embarrassed," he says.

Life is busy. Patrick was Chair of Te Rūnaka o Moeraki for nine years and is currently the Ministry of Fisheries appointed Tāngata Tiaki/Kaitiaki for the takiwa of Te Rūnaka o Moeraki. He also works as a ranger at Katiki Point working with Penquin Rescue supporting takaraka (the southern name for yellow eyed penguins) at the Moeraki colony—the biggest in the South Island.

He says he is hopeful that the regions awa will be restored to health so future generations will be able to resume the cultural practice of mahika kai. "The majority of farmers are working towards sustainable practices and picking up the pace of looking after the waterways. It won't be a quick fix but it's much easier to fix something if it's not completely broken and I believe we're improving the mauri (life force) of the rivers each year and that can only be a good thing."

Conservation dogs Julius, Slick and Sonny Bill William. *Adriana Theobald*

BAIT TRIAL SHOWS CLEAR WINNER

A trial to test baits to lure feral cats found that piles of minced rabbit heads were most effective.

Four different feral cat lures were tested—bait piles of minced rabbit heads, fresh rabbit bait, salmon oil, and egg mayonnaise. The lure trials were undertaken at two different sites and were monitored using trail cameras.

The minced rabbit head bait piles were the most attractive lure to all the predators. Rabbits, mice and hedgehogs were seen eating the mayonnaise lure, but feral cats and ferrets did not try it. This does not necessarily indicate the feral cats don't like mayonnaise, just that they prefer fresh rabbit bait. Only rabbits and hedgehogs showed any interest in the salmon oil lure.

A number of feral cats identified on the camera footage did not interact with the baited traps, or only sprayed the trap to mark it rather than putting their head inside. This is an indication that while kill traps work for some feral cats, all the predator control tools will be required to target trap shy individuals.

Adriana Theobald with Julius

CONSERVATION DOGS HELPING WITH FERAL CAT CONTROL

The Te Manahuna Aoraki team welcomed some new recruits this year—Adriana Theobald and her four-legged colleagues; Julius, Sonny Bill and Slick.

The conservation dogs are a key component of a new trial to test whether feral cats can be completely removed from the Tasman Valley. Feral cats are apex predators. They prey indiscriminately on all species, have large home ranges, and are trap shy and difficult to control.

"Despite ongoing feral cat control by DOC and Project River Recovery over the past decade, largely by kill trapping, the numbers of feral cats are not reducing or being eliminated," says Te Manahuna Aoraki Project Manager Simone Cleland.

The trial was started before the Covid-19 lockdown, although field work was suspended until Level 2. Julius, who is a mixed breed hunting dog with a combination of German Shorthaired Pointer cross, achieved his Interim Conservation Dog Certificate from the Conservation Dogs Programme, which is supported by Kiwibank, in May. This is a prerequisite to the full certification and allows him to work on public conservation land.

"It was a huge achievement. Te Manahuna Aoraki needed him on board in a short period of time so I needed to retrain him as he was already a hunting dog. Usually it takes up to a year to get a dog ready and they start as pups, so I was very pleased with him," says Adriana.

Adriana says the best use of Julius is to identify feral cat "hotspots" so cage traps can be deployed. The cages are initially left open to let the feral cats familiarise themselves with a new object in their environment. Next stage is to bait the cages with minced rabbit bait to catch the feral cats. When the feral cats stop showing up on the camera footage Julius is brought in again to identify any new hotspots or sign of feral cats remaining.

Julius and Adriana have started working through the landscape from Aoraki/Mount Cook down into the braided rivers to detect feral cats. The target of this trial is to get feral cats to zero density in most of the true right of the Tasman Valley using conservation feral cat detection dogs, lures and bait dumps. The trial is due to be completed in 2021.

MORE FERAL CAT DOGS IN TRAINING

While conservation dogs that sniff out protected species like kiwi or whio/blue duck are relatively common, there are only a handful of dogs in New Zealand that are trained to detect feral cats.

As well as working with five-year-old Julius, Adriana is also training two German Shorthaired Pointer (GSP) puppies, Slick and Sonny Bill, who are being prepared for their Conservation Dog Interim Certification in November 2020.

GSPs are good indicator dogs and known for their high energy. Interim certification involves showing the dog is under control at all times and well socialised. Once they have interim certification, which is a prerequisite to the full certification, Adriana can start training in the presence of protected species, and on conservation land.

Adriana says the dogs are doing well and Slick has been sent to "boarding school" to further his training. "Boarding school, or going to another trainer, is the best solution to give both pups the best possible chance to succeed," she says.

Tasman Lake—ice present after calving. *Simone Cleland*

PROTECTING OUR THREATENED LANDSCAPES

A LIFETIME LOVE FOR THE LAND

After a lifetime living and working in the Mackenzie Basin, Hamish Mackenzie has seen a lot of changes. Now he's looking forward to seeing the impact Te Manahuna Aoraki can bring about to the area he loves so much.

Julia and Hamish Mackenzie

Along with wife Julia, the couple own Braemar Station on the eastern shore of Lake Pūkaki. Hamish was born at Braemar while Julia was brought up at the mouth of the Rakaia river. The couple moved back to Braemar in 2000 and farm here with their two children.

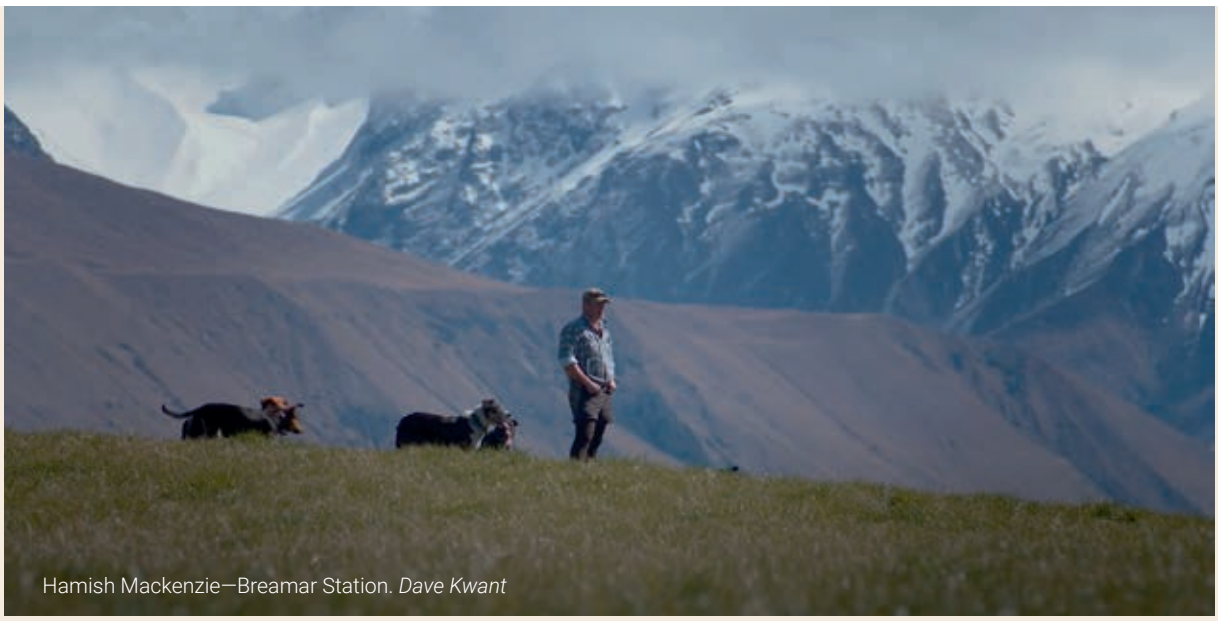
"For me the really special thing about the Mackenzie is the feeling of space and openness which is really great for your soul. You get that really peaceful feeling when you're in wide open spaces, and a real feeling of place," says Julia.

The family run sheep, cattle, deer, and "people" with self-contained tourist accommodation a sideline business started by Hamish's mother Carol. The Basin is a challenging work environment with hot dry summers and long cold winters, and they've had to increasingly deal with pests like Canada geese, rabbits, hares and wallabies. These invaders impact the landscape and others also carry TB which is a threat to their cattle and deer herds.

Wilding pines are probably their biggest challenge and Braemar works with the Ministry of Primary Industries to control those. "Without controlling them they are going to have a huge impact on this landscape. I think we are down to the last chance to deal to them before they get away from us forever," says Hamish.

Like many other landowners they are constantly undertaking weed and pest control, committing considerable effort and funding to keep them in check as best they can. The couple also provide access to their property for predator trapping and keep an eye out for nesting braided river birds like kakī/black stilt. Hamish coordinated this season's Canada geese control and they're enjoying being part of the Te Manahuna Aoraki project and working with all the partners and stakeholders.

Braemar Station. *Dave Kwant*



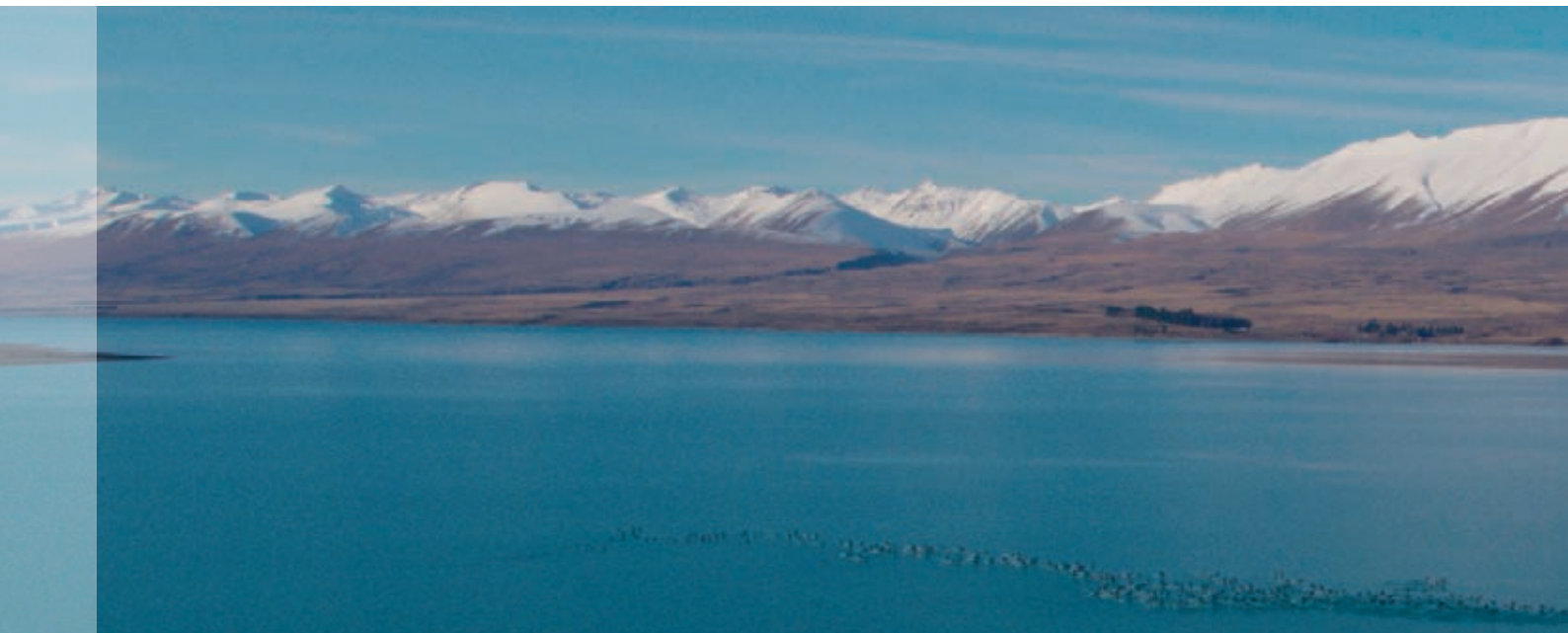
Hamish Mackenzie—Breamar Station. *Dave Kwant*

"In this area most landowners have really good relationships with DOC so to get the knowledge from iwi and find out what's important to them, and where it might meet some of our values, that's exciting. Also having the backing from people who are willing to put in funding and knowledge to make a difference in this really special area is really heartening," says Julia.

"Te Manahuna Aoraki is a huge project, their approach to us was great because we were consulted and asked our opinion, making sure there was local buy in. There are well defined goals that we can look towards, shorter term and longer term ones," says Hamish.

Hamish is proud to be involved. From a farming point of view he says it would be exciting not having to contend with as many Canada geese and hares, and farming would be easier if there was no threat of TB coming in from stoats, possums and wild cats. But as long term stewards of the land it's the biodiversity gains the project hopes to achieve that also excite says Julia.

"Hopefully we'll be sitting at home listening to native bellbirds, if we get out on the farm we'll be seeing more kakī, and more banded dotterels in our rivers, and some of those other really special creatures that are now really hard to find. They'll be more visible and thriving in our area, that's my hope."



COLLABORATIVE APPROACH TO CANADA GEESE CONTROL PAYS OFF

A collaborative approach to control Canada geese has not only improved land and waterways, it's seen station owners and other agencies make a bigger impact by working together.

Large flocks of Canada geese are a significant problem in the project area. It's estimated four or five geese will consume the equivalent amount of grass as a sheep. They also eat native grasslands and foul pastures and waterways that are the habitat of threatened native birds like pūtetekeke/crested grebe and kakī/black stilt.

Over summer and autumn, culls using humane ground and aerial hunting techniques were undertaken at Lake Pūkaki, Lake Takapō/Tekapo, Lake Alexandrina, and the Tasman, Cass and Godley river valleys. In the recent past landowners have culled the geese in a more ad hoc fashion, but this season Hamish Mackenzie from Braemar Station coordinated the cull. He says by working together they were able to remove three times as many geese, in a timely and humane way.

"The financial help was a big part of it but another huge benefit is the way it's brought everyone together. It gives everyone a lot of enthusiasm when the numbers are at a controllable level and everyone has enjoyed working together and seeing the success of it," he says.

Te Manahuna Aoraki helped fund and co-ordinate the project which also involved the Department of Conservation, Environment Canterbury, Land Information New Zealand, Mackenzie District Council, New Zealand Defence Force, and local helicopter pilots. Project Manager Simone Cleland says the high level of experience from landowners meant the culls were efficient and professional.

The united front meant getting the appropriate permissions was streamlined and Hamish says everyone was heartened by the support from locals in areas like Lake Alexandrina. "The feedback we got and who it came from was fantastic. Locals understanding and supporting—that's really heartening—they want to see places like Lake Alexandrina cleaned up so it's nicer to swim in."

Next season Land Information New Zealand is planning to fund further control of Canada geese and Hamish is hoping landowners in other areas of the country can look at the success achieved with a collaborative approach and replicate it.

Canada geese shored up on Lake Takapō/Tekapo. *Dave Kwant*

Canada geese cull—Lake Alexandrina. *Simone Cleland*

Canada geese cull—Lake Alexandrina. *Simone Cleland*

Aerial Canada geese hunting. *Geoff Woodhouse*

RABBIT ERADICATION STUDY AFFECTED BY LOCKDOWN

Simply Hunting's Shaun Aitcheson deploying trail cameras in the Godley to assess if cameras are a good tool for indicating rabbit presence.

Godley Valley

New and emerging technologies are adding more tools to the rabbit eradication toolbox.

The rabbit eradication feasibility study is looking at whether it is possible to completely remove rabbits, and keep them out, of a 6,000 ha area of the high country in the Godley Valley. The area includes private, LINZ and some DOC administered land.

All fieldwork was paused during the Covid-19 Level 3 and 4 lockdown.

The contractors had hoped to be able to make big inroads into the remaining rabbit population in the lead-up to winter when rabbits stop breeding, but this opportunity was lost. "They don't say they "breed like rabbits" for nothing. The job is a lot harder as soon as you're fighting a breeding population," says Shaun Aitcheson from Strictly Hunting.

To date, the trial has tested known rabbit control tools including: patch poisoning, day and night shooting, dogs, night vision and thermal technology. Night vision technology enables the hunters to cover more ground by quad bike as they can travel in the dark using night vision, without startling the rabbits.

Trail cameras are proving to be useful to identify where individual rabbits are so they can be specifically targetted.

Shaun says he's confident rabbits can be eliminated from the site but the last ones are always going to be the hardest. He says the key to winning is to be open to using the right tool, at the right time. This study is due to finish in June 2021.

MOTUARIKI ISLAND

Motuariki Island, in the middle of Lake Takapō/Tekapo, has huge cultural significance for the three katiaki rūnaka of Te Manahuna Aoraki: Arowhenua, Moeraki and Waihao.

According to Māori oral traditions the earliest people to inhabit Te Waipounamu (the South Island) were Hāwea, Rapawai and Waitaha. Te Rapawai established a pā site on Motuariki, and it was used for some time as a permanent living base.

In February 2020 rūnaka representatives undertook a site visit to the island to begin the process of understanding its archaeological and biodiversity status.

Te Wera King of Te Rūnaka o Arowhenua was one of those who visited. "That was my first time on the island as I've always known it as a tapu place. When I arrived I acknowledged the ancestors, telling them who we were and why we were there.

It is an extremely spiritual place, our project is to restore it," he says.

A fire on the island in 2014 is thought to have destroyed 80% of the island's vegetation and the rūnaka representatives were keen to get an understanding of what indigenous plants and animals remain and also discuss the island's cultural and archaeological importance.

The first task is to complete a comprehensive management plan for the island. Covid-19 has delayed this project and it is likely the plan will now be completed next year.

Lake Takapō/Tekapo with Motuariki Island. *Dave Kwant*

COLLABORATIVE FOCUS ON INVASIVE WEED CONTROL

Collaborative work to control invasive weeds has been given a boost with extra Covid-19 Jobs for Nature funding from Land Information New Zealand (LINZ) committed to target local distributions in the coming years.

If left unchecked invasive weeds have the potential to spread, so early intervention is key. This additional funding will complement the work already underway by landowners, LINZ, Environment Canterbury (ECan), the Department of Conservation, and Te Manahuna Aoraki.

BROOM CONTROL

There are encouraging signs that biocontrol agents are starting to weaken and stress broom infestations being targeted in the project area.

Broom is a scrawny shrub that spreads quickly. There are two main infestations in the project area covering around 230 ha at Jollie River and Lake Takapō/Tekapo's Boundary Stream.

DOC has been trialling biocontrol agents like broom seed beetles, broom psyllids and broom gall mites for over a decade. These bugs weaken different parts of the broom plant, reducing its strength and ability to seed. The arrival of Te Manahuna Aoraki saw the numbers of gall mites boosted at Jollie River and Boundary Stream.

Senior DOC ranger Peter Willemse is leading the weed programme. He says while biocontrol agents work slowly, gall mites are becoming noticeably more abundant and the broom plants are looking stressed.

"The more you take the vigour out of the broom, the less seed is produced and then you start getting into a winning cycle. Over time those bugs weaken the broom and spraying becomes more effective so we get a combined effect," he says.

Te Manahuna Aoraki is trialling biocontrol alongside annual spraying which is undertaken by DOC, ECan and LINZ. Peter says the biocontrol agents have been rigorously tested and work well in large dense areas, while traditional spraying around the edges helps with containment. "The biocontrol agents are very primitive organisms and very host specific. Once the broom has gone, eventually they will die out as a species in New Zealand."

In January aerial mapping of the infestations was completed to monitor the effectiveness of the biological control. This will be repeated in December 2022 and Otago University is currently completing the knitting of geo-mapping imagery so we can better see our progress. Additional funding from LINZ will further target the infestations and be project managed by Te Manahuna Aoraki.

Impact of gall mites on broom. *Simone Cleland*

Broom stressed by biological control. *Simone Cleland*

Rowan tree. *Robyn Janes*

ROWAN CONTROL

A project to eliminate rowan from the national park and the Ben Ōhau Range was delayed by the Covid-19 lockdown but additional funding will help wipe out this invasive weed in coming years.

Rowan is a woody tree with bright berries that are easily spread by birds. It was planted by settlers in homestead gardens.

In 2019 Te Manahuna Aoraki completed aerial spot spray control and used ground based contractors to cut trees and treat stumps. DOC and stations like Glentanner have also sprayed thousands of rowan. It had been hoped to complete this work in 2020. However, the spread of rowan was greater than initially thought and autumn control was unable to be undertaken because of the Covid-19 lockdown.

"Rowan trees stand out like neon lights in autumn when the leaves are glowing red but by the time we came out of lockdown they had all discoloured. That's not normally a problem but in that area there are a lot of native mānatu/ribbonwood trees and when they've lost their foliage their stalks are very similar so it's not advisable to spray at that time," says Senior DOC ranger Peter Willemse.

Sparse infestations are more cost effective and less labour intensive to target from the air. Peter helped develop the herbicide X-Tree Basal which is applied from a helicopter. "It's pretty specialised, the rotor wash from the chopper separates the foliage and then you do a wee pirouette around the tree, effectively chemically ring-barking it."

This is complemented by ground based control and the initial phase of the rowan control project will now be completed in 2021. LINZ has offered substantial additional funding to help with the rowan control which Te Manahuna Aoraki will project manage.

Peter says he's confident rowans can be eliminated. "It's doable—I'm fairly confident when I retire in a few years we'll only be mopping up the odd one. There'll be some really good wins on the board."

Camp Stream. *Nick Foster*

RESEARCH AND DEVELOPMENT

HEDGEHOGS LIBERATED BY UNKNOWING SETTLERS

Made famous by Beatrix Potter and brought to New Zealand by settlers to remind them of home, hedgehogs are far from cute European imports. Instead, they are wreaking mayhem on our native species.

They were first brought to New Zealand by acclimatisation societies, with the Provincial Council in Nelson and the Colonial Parliament in Wellington introducing legislation in 1861 to encourage the importation of animals which would "contribute to the pleasure and profit of the inhabitants". Later, their introduction was also justified as a way to control garden pests such as slugs, snails and grass grubs.

According to a 1975 report in the New Zealand Journal of Zoology, the very first hedgehogs arrived in Canterbury in 1869. Numbers appear to have increased dramatically in the South Island between 1910 and 1940 and they were first recorded in Twizel somewhere around 1940–1949.

It seems they were deliberately transported and released throughout the country. The same report talks about a passenger seeing train guards releasing a crate of hedgehogs at several stops on a trip, including Clyde and Cromwell.

The spiky, nocturnal animals target the nests of braided river birds like turiwhatu/banded dotterel and tarapiroe/black-fronted tern, eating chicks and eggs. They are also known to kill lizards, skinks, wētā, and other rare insects.

Studies of hedgehog droppings and stomachs have unearthed some disturbing finds. A 2009 report in the New Zealand Journal of Ecology found 21% of hedgehog guts from Macraes Flat, north Otago, contained native skink remains, with a single hedgehog dropping from near Alexandra containing ten McCann's skink feet. The same report found a single hedgehog gut from the central South Island contained 283 wētā legs.

Hedgehogs' prefer lowland pastoral areas, and become less common with increasing altitude however they have been seen at 1,900 m in the project area.

GPS-tagged hedgehog. *Nick Foster*

INVASIVE PREDATOR RESEARCH PROVIDING ENCOURAGING DATA

The second year of research into how far invasive mammals like hares, stoats, ferrets and hedgehogs range in the alpine areas is providing confidence that natural barriers like mountains will severely limit predator reinvasion.

Otago PhD student Nick Foster is studying the movement of invasive mammals between seasons, their altitudinal ranges and how effectively mountains may act as barriers. He has used a mix of detection devices including motion activated cameras, tracking tunnels, chew cards and GPS transmitters.

PEST DETECTION CAMERA NETWORK DATA VALIDATED

A second year of running a pest detection camera network to study how far invasive mammals range in the mountains has followed the same trends as those evident last year, with some minor extensions to the highest records of some species, but nothing unexpected.

Stoats, hares and mice remain the highest detected species with one stoat being seen at 2,135 m. Researcher Nick Foster has trawled through thousands of images from the trail cameras which were positioned in the mountains during summer.

Nick says the data, combined with the records produced by the established trapping networks, can now be applied to the Te Manahuna Aoraki

Hare caught on trail camera at 1685 m overlooking the Tasman delta.

landscape. "We can use this data to identify where a natural landscape barrier is likely to work well, and where we will need to anticipate and plan for the trickle of pest populations through the more vulnerable parts of the barrier back into the project area," he says.

HEDGEHOGS UNLIKELY TO CROSS HIGH MOUNTAIN RANGES

The change to Level 3 lockdown came just in time for the GPS study on hedgehogs. GPS transmitters were attached to hedgehogs over summer to track how far they travel in high altitude areas like the Two Thumb range. However the batteries were reaching the end of their lives during lockdown. Fortunately Nick was able to head back into the mountains when the country moved to Level 3 lockdown at the end of April, to track the transmitted hedgehogs down before the data was lost forever.

On rare occasions, hedgehogs have been detected above 1,900 m, but densities decrease with altitude.

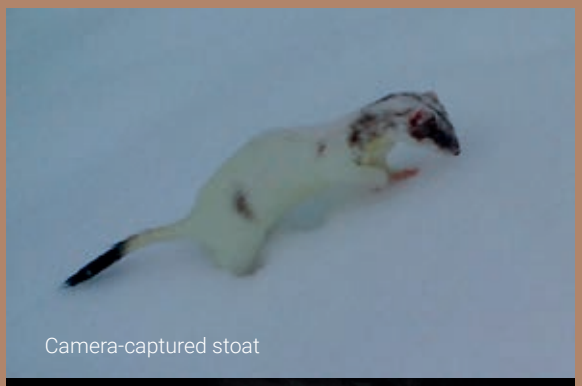
Preliminary GPS results found that none of eight hedgehogs that were captured in the immediate area, crossed one of the most vulnerable, lower sections of the mountain range. This suggests we can expect very low rates of reinvasion in even the most weak areas of the project boundary and can prepare for them.

Servicing high-altitude cameras in the Malte Brun range. *Nick Foster*

SEASONAL TRENDS

With the help of local land owners, long-term predator-monitoring cameras have been installed across the entire upper Mackenzie Basin, including at Lilybank Station, Godley Peaks Station, Glenmore Station, Glentanner Station and Ferintosh Station. The cameras were installed in December 2019 at ranges between 600 m to 2,000 m. This data will be used to determine how the activity of predators at various altitudes changes across the year.

So far, we have found detection rates of all pest species at high and mid elevations decrease through the winter period, with some species being completely absent at all but low elevations during this time. This study is ongoing, but these preliminary results suggest that this strong seasonal effect will be important in defining the minimum adequate 'control zone' for several species, by targeting them when they are at higher densities at lower elevations throughout winter.



Camera-captured stoat

Camera-captured feral cat

HARE STUDY "FIRST OF ITS KIND"

The GPS study of European hares at high elevations is now drawing to a close. What started as a ambitious project with several unknown quantities has eventuated into a first-of-its-kind study that has produced extremely valuable information for the management of hares New Zealand-wide.

Hares were released in New Zealand in 1851, mainly for sport, although they were also a food source. They browse sensitive native vegetation and also support populations of predators as a prey resource.

The study would not have been possible without the help of helicopter pilot Mark Pridham, and high country farmers Laurie Prouting and Johnny Wheeler, who helped to develop a way of projectile netting hares from helicopters. GPS collars were then attached to the hares with the collars scheduled to transmit data once every couple of weeks. Nick tracks the hares and downloads the data so he can follow where they have been and what they have been doing.

This has revealed the movements, home ranges and habitat preferences of 28 hares, many of which have endured harsh winter conditions in the high altitudes of the Two Thumb Range. The last of the GPS-collared hares will be collecting data until March 2021.

Hare released after GPS collar attached

Netting a hare

SCREE PEA A TASTY DELICACY

The pretty pink flowers of the scree pea, along with many other mountain natives, are a tasty delicacy for hares in the project area.

Scree pea, or *Montigena novae-zelandiae* grows in scree in the eastern Southern Alps between 800 and 1,500 m. Its genus *Montigena*, means Mountain Born. The other 51 species in the genus are found in Australia with only the scree pea endemic to New Zealand.

The scree pea pokes its head above ground in December, and flowers for a few weeks in January at which time it is vulnerable to browsing hares.

NICK FOSTER PROFILE

As a teenager, when he wondered what he was going to do with his life, it's fair to say Nick Foster never expected to be roaming mountains at midnight searching for hedgehogs.

Nick is our small mammal specialist—helping the project as a researcher alongside completing his PhD with Otago University.

While he's Australian, a visit to the Te Anau DOC visitor centre in 2009, where he learnt about the plight of our native birds, led him to pursue a life in conservation. Back home, he completed a BSc at the University of the Sunshine Coast, and did an Honours project in North Queensland, advancing camera trapping methodology for the Northern Quoll, an endangered native marsupial.

He then went on to work in the management of Northern Quoll populations in wind farm development projects. But the call of research (and the tropical heat) was too strong, and he headed to Otago University to do his PhD.

Nick's work with Te Manahuna Aoraki means he spends a lot of his time in the mountains.

There's no such thing as a typical day. He could be setting tracking tunnels, camera traps, putting out chew cards, working his way along an altitudinal gradient, checking live traps, or finding animals to put transmitters on.

That's where the hedgehogs come in. Once he finds one he needs to ensure it is the right weight to carry a transmitter. He gently bounces them up and down (with leather gloves on) so they uncurl and he can check whether it is male or female. Then it's time to snip off a few spines with nail-clippers to make a nice even surface before gluing on the transmitter. The transmitters enable Nick to follow the hedgehogs' movements over time.

Nick says he couldn't have dreamed up a better project to be involved in. Te Manahuna Aoraki aligns perfectly with his academic and recreational interests—plenty of invasive species work to be done and countless hills to climb.

STOAT TRAPPING TRIAL ON MALTE BRUN RANGE

Planning has been undertaken for a feasibility study high in the mountains to test whether stoats can be completely removed by trapping and then stopped from reinvading by natural barriers like glaciers and mountain ranges.

The trial site in the Tasman Valley, on the western side of the Malte Brun Range was selected because most of the potential reinvasion sites surrounding the area are over 2,400 m elevation and surrounded by glaciers, creating a natural barrier to re-invasion.

This is a challenging active alpine environment to work in and the project will use experienced alpine guides to help manage health and safety. The study is due to start in November 2020 when the avalanche risk diminishes.

Two traps will be deployed in each stoat home range (100 hectares) so they don't have to be checked monthly. A motion activated trail camera will also be installed in each home range to monitor population density.

While current trapping is reducing predator numbers to low levels the trapping networks are expensive to maintain. This study will help us to plan what future predator control would best suit these alpine environments.

HIGH ALTITUDE FENCE TRIAL

The three different predator proof fences being trialled at Mt Hay Station on the Two Thumbs range are still standing, but they are yet to experience the full force of the weather.

The Te Manahuna Aoraki project area is surrounded by naturally defendable mountain boundaries. However if the 20-year project goes ahead we will need to reinforce the leaky lower boundary from reinvading pests and this is likely to be in the form of a pest exclusion fence.

This trial is testing three fence designs in local conditions to see how they withstand the extreme winds and temperatures found in the project area. They were designed with input from landowners and Zero Invasive Predators (ZIP).

A webcam and weather station are monitoring conditions and the highest wind gust so far was 197.4 km/hr in December 2019. The fences all continue to hold up well but they are yet to experience the 300 km/hr plus gusts that can happen over spring. This trial is due to finish in September 2021.

DESIGN A

- short, strong, proven design
- 1.1 m high
- PPF cap with wooden posts at 2 m centres
- 12 m total length

DESIGN B

- short, strong, proven design
- 1.8 m high
- PPF cap with wooden posts at 2 m centres
- 12 m total length

DESIGN C

- short, novel design
- 1.1 m high
- PPF cap (however, plan to also trial 60 mm HDPE pipe cap)
- 12 m long with wooden posts at each end
- 5T irons at 2 m centres
- the intention is to test structural capability of the overall novel fence, not individual components
- 12 m total length

Juvenile kakī/black stilt. *Liz Brown*

SUSTAINING OUR WORK

VOLUNTEERS EXTEND TRAPPING TO THE BACK-COUNTRY

David Sagar and Gin Barker signing Predator Free Aoraki document

This year saw the official launch of volunteer trapping group Predator Free Aoraki with an aim of protecting species like the nationally endangered tuke/rock wren in remote areas of Aoraki/Mount Cook National Park.

Since 2005, volunteers have checked 234 stoat traps around Aoraki village and the Tasman Valley. They have now formed Predator Free Aoraki and Te Manahuna Aoraki provided the group with 120 traps to extend the network in areas like Hooker Valley, Sealy Range, Sefton Biv', Tasman Lake flats and Wakefield Ridge. DOC's Community Fund also provided the group with $8,900 for gear like personal locator beacons, high vis and GPS navigators.

This is the first time this back-country has been trapped. The group was able to begin the network at Tasman Lake and Wakefield Ridge however the Covid-19 lockdown delay meant the avalanche risk was too great to deploy all the new traps. The network will be completed in late 2020.

Project Manager Simone Cleland says it is great to work with the community to protect threatened species and over time we would like to see more groups like this established.

Tom Smits checking traps in Godley after lockdown. *Pat Soto*

LONG TERM PLANNING UNDERWAY

Work has begun on the long term thinking and planning around the potential 20-year Te Manahuna Aoraki project.

Launched in 2018, the project is currently in a three-year interim "no-regrets" phase, undertaking a number of projects to provide biodiversity gains across the project area. These projects are providing critical learning for the future, and also helping demonstrate how partners and stakeholders can work together to ultimately secure a 310,000 ha mainland island over a period of 20 years.

While Covid-19 has slowed down some of this work, the board and project team have started documenting and sharing some of the initial technical thinking. Conversations are also continuing with the Te Manahuna Aoraki communities around their priorities and expectations of the project.

Many of the research projects that are underway are not due to be completed until 2021. This body of research will be important to add to the knowledge base so the science aspects of the long-term project are still in the planning and refining phase. Work is also looking at prioritising which weed and pest species the project can make the most impact with and discussions will be had with other stakeholders in the Mackenzie about their priorities and how Te Manahuna Aoraki can best align work for the greatest biodiversity impact.

"This is an exciting phase as we share learnings, begin to shape the detailed path forward, and understand the relationships, expertise and resourcing that will make Te Manahuna Aoraki a success," says Te Manahuna Aoraki board director Devon McLean.

Mueller Lake—Hooker Valley. *Robyn Janes*

MEET SOME OF THE LONG-TERM PLANNING TEAM

RICHARD MALONEY–TECHNICAL LEAD

Google Richard Maloney and the extensive list of reports and science publications that appear give an insight into his vast knowledge and experience working in ecology and the Mackenzie Basin.

Richard is DOC's Principal Technical Advisor and the Technical Lead for the Te Manahuna Aoraki project.

Growing up on the West Coast around Okarito and Harihari, he has always had a love of extreme environments and nature. He started work in Westland National Park at the age of 18, building huts and tracks as a summer holiday job and stayed on, working for what was then the Wildlife Service in Takapō/Tekapo for three years. During that time he was a field assistant to Ray Pierce who was doing a PhD on kakī/black stilt. The pair live-captured feral cats and ferrets, then followed their movements with radio transmitters. It was some of the first research of this kind done in a dry-lands area.

Richard then went on to do an MSc in zoology at Canterbury University where he attempted to train toutouwai/robin to recognise and respond to introduced mammalian predators like stoats. He found some of the first evidence that native birds were tame towards predators. "We did manage to train the birds to better protect themselves, but they didn't do enough to save themselves," he says.

Next came a job working as an ecologist with Project River Recovery in Twizel before he took up a position in Saudi Arabia working with houbara bustards and completing a PhD on the reintroduction and breeding ecology of the bustard. This experience gave him a greater understanding of managing populations of rare birds that was to be very useful when he returned to Twizel as a scientist for DOC's Kakī Recovery Programme.

"Once you have worked on braided rivers you get a passion for it, they are really beautiful places and there's a lot going on. You get addicted to them," he says.

Just before Richard began working with the kakī programme in 1999, the RHD rabbit virus was introduced and the resulting drop in rabbit numbers had a devastating effect on kakī as predators switched prey after the rabbits disappeared. Kakī numbers dropped from a stable population of 50 to only 33 birds, with four pairs in the wild.

"We ramped up the kakī captive work, harvesting way more eggs from the wild, a strategy they still employ today," he says.

In 2005 he was offered a national role with DOC, putting a national perspective on the recovery of threatened species and landscapes. "We started thinking about how to prioritise threatened species nationwide. How we can focus better on the species and ecosystems that need it first, and how much effort we should put in," he says.

Richard has been involved with Te Manahuna Aoraki since its inception as a landscape scale biodiversity project. He has provided technical advice along the way and is now involved in long term planning for the project.

"It's really healthy not to lose sight of the work that happens on the ground. My involvement with Te Manahuna Aoraki means I can take the learnings from the project and take them nationally."

SIMONE CLELAND–TE MANAHUNA AORAKI PROJECT MANAGER

As a 17-year-old Simone Cleland decided she wanted to work in braided river ecosystems with threatened species like kakī/black stilt. Nearly 20 years later she's still bringing a huge amount of passion, energy and knowledge to that dream job.

As Te Manahuna Aoraki's Project Manager it is Simone's job to implement the work on the ground. On any given day you could find her working with the technical advisors, liaising with the landowners and other project partners, checking on our research projects, or up in the high country searching for rare birds.

Simone comes from a rural background and grew up close to the Mackenzie Basin, regularly holidaying in the project area with her family. "This is the landscape that I identify with, it's an amazing place, it's exceptionally unique and beautiful. The people within it, and the species that live here are all incredible," she says.

It's one thing to decide you want to work with kakī but another to make it happen. Richard Maloney remembers Simone turning up at his office as a 17-year-old wanting to volunteer. Initially he wasn't keen on another volunteer who he assumed wouldn't stick around for longer than six weeks. But Simone was undeterred, hassling him to let her help. That six weeks of introduction work has turned into a lifelong passion.

Simone went on to study for a degree at Lincoln University, returning to work with DOC's Kakī Recovery Programme during holidays. A stint overseas followed graduation but when she saw a job working with kakī advertised she applied and came home.

"Kaki are an amazing bird. They are really beautiful and elegant, but they survive in such a harsh environment. It can be up to minus 20 degrees in the winter, and their feathers are fully frozen, or it can be 40 degrees in the summertime. They survive out in these extreme environments, I think that's pretty impressive," she says.

While Simone says kakī are a great flagship species for braided rivers, she is quick to point out there are many other exceptional species that live within the project area. tarapiroe/black-fronted terns, ngutu parore/wrybill, tuke/rock wren and robust grasshoppers are all favourites.

What interested her about Te Manahuna Aoraki was the potential to make huge biodiversity gains. "When I first heard about this project, all I could think of was how I could be involved. It's pretty game changing from a braided river and alpine point of view."

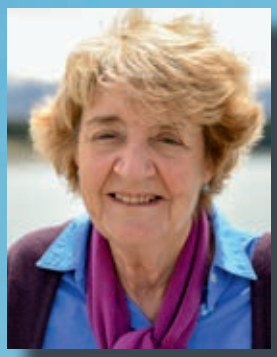
She has seen first-hand the environmental change that's happened as a result of predator control in the Tasman undertaken by DOC with the support of landowners and other organisations over the last 10 years. "Protecting one river isn't enough. Working at a landscape level, it's almost hard to imagine what we could collectively achieve in 20 years. It's very exciting to be part of the team making this happen."

When she's not working you are likely to find Simone horse-riding—another passion. She's also loving working with so many partners in the project.

"Learning the whakapapa history and values associated with Aoraki, spending time with rūnaka and seeing the land through their eyes is really rewarding. We're also lucky to work with passionate landowners, a lot of these people are fourth generation farmers. I think the commonality of all of the partners in the project is their appreciation for the landscape and the species that live within it. It is pretty iconic to New Zealand, and it'll be really great to see Te Manahuna Aoraki thrive in years to come."

MEET THE BOARD

DIRECTORS



Dr Jan Wright
Chair

Devon McLean
NEXT Foundation
Representative

David Higgins
Rūnaka Representative

Dr Kay Booth
Department of
Conservation
Senior Liaison Officer

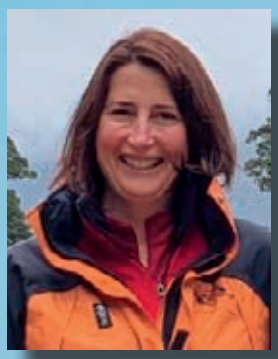
OBSERVERS

Jerome Sheppard
LINZ Representative

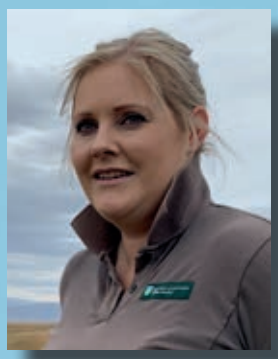
Stephen Phillipson
New Zealand Defence
Force Representative

Kakī/black stilts. *Kate Lawrence*

MEET THE TEAM



Fiona McNab
Project Director



Simone Cleland
Project Manager

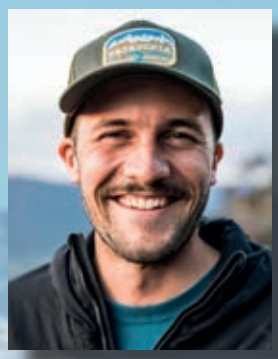
Tom Smits
Biodiversity Ranger
Predator Control
Team Lead

Pat Soto
Biodiversity Ranger
Predator Control

Julia Gibson
Biodiversity Ranger
Outcome Monitoring

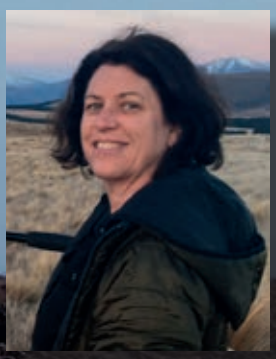
Adriana Theobald
Biodiversity Ranger
Conservation Dogs
and Feral Cat Control

Peter Willemse
Senior Ranger
Weeds



Nick Foster
Small Mammal
Researcher

Richard Maloney
Technical Advisor



Robyn Janes
Communications
Manager

Leigh Cooke
Accountant

Devon McLean—Te Manahuna Aoraki director, Conservation Minister Eugenie Sage, Dr Jan Wright—Te Manahuna Aoraki Chair at Fork Stream. *Simone Cleland*

Tarāpuka/black-billed gull chick in Tasman River. *Julia Gibson*

Financial Statements

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

Contents

Independent auditor's report

To the Directors of Te Manahuna Aoraki Limited

We have audited the financial statements which comprise:

- the statement of financial position as at 30 June 2020;
- the statement of comprehensive revenue and expenses for the year then ended;
- the statement of changes in equity for the year then ended;
- the statement of cash flows for the year then ended; and
- the notes to the financial statements, which include a statement of accounting policies.

Our opinion

In our opinion, the accompanying financial statements of Te Manahuna Aoraki Limited (the "Company"), present fairly, in all material respects, the financial position of the Company as at 30 June 2020, its financial performance and its cash flows for the year then ended in accordance with Public Benefit Entity Standards Reduced Disclosure Regime.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (New Zealand) (ISAs (NZ)) and International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

We are independent of the Company in accordance with Professional and Ethical Standard 1 (Revised) *Code of Ethics for Assurance Practitioners* (PES 1) issued by the New Zealand Auditing and Assurance Standards Board and the International Ethics Standards Board for Accountants' *Code of Ethics for Professional Accountants* (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Other than in our capacity as auditor we have no relationship with, or interests in, the Company.

Information other than the financial statements and auditor's report

The directors are responsible for the financial statements. Our opinion on the financial statements does not cover the other information included in the financial statements and we do not express any form of assurance conclusion on the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Directors for the financial statements

The Directors are responsible, on behalf of the Company, for the preparation and fair presentation of the financial statements in accordance with Public Benefit Entity Standards Reduced Disclosure Regime, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements, as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (NZ) and ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located at the External Reporting Board's website at:
https://www.xrb.govt.nz/standards-for-assurance-practitioners/auditors-responsibilities/audit-report-8/

This description forms part of our auditor's report.

Who we report to

This report is made solely to the Company's directors, as a body. Our audit work has been undertaken so that we might state those matters which we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's directors, as a body, for our audit work, for this report or for the opinions we have formed.

The engagement partner on the audit resulting in this independent auditor's report is Karl Deutschle.

For and on behalf of:

PricewaterhouseCoopers

Chartered Accountants
30 September 2020

Auckland

Entity Information

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

Issued Share Capital
100 Ordinary Shares

Registered Office
Hayes Knight Limited
Level 1
5 William Laurie Place
Auckland 0632

Directors
D W McLean
J C Wright

Company Number
6854715

Banker
BNZ Bank

Solicitor
Chapman Tripp
23 Albert Street
Auckland

Auditor
PricewaterhouseCoopers
15 Customs Street West
Private Bag 92162
Auckland 1142

Date of Formation
14 June 2018

Shareholder

Hutton Wilson Nominees Limited	100 Ordinary Shares

Entity's Purpose or Mission
Te Manahuna Aoraki is a large-scale conservation partnership focused on restoring the iconic natural landscapes and threatened species of the upper Mackenzie Basin and Aoraki/Mt Cook National Park.

Main Sources of Cash and Resources
Te Manahuna Aoraki Limited has been made possible by the generosity of philanthropic Trusts and sponsorships.

Statement of Comprehensive Revenue and Expenses

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

	Notes	2020 $	2019 $
Revenue			
Revenue from Non-Exchange Transactions			
Grants Received	7	1,573,954	1,644,173
Donations		30,000	-
Revenue from Exchange Transactions			
Interest Received		9,746	130
Other Revenue		20,823	-
Total Revenue		**1,634,523**	**1,644,303**
Expenses			
Accounting	7	14,266	6,854
Administration		1,271	1,498
Auditing Fees		9,450	9,450
Board Expenses		1,967	-
Communications		62,624	38,909
Consultancy		23,921	13,806
Contractors		407,021	226,123
DOC services and supplies		339,905	323,652
Insurance		896	525
Motor Vehicle Expenses		8,840	6,329
Other expenses		19,260	10,925
Pest Eradication Equipment	7	42,592	55,344
Salaries		109,692	-
Traps, Poison and Monitoring Supplies		60,468	166,526
Travel	7	18,125	8,317
Total Expenses		**1,120,298**	**868,258**
Net Surplus before Depreciation		**514,225**	**776,045**
Depreciation			
Depreciation	4	62,401	39,143
Total Depreciation		**62,401**	**39,143**
Total Comprehensive Revenue and Expenses for the Period		**451,824**	**736,902**

Statement of Changes in Equity

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

	Notes	2020 $	2019 $
Equity			
Opening Balance		736,902	-
Increases			
Total Comprehensive Revenue and Expenses for the Period		451,824	736,902
Total Increases		**451,824**	**736,902**
Total Equity		**1,188,726**	**736,902**

Statement of Financial Position

Te Manahuna Aoraki Limited
As at 30 June 2020

	Notes	2020 $	2019 $
Assets			
Current Assets			
Cash and Cash Equivalents	2	606,915	789,755
GST Refundable		28,057	-
Term Deposits		454,286	-
Other Receivables		204,053	43
Total Current Assets		**1,293,311**	**789,798**
Non-Current Assets			
Fixed Assets	4	89,162	146,219
Total Non-Current Assets		**89,162**	**146,219**
Total Assets		**1,382,473**	**936,017**
Liabilities			
Current Liabilities			
Accounts Payable		37,286	90,588
Accrued Expenses		101,289	105,929
GST Payable		-	2,598
Income in Advance		55,172	-
Total Current Liabilities		**193,747**	**199,115**
Total Liabilities		**193,747**	**199,115**
Net Assets		**1,188,726**	**736,902**
Equity			
Retained Earnings		1,188,726	736,902
Total Equity		**1,188,726**	**736,902**

For and on behalf of the Board:

Director

Date: 30/09/2020

Director

Date: 30/09/2020

pwc

Statement of Cash Flows

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

	Notes	2020 $	2019 $
Cash Flows from Operating Activities			
Grants Received		1,429,126	1,644,173
Donations Received		30,000	-
Interest Received		8,374	130
Other Revenue Received		18,447	-
GST (Payments)/Refunds		(38,071)	14,265
Withholding Tax Paid		(2,637)	-
Payments to suppliers and employees		(1,161,601)	(683,451)
Total Cash Flows from Operating Activities		**283,638**	**975,117**
Cash Flows from Investing and Financing Activities			
Payments to acquire property, plant and equipment		(14,568)	(185,362)
Cash flows from investing in term deposits		(454,286)	-
Total Cash Flows from Investing and Financing Activities		**(468,854)**	**(185,362)**
Net (Decrease)/Increase in Cash		**(185,216)**	**789,755**
Opening cash		789,755	-
Effect of exchange rate gain on cash		2,376	-
Cash and Cash Equivalents at end of year	**2**	**606,915**	**789,755**

Notes to the Financial Statements

Te Manahuna Aoraki Limited

For the year ended 30 June 2020

1. Statement of Accounting Policies

The financial statements presented here are for the entity Te Manahuna Aoraki Limited ("the entity"), a registered company under the Companies Act 1993 and a registered charity under the Charities Act 2005.

(a) Statutory Base

The financial statements have been prepared in accordance with Generally Accepted Accounting Practices in New Zealand ("NZ GAAP"). The entity is a public benefit not for profit entity for the purposes of financial reporting and complies with the Public Benefit Entity Standards Reduced Disclosure Regime (PBE Standards RDR) on the basis that it does not have public accountability and is not defined as large (i.e. does not have total expenses over $30 million).

The financial statements are presented in New Zealand dollars ($), which is the entity's functional currency. All financial information presented in New Zealand dollars has been rounded to the nearest dollar.

(b) Measurement Base

The measurement base adopted is historical cost.

(c) Changes in Accounting Policies

There have been no changes in accounting policies. Policies have been applied on a consistent basis with those of the previous reporting period unless otherwise stated. Certain prior year comparatives have been restated. The impact of the restatement is not material.

(d) Revenue Recognition

The specific accounting policies for significant revenue items are explained below:

Revenue from non-exchange transactions

Non-exchange transactions are those where the entity receives an inflow of resources but provides no direct consideration in return. They include the following types of transactions:

(i) Grants Received

Grants are recognised as revenue when they become receivable unless there is an obligation in substance to return the funds if conditions of the grant are not met. If there is such an obligation, the grants are initially recorded as grants received in advance and recognised as revenue when conditions of the grant are satisfied. Grants revenue is categorised as non-exchange where there is no obligation in substance associated with the funding provided.

(ii) Donations

Donations are recognised as revenue when they are received.

Revenue from exchange transactions

Exchange transactions are those where the entity receives an inflow of resources and provides approximately equal value to another entity in exchange.

(iii) Interest Income

Interest income is recognised on a time-proportion basis using the effective interest method.

(e) Expenses

A liability is accrued for expenses incurred in the year estimated at the future cash outflows for the goods and services provided and yet to be billed.

(f) Goods and Services Tax (GST)

The entity is registered for GST. All amounts are stated exclusive of goods and services tax (GST) except for accounts payable and accounts receivable which are stated inclusive of GST.

Notes to the Financial Statements

Te Manahuna Aoraki Limited

For the year ended 30 June 2020

1. Statement of Accounting Policies (continued)

(g) Income Tax
The entity is a registered charity under the Charities Act 2005 and accordingly is not subject to income tax.

(h) Receivables
Receivables are stated at their estimated realisable value. Bad debts are written off in the year in which they are identified.

(i) Fixed Assets
All Plant & Equipment assets are recorded at cost less accumulated depreciation and impairment.

Depreciation of the assets has been calculated using the straight line method at a rate of 33%, which reflects the useful life of the assets.

(j) Accounts Payable
These amounts represent liabilities for goods and services provided to the entity prior to the end of the financial year which are unpaid. The amounts are unsecured.

(k) Employee Benefits
Liabilities for salaries and leave entitlements are recognised in surplus or deficit during the period in which the employee provided the related services. Liabilities are measured at the amounts expected to be paid when the liabilities are settled.

(l) Income in Advance
Income in advance is made up of grants tied to a particular purpose where there is a requirement to repay funds if they are not fully utilised for that particular purpose. A liability is recognised to the extent that such conditions are unfulfilled at the end of the reporting period.

(m) Leases
Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases are charged to the statement of comprehensive revenue and expense on a straight line basis over the period of the lease.

(n) Foreign Currency
Foreign currency transactions are translated into New Zealand dollars using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the statement of comprehensive revenue and expense.

(o) Financial Instruments
The entity's financial asets comprise cash and cash equivalents and receivables. All of these financial assets are categorised as "loans and receivables" for accounting purposes in accordance with financial reporting standards.

The entity's financial liabilities comprise accounts payable and accrued expenses which are categorised as "financial liabilities measured at amortised cost" for accounting purposes in accordance with financial reporting standards.

Notes to the Financial Statements

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

2. Cash and Cash Equivalents	2020 $	2019 $
BNZ cheque account	496,391	715,540
BNZ USD call account	110,524	74,215
Total Cash and Cash Equivalents	**606,915**	**789,755**

3. Financial Instruments

The carrying value of financial assets and liabilities in each of the financial instrument categories are as follows:

	2020 $	2019 $
Loans and Receivables		
Cash and Cash Equivalents	606,915	789,755
Term Deposits	454,286	-
Accounts Receivable	204,053	43
Total Loans and Receivables	**1,265,254**	**789,798**
Financial Liabilities Measured at Amortised Cost		
Accounts Payable	37,286	90,588
Accrued Expenses	101,289	105,929
Total Financial Liabilities Measured at Amortised Cost	**138,575**	**196,517**

4. Fixed Assets	2020 $	2019 $
Plant & Equipment		
Plant & Equipment at Cost	190,706	185,362
Less Accumulated Depreciation	(101,544)	(39,143)
Total Plant & Equipment	**89,162**	**146,219**

Reconciliation of the carrying amount at the beginning and end of the period:

As at 30 June 2020	Plant and Equipment
Opening net book value	146,219
Additions	5,344
Disposals	-
Depreciation	(62,401)
Closing net book value	**89,162**

5. Contingent Liabilities

At balance date there are no known contingent liabilities (2019: nil).

Notes to the Financial Statements

Te Manahuna Aoraki Limited
For the year ended 30 June 2020

6. Commitments

As at reporting date Te Manahuna Aoraki Limited has entered into an operating lease for a motor vehicle.

	2020 $	2019 $
Less than one year	1,650	1,707
Total Operating Lease	**1,650**	**1,707**

There were no future capital commitments at period end (2019: nil).

7. Related Parties

Hutton Wilson Nominees Limited is the shareholder of the company. Hutton Wilson Nominees is also a shareholder of Zero Invasive Predators and Project Janszoon Trust's corporate trustee. Both are related parties that have key management personnel in common with Te Manahuna Aoraki Limited.

During the period, Te Manahuna Aoraki Limited received grants of $500,000 (2019: $500,000) from Hutton Wilson Charitable Trust.

During the period, expenses amounting to $24,897 (2019: $22,920) were paid to:
- Project Janszoon $203 for travel costs (2019: $243 for communication costs);
- Hutton Wilson Nominees: $7,200 for accounting services (2019: Hutton Wilson Charitable Trust $6,664 for accounting services, travel and communication) ;
- Zero Invasive Predators: $17,494 for pest eradication equipment (2019: $16,013 for plant and equipment).

8. Events Subsequent to Balance Date

No subsequent events occurred after balance date requiring disclosure within the financial statements.

9. Covid-19 Impact

There have been no material negative impacts on the entity as a result of the Covid-19 pandemic. In fact the government investment in Jobs for Nature and regional alliances in conservation and employment related outcomes is likely to result in net benefits to the project and strategic prioritisation of the general approach nationally. The entity will continue as a going concern for the foreseeable future and deliver its programme of work as planned.

Waterfall on Two Thumb Range. *Nick Foster*

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